



Energy, Climate change, Environment

European Marine Observation and Data Network (EMODnet)

Coming Soon in 2018 – Marine litter and vessel density maps

NEWS ARTICLE | 11 January 2018

EMODnet Chemistry - marine litter concentration maps

Work has been ongoing in EMODnet Chemistry for some time to establish the best approach to its synergy with existing information systems and achievements of EMODnet Chemistry so far. Thereafter it gives detailed information on how to deal with marine litter data for the scope of the EMODnet Chemistry 3 project and, in particular, the formats to be used for gathering and to establish how to collect, aggregate and produce these maps. [Discover how Chemistry will be gathering and managing marine litter data.](#) [Guidelines for gathering and managing marine litter data have been updated.](#) [Litter data templates also available.](#)

EMODnet Human Activities – Vessel density maps

Back in 2016 EMODnet Human Activities asked stakeholders which new datasets they needed most. They voted overwhelmingly for a **vessel density map (VDM)**, a simple way to show vessel movement patterns. Typically VDMs are created based on Automatic Identification System (AIS) data but these data are not easily available! After a lengthy process, Human Activities are now happy to announce that they have sourced AIS data. However, this is just the beginning. [Follow their journey, the ups and the downs, to create your vessel density maps](#).

But there is much more that EMODnet Human Activities is doing to support users in 2018. Marine aggregate extraction data will support the new 2018 MSFD reporting phase. On 15th of July 2018 Member States (MS) have to have updated their marine strategies, new reports on articles 8 (initial assessment), 9 (determination of good environmental status) and 10 (establishment of targets) and notify them to the European Commission by 15 October 2018. For the initial assessment, MS have to provide an analysis of the predominant pressures and impacts, including human activity, on the environmental status of national marine waters along with an economic and social analysis of the use of marine waters, and of the costs of their degradation.

[The available geodatabase on EMODnet](#) that contains information on aggregate extraction sites in the Atlantic area, the Black Sea and the Mediterranean Sea countries is essential for analysing on the environmental status of seas and oceans as defined in the [Marine Strategy Framework Directive \(MSFD\)](#). Moreover, marine aggregate extractions as seabed removal, the creation of sediment plumes, and vessel activity during extraction can be relevant to several environmental descriptors of the MSFD as they can have an impact on several components of the ecosystem. In this regard and to fill MS's present and future needs of these data, the EMODnet Human Activities Team will focus on filling out gaps in the currently available datasets, developing new data products and improve the service to offer users what they need.

More information on marine aggregation data can be found via the [human activities blog](#).

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European Marine Observation and Data Network (EMODnet)

Missed Open Sea Lab - Watch the Film!

NEWS ARTICLE | 16 January 2018



Now you can experience the excitement, enthusiasm and creativity of EMODnet's first Open Sea Lab in our short film. Meet the teams and hear for yourself what they thought about this innovative three-day bootcamp and hackathon to create innovative solutions from marine open data.

For any 'r' enthusiasts out there, you can find the winning creation by [Team 5](#) in [EMODnet's GitHub](#) and their presentation [here](#). They developed an open-source tool to identify suitable sites to farm seaweed in Europe. This tool has potential for adaptation to other areas.

The OpenSeaLab 2017 took place in Antwerp from 15 to 18 November. 7 teams participated in the 3 day bootcamp. All winning teams receive e awards from [DataCamp](#), and the winning team have the the opportunity to further develop their concept at the [CoFoundry](#) incubator. Five student participants won the opportunity to further develop their ideas at Open Summer of Code .

For any of you attending European Maritime Day in Burgas this May, there will be an opportunity to hear more about the outcomes of Open Sea Lab and meet some of the organisers and team members there. Maybe even hear plans for OSL2019, stay tuned!

Find out more about all the OSL2017 concepts below and see all the photos in our gallery.

- **[Team CLP](#)** (Counter Logic Programming) developed a decision support system for near-future catch planning in the fisheries sector. Where to fish, what and when? [see presentation CLP's repo](#) 
- **[Team X](#)** presented a decision support tool for the offshore wind energy sector. 'Aggregator' displayed gridded cells to allow users to assess the suitability of a site for establishing wind turbines. [see presentation](#)
- **[Team iMarDIS](#)**, winners of 'Best Pitch', produced a tool for scuba divers to identify where to dive for wrecks. Users would be able to identify suitable wreck dive sites based on a range of parameters. [see presentation](#) 
- **[Team Marine Litter](#)** presented their plans to create a marine litter hotspot prediction tool. [see presentation](#)
- **[Team Deltares](#)** demonstrated their 'Environmental Impact Assessment Wizard' to make life easier for environmental project managers, by providing them with rapid access to relevant data at a relevant scale. [see presentation](#)
- **[Team Soledad](#)** presented their progress towards a tourism App to identify suitable beaches for tourism activities based on various parameters. [see presentation](#)

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European Marine Observation and Data Network (EMODnet)

Three EMODnet events to attend at Oceanology International !

NEWS ARTICLE | 1 March 2018

Photograph property of Oceanology International.

Oceanology International, one of the world's most important marine science and ocean technology exhibitions, offers a huge variety of **high-level conferences and workshops**. We are pleased to announce that EMODnet will take part in **three events** during this year's edition in ExCel London from 13 to 15 March 2018.

- **EMODnet Bathymetry Workshop “A Harmonised Digital Bathymetry for European Seas”**

13th of March 2018, 14:00 - 17:00, Gallery Room 2

[Programme and registration](#) 

EMODnet Bathymetry generates and publishes the EMODnet Digital Bathymetry for European Seas (EMODnet DTM). This is EMODnet's most successful product, being widely used by public bodies, scientists and industry. Recent progress includes a new release - with higher resolution, more data sets and extra functionalities for viewing and downloading. The Workshop will provide an overview and demonstrations of the current portal, highlight recent advances, and invite discussion on extra user requirements and possible data contributions. Join us to have your say.

- **EMODnet Secretariat Presentation “EMODnet Open Sea Lab: demonstrating the innovation power of Europe's wealth of marine open data”**

13th of march 2018, 14:30 - 14:55, showfloor Ocean ICT Theatre

Programme and registration

Last year we held the first EMODnet Open Sea Lab hackathon. It was an unprecedented success for EMODnet, generating new use case prototypes and bringing EMODnet's resources to the attention of diverse communities, as well as delivering important feedback on how we can improve to better meet user needs. Jan-Bart Calewaert, Head of the EMODnet Secretariat, will discuss how this initiative reinforced that wider access to open marine data can really stimulate innovation and help develop valuable applications and products to support sustainable blue growth.

- **EMODnet Secretariat & EMODnet Physics Presentation “Collecting, sharing and use of ocean data for businesses”**

14th of March 2018, 14:00 - 14:30, South Gallery Room 9

Programme and registration

This presentation takes place in the larger conference “Widening Access to Ocean Data” where participants will learn about innovative new uses of data which can improve safety and efficiency of marine operations and drive growth of the blue economy. We will introduce EMODnet to the audience and share the multiple opportunities and benefits it offers, especially to ocean businesses in terms of cost saving, reduction of risks and development of new products and services. EMODnet Physics will demonstrate their multiple products, webservices and databases available for use by an array of enterprises.

Join us at stand R200 to find out more and give us your feedback!

Throughout the event at stand R200, EMODnet representatives will bring together businesses, the research community and wider society to share use cases, highlight the benefits to become Associate Partners of EMODnet and services available for them. If you would like to arrange a meeting in advance please contact secretariat@emodnet.eu.

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European Marine Observation and Data Network (EMODnet)

EMODnet Chemistry litter data maps - First release!

NEWS ARTICLE | 26 March 2018

These initial maps were produced with data from more than 150 beaches, 5,500 seafloor trawling hauls and a few micro-plastics surveys.

The maps are the result of many months of hard preparatory work to gather, aggregate and harmonise marine litter data scattered over Europe. This could only be achieved through close collaboration with many data providers and experts from among others [OSPAR](#) , [HELCOM](#) , [EEA](#), DeFishGear , , [MEDITS](#) and with assistance from the [MSFD Technical Group on Marine Litter](#) and [JRC](#).

 **EMODnet** **EMODnet seafloor litter data**
MSFD region aggregated distribution of litter categories (2011-2017)*

*Different sampling devices were used in the two basins. GOV trawl gear type is the most diffused in the North East Atlantic Ocean

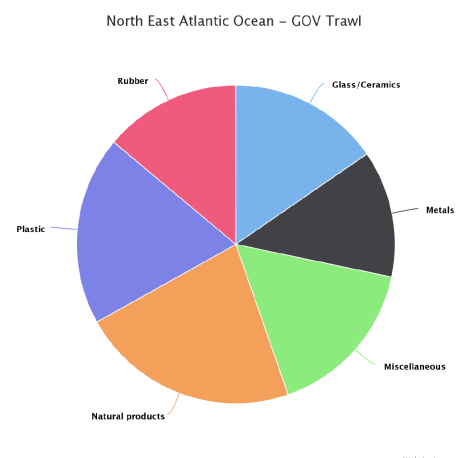
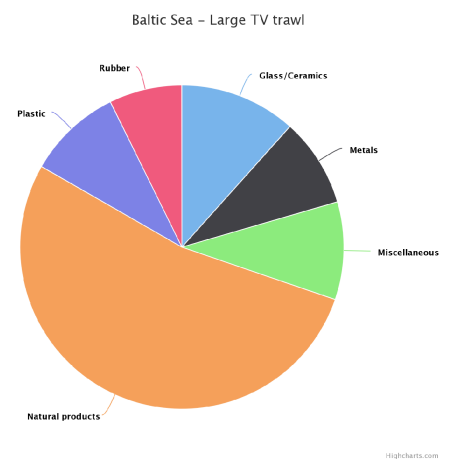
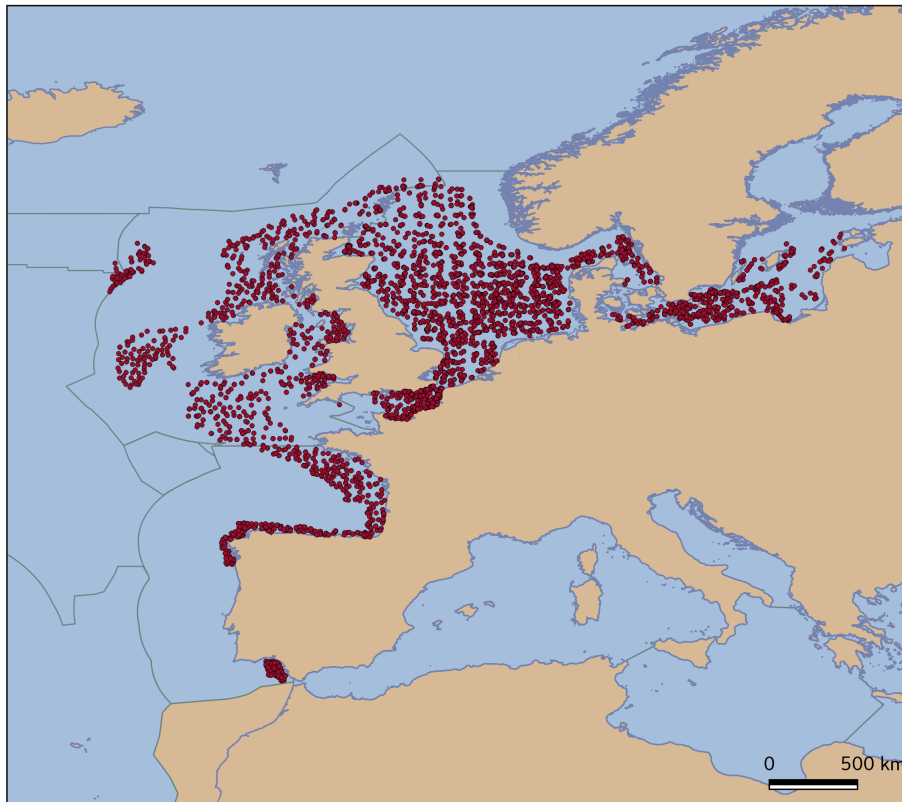
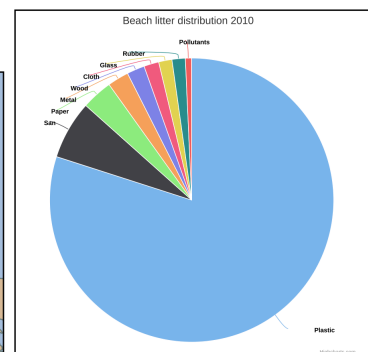
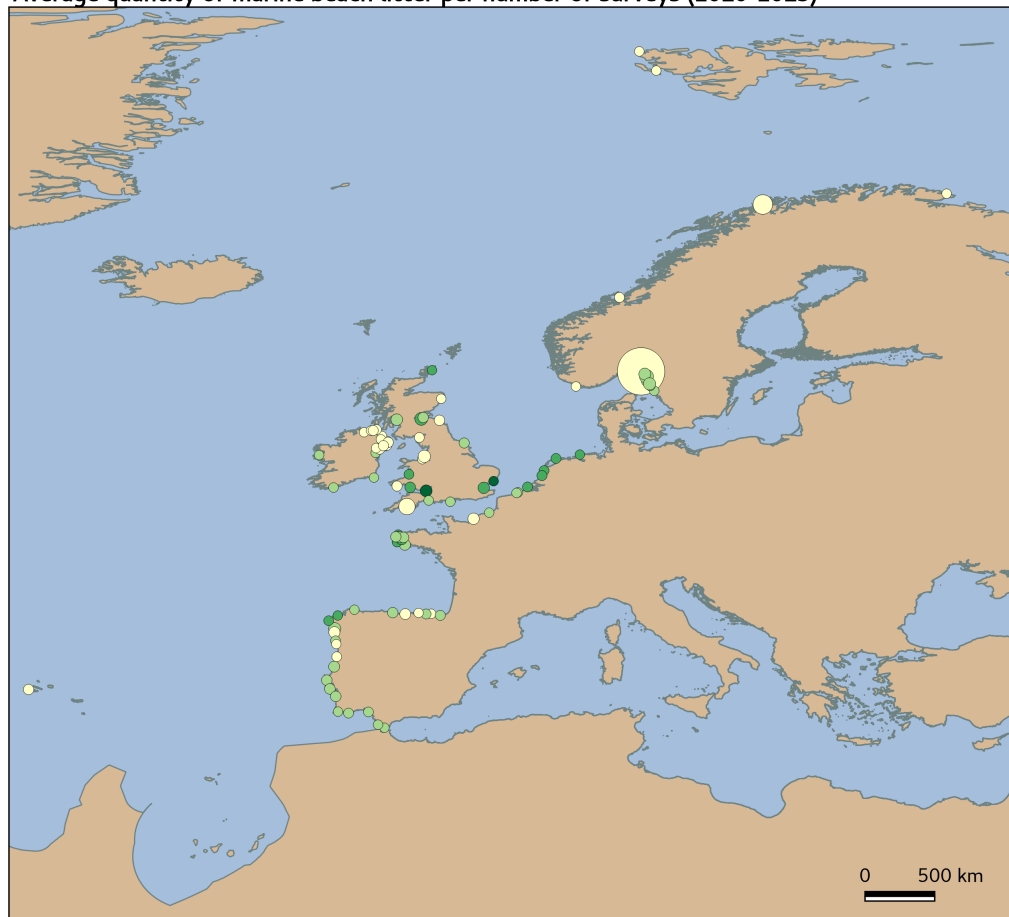


Figure 1. EMODnet seafloor litter categories. ©EMODnet

EMODnet beach litter data**Average quantity of marine beach litter per number of surveys (2010-2015)**

Litter categories (Ospar litter reference list): Plastic, Sanitary, Paper, Metal, Wood, Cloth, Glass, Rubber, Pollutants.

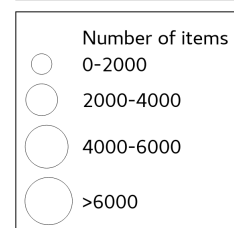
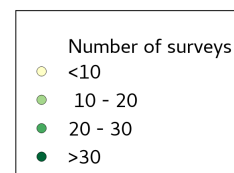


Figure 2. EMODnet Chemistry litter data map. ©EMODnet

More complete maps will be available soon, including beach litter data made available by Member States in the framework of [Marine Litter Baselines work undertaken by JRC](#). Stay tuned!

The first marine litter maps and additional information are available here: [\[Link to emodnet-chemistry.eu/newsevents/news/EMODnet_Chemistry_litter_data_maps_first_release\]](https://emodnet.eu/newsevents/news/EMODnet_Chemistry_litter_data_maps_first_release)

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European Marine Observation and Data Network (EMODnet)

Join us at the European Maritime Day in Burgas

NEWS ARTICLE | 18 May 2018

EMODnet will be exhibiting at the European Maritime Day from **31 May - 1 June 2018** in Burgas. Come and meet us to learn more about the new version of the [European Atlas of the Seas](#) that will be released in June 2018 and about what EMODnet has to offer for public and private institutions in terms of reliable and harmonised marine data, data products and services.



If you would like to arrange a meeting in advance, please contact secretariat@emodnet.eu.

Two events not to be missed at the European Maritime Day:

- **31 May 9:00 - 10:30:** EMODnet & Sea Traffic Management Workshop Digitalisation & Big Data for Maritime Applications..This workshop will demonstrate the power of cross-sector marine data initiatives such as Sea Traffic Management real-time information sharing and the EMODnet Open Sea Lab Hackathon.
- **31 May 10:30 - 11:15:** EMODnet Open Sea Lab Hackathon Best Product Winner: An R Package for Seaweeds Aquaculture: The Best Farming Site Locator .

Find out more

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European Marine Observation and Data Network (EMODnet)

AtlantOS newsletter focus on WP7's marine data management efforts

NEWS ARTICLE | 7 June 2018

AtlantOS is a four year, 20 million euro Horizon 2020 research and innovation project working towards the integration of ocean observing activities across all disciplines for the Atlantic, considering European as well as non-European partners. The recently published [third AtlantOS newsletter](#) [focusses](#) on how the project contributes to the enhancement and optimization of harmonization, and to the integration of Atlantic Ocean observing data. Several partners and coordinators of the European Marine Observation and Data Network (EMODnet) actively contribute to the AtlantOS work on “Data flow and data integration” (WP7).

The newsletter highlights the importance of modern data management infrastructures along the entire marine data/knowledge pipeline as a prerequisite to achieve interoperability. This is necessary to ensure that essential data are collected, retained and made accessible for analysis and application for users. Well-founded data management systems are also of vital importance for the Ocean Observing System in order to avoid delayed and duplicate data receipts, versioning issues, missing data and metadata, and non-documented data processing procedures.

Through its efforts in WP7, AtlantOS seeks to move towards an integrated data system that harmonizes work flows, data processing and distribution across the in-situ observing network systems from AtlantOS observing system work packages to existing European and international data infrastructures and portals termed Integrators (e.g. Copernicus in situ thematic assembly centre or INS TAC, SeaDataNet network of national oceanographic data centres or NODCs, EMODnet, ICES, EuroBIS, GEOSS).

An important driver within AtlantOS is to ensure that data from different and diverse in-situ observing networks are readily accessible and useable to the wider community, including international ocean science communities and other stakeholders in this field. AtlantOS marine data specialists have therefore been working with data networks and integrators in Europe to improve harmonization of Atlantic Ocean data and to facilitate improved interoperability. To this end, a continuous process has been developed starting with a minimum set of recommendations agreed on data interoperability, followed by the enhancement of network Data Systems and the upgrade of existing integrators to better serve networks and users, finalizing with the set-up of a data exchange backbone to ease discovery, viewing and downloading by users.

Building on existing infrastructures that will last after the end of the AtlantOS project, the project has moved forward on the implementation of the FAIR principles (Findable, Accessible, Interoperable, and Re-Usable) for Atlantic observations, through a ‘system of data management systems’ where all ocean observations are made available to users on a free and unrestricted basis, ensuring full and open exchange of data, metadata and products at minimum time delay.

AtlantOS WP7 has initiated discussions and collaborations on Atlantic Ocean Data Integration, which may continue long into the future. Furthermore, the same work package launched an Integrated Data portal with a [catalogue tool](#) [that](#) provides users with a discovery service of the

networks, integrators and products related to Atlantic Ocean observation data. The tool also facilitates access to services of the existing data systems. These systems are being enhanced to ingest and deliver more in-situ observation data on the Atlantic Ocean and to better serve users in a harmonized way across the systems.

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European Marine Observation and Data Network (EMODnet)

EMODnet targeted assessment

NEWS ARTICLE | 9 July 2018

We are looking for targeted feedback!

Do you feel the desire to help EMODnet improving? Be very welcome to take part in one of our in-depth surveys on the EMODnet portals.

Currently, we are looking for people who would like to assess the Central Portal, or one of the following data portals: Physics, Geology, Chemistry, Seabed Habitats or Human Activities. The targeted assessment consists of few exercises. It will take between 30 - 45 minutes to complete.

For more information, contact secretariat@emodnet.ec.europa.eu

Many thanks in advance in the name of all EMODnet data portals!

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European Marine Observation and Data Network (EMODnet)

2017 - A year in review!

NEWS ARTICLE | 13 August 2018

2017 was an exciting year for EMODnet, as the third phase of development (2017-2020) started in sixth gear! We are now proud to present our 2017 Annual Report which highlights the notable progress and evolution of EMODnet as well as our biggest achievements this year. Learn more about the development of the portals, the ways in which EMODnet data and data products are fundamental to users and the first Open Sea Lab hackathon!

[Read the EMODnet Annual report 2017](#)

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European Marine Observation and Data Network (EMODnet)

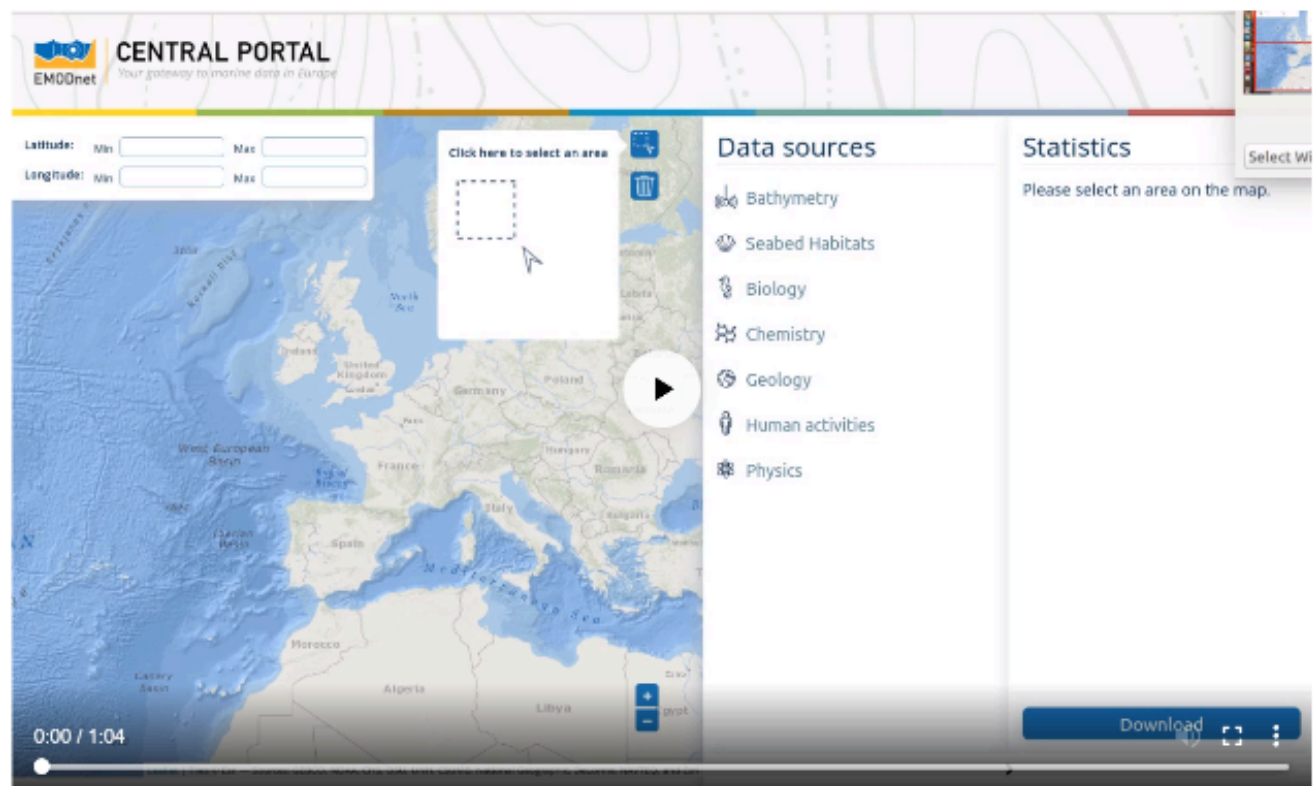
EMODnet Student team at the Open Summer of Code 2018

NEWS ARTICLE | 5 September 2018

In July 2018, 72 talented students have been working on 17 impactful open source projects at the Open Summer of Code 2018. The EMODnet Student team, coached by VLIZ and composed of Catherine Lesuisse, Ismail Abdoulahi, Marie Mwinkeu and Eva Baete, were challenged to build a **useful application from the vast array of open marine data available in EMODnet.**

Their web application, named Open Sea Lab, enables scientists, government actors, businesses and students to explore marine data via a clear map interface. Users can visualise all the data on one map which makes it easier to compare and analyse the data.

[Find out more about their application](#) 



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Energy, Climate change, Environment

European Marine Observation and Data Network (EMODnet)

Potential disruption of EMODnet Seabed Habitats website - 18th September

NEWS ARTICLE | 17 September 2018

The EMODnet Seabed Habitats Portal is working to improve the security of the EMODnet Seabed Habitats website.

Users won't be able to access the portal on 18th September between 11-13am (CET).

The EMODnet team appreciates your understanding and thanks you for your patience.

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European Marine Observation and Data Network (EMODnet)

New EMODnet Bathymetry Data Product - High resolution Digital Terrain Model for the European Seas

NEWS ARTICLE | 24 September 2018

An upgraded version of the EMODnet Bathymetry Digital Terrain Model (DTM) for the European Seas has just been released. This bathymetry product now offers higher resolution, powerful 3D visualisation functionality and extended coverage of Europe's seas. It is available free of charge for viewing and downloading, and sharing by OGC web services from the [EMODnet Bathymetry portal](#) .

The EMODnet DTM is a tool used for a whole range of applications in marine science, sustainable ocean governance, and blue economy activities such as planning of pipeline trajectories, locations of offshore wind farms or planning of harbour extensions. In science, the DTM supports oceanographers in providing a base geometry for hydrodynamic models, marine geologists for studying morphological processes, and biologists in contributing to the generation of seabed habitat maps. An improved DTM also contributes to reducing risks for damage to coastal and offshore installations and public safety by improving our ability to forecast storm surges, for example.

“We are proud of this new release which will help users to visualise bathymetric features with greater details. It will drastically improve their work, which relies on accessible and high quality bathymetric data”, declared Thierry Schmitt from Shom (Service hydrographique et océanographique de la marine), the French Naval Hydrographic and Oceanographic Service, Coordinator of EMODnet Bathymetry.

The advanced EMODnet DTM offers many benefits to users:

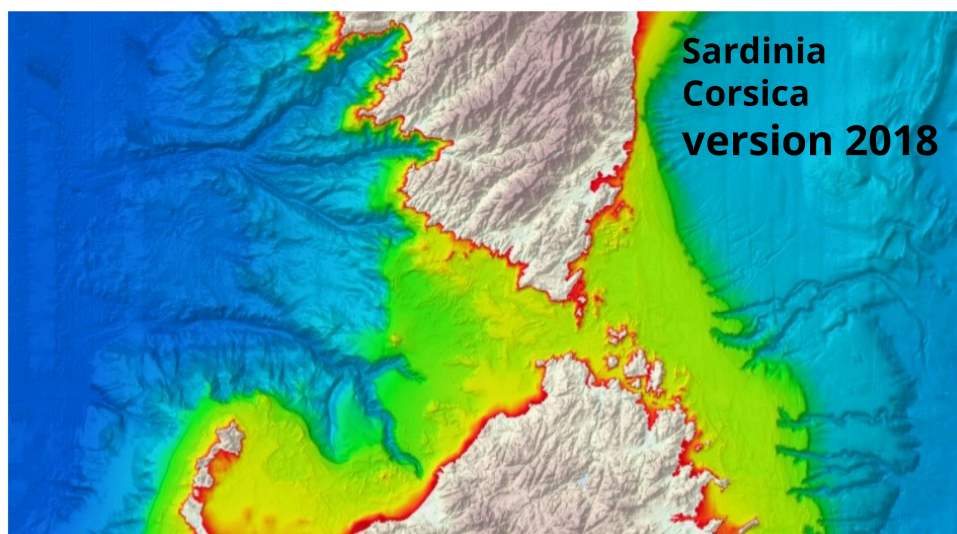
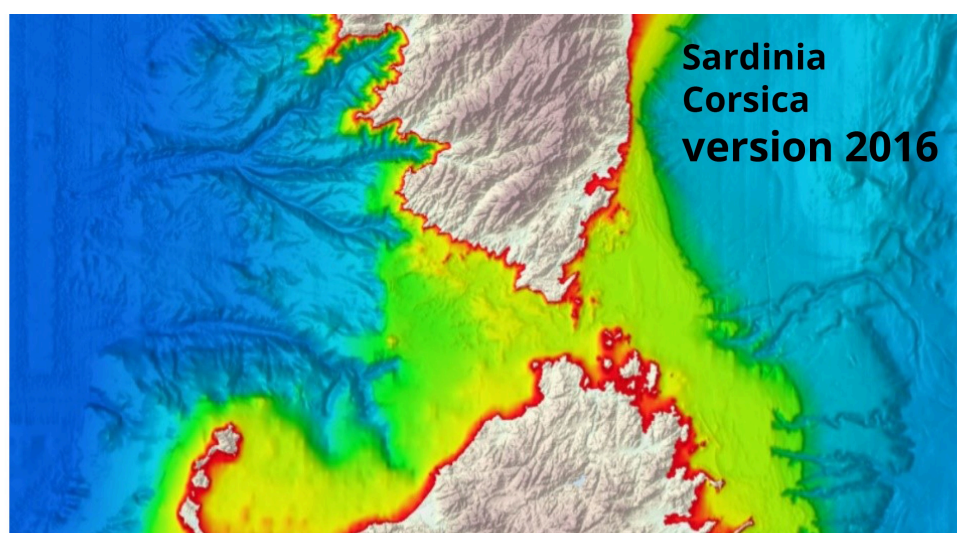
- A resolution increased from $1/8 * 1/8$ arc minutes to $1/16 * 1/16$ arc minutes (circa $115 * 115$ meters). Altogether the EMODnet DTM contains $113892 * 108132 =$ circa 12.3 billion data points;
- A powerful 3D visualisation functionality of the bathymetry that can be used in the browser without the requirement of plugins;
- A faster representation of the complexity of the map;
- An expanded coverage including all European seas as well as the European part of the Arctic Ocean and Barents Sea;
- An increased number of bathymetric survey data sets and composite DTMs from 48 data providers used as data sources from circa 7.200 to circa 9.400 for which metadata can be retrieved through a source reference layer;
- The number of bathymetric survey data sets and composite DTMs, used as data sources, has increased from about 7.200 to about 9.400. These come from 48 data providers. All related metadata can be retrieved through a source reference layer;
- The inclusion of Satellite Derived Bathymetry data products, in particular for coastal stretches of Spain and Greece.

About EMODnet Digital Bathymetry

First launched in 2010, the EMODnet Digital Bathymetry (DTM) has now become a reference for government, science and industry, being by far the most popular EMODnet product. Regularly visited by over 10.000 persons per month with over 3.000 downloads per month, it provides the most detailed publicly available gridded bathymetry model for all European marine waters.

The EMODnet DTM allows users to activate and view bathymetry layers as well as contours and underwater features for the selected areas. Among other functionalities, it is possible to zoom in/out, to switch on/off several layers, as well as to browse data and look up metadata about the underlying data source. Users can draw transects and retrieve the associated bathymetric profiles.

With the ambition to refine further the quality and the accuracy of the DTM, considering both European offshore waters and coastal zones, EMODnet invites potential high-resolution bathymetric data providers to help generate an even better DTM product. Visit our [EMODnet Data Ingestion portal](#) to learn more!



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More illustrations can be downloaded from:

<http://www.emodnet-bathymetry.eu/emodnet-bathymetry-images.zip>

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European Marine Observation and Data Network (EMODnet)

EMODnet for business: Find out how EMODnet supports industry and vice versa

NEWS ARTICLE | 19 October 2018

EMODnet for business: Find out how EMODnet supports industry and vice versa

The European Marine Observation and Data Network (EMODnet) launches the **EMODnet for business** campaign, a full month dedicated to the importance of open marine data and how it supports blue growth and industry.


The economic activities related to oceans, seas and coastal areas, the so-called blue economy, have generated a turnover of € 566 billion and creates jobs for nearly 3.5 million people according to the [2018 EU Blue Economy report](#) prepared by the Directorate-General for Maritime Affairs and Fisheries (European Commission).

Unlocking the wealth of open marine data resources, EMODnet is central to the EU's efforts to support sustainable blue growth. Through its seven thematic portals (bathymetry, geology, physics, chemistry, biology, seabed habitats and human activities), EMODnet creates new opportunities for innovation, increases your ability to take sound business decisions based on high quality information and improves your ability to forecast the behaviour of the sea, thereby reducing risks of offshore and coastal operations and investments.

With the combined effort of its 150 partners, EMODnet concretely helps offshore and coastal businesses to reduce their costs and provides opportunities for SME's and consultancies to increase their range of products and services by providing easy access to existing marine data and by generating better information to plan and implement business activities.

From mid-October to mid-November 2018, EMODnet will raise awareness on the importance of open marine data to spur innovation. With its **EMODnet for business** campaign, EMODnet is also offering a unique opportunity to increase your visibility and showcase your blue leadership.

Join the campaign and take an active part in the blue growth!

- Explore EMODnet's wealth of marine data: emodnet.ec.europa.eu/portals
- Follow us on Twitter and take part in the conversation: [@EMODnet / #EMODnetForBusiness](https://twitter.com/EMODnet)
- Share data into EMODnet: <https://www.emodnet-ingestion.eu/> 
- Become an associated partner: <https://emodnet.ec.europa.eu/emodnet-associated-partners>
- Share an EMODnet use case: <https://emodnet.ec.europa.eu/submit-your-emodnet-use-case>
- A question ? Contact secretariat@emodnet.eu

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European Marine Observation and Data Network (EMODnet)

Launch of the EMODnet Atlas of European Marine Life!

NEWS ARTICLE | 19 December 2018

EMODnet Biology is proud to unveil a new and innovative showcase of exemplar marine biological data products!

Launched on 19 December 2019, the [European Atlas of Marine Life](#) presents a range of data products including tools, models and maps, illustrating the diverse range of outputs that can be generated from EMODnet Biology hosted data.

Since the preparatory phase in 2009, the 22 partners of EMODnet Biology have collaborated to create an unparalleled repository of biological data, underpinned by the EurOBIS data infrastructure, allowing open-access for a wide-range of stakeholders across Europe.

The available data and products are structured around the biological Essential Ocean Variables (EOVs) facilitating global interoperability and contributing to the aims of UN Sustainable Development Goal 14, the relevant Aichi Biodiversity Targets of the Convention on Biological Diversity and the activities focused around the UN Decade of Ocean Science (2021-2030).

Hosted on the EMODnet Biology website (<http://www.emodnet-biology.eu/about-atlas>) the products are the result of two years of focussed activity within Phase 3 of EMODnet Biology. Through an iterative process of end-user engagement and focussed technical workshops the initial 14 data products (<http://www.emodnet-biology.eu/toolbox/en/gallery/>) represent a wide-range of demand-led data products, that help to answer fundamental and policy-driven questions related to managing the natural and anthropogenic impacts in European waters.

Immediately available on the release of the Atlas will be a number of products, including [abundance maps and trends for Atlantic Copepods](#), [fish](#), [birds, mammals](#), [zooplankton](#) and [phytoplankton species](#), [traits-based maps of macrobenthic and fish functional groups](#), an analysis of [thermal niches occupied by marine species groups](#), and [maps showing the occurrence of marine invasive species in European waters](#), along with many more. This gallery of products will continue to be added to, as new and novel analyses take place by EMODnet Biology partners and the wider community.

EMODnet Biology is committed to supporting the FAIR principles (Findable - Accessible - Interoperable - Reusable) through the data and resulting products. As such all data is open and code and methodologies used in the creation of the data products are hosted in the EMODnet shared software repository (<https://github.com/EMODnet>), from this site the data product's code can be accessed and shared with the community, ensuring transparency in the creation process and increasing trust in the resulting products.

The volume of data and range of products accessible through the Atlas of European Marine Life will continue to grow. The next two years will see a continuation of the EMODnet Biology project, and further engagement with key stakeholders in the 'triple helix' of academia, industry and the policy

sectors. This ongoing, collaborative approach will ensure the relevance of key products to address societal challenges and support sustainable blue growth both within Europe and globally.

This deliverable was being made possible through close collaboration between EMODnet Biology and Lifewatch Marine, Marinespecies.org, Marineregions.org and EurOBIS.

Dan Lear, Peter Herman, Simon Claus and the whole EMODnet Biology project Consortium
bio@emodnet.eu

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