

YOUR DATA WORK IT

EMODnet Chemistry
65 Data Centers
1 000 000 data sets



EMODnet
European Marine Observation and Data Network

CHEMISTRY
A value for marine strategies

Check out the movie

More than ever before, European marine data work together. Embrace the opportunity to contribute to Blue Society. **Set your data free** for others to work with and you will get a strong net in return. Wake them up at **EMODNET-INGESTION.EU**

CHEMISTRY SUCCESS STORIES
with **EMODnet INGESTION**

UK
BODC

Marine Scotland Science, provides numerous datasets on seawater quality, including on eutrophication and on contaminants, collected from up to 10 cruises per year. Some are time series important for *EMODnet Physics*.

BE
RBINS

Fourteen years of CTD, turbidity and chlorophyll data were shared by the **Belgian Navy** and published to *EMODnet Chemistry and Physics*. These data were collected by autonomous underwater vehicles during 880 missions across Europe for port protection and mine hunting operations.

DK
AU-BIOS

A win-win collaboration with the **Centre for Environment and Energy** allowed the publication of the 2015 survey on microplastic-like particles in sediments from Danish waters to *EMODnet Chemistry*. The data are now fit for reporting to **MSDF descriptor 10**.

GE
TSU

Communication tools translated into Georgian were used by TSU to establish permanent collaboration with data providers in Georgia. Since 2017, the **Poti Laboratory Research Centre** has been sharing long-term monitoring data with *EMODnet Chemistry*.

IT
OGS

The marine litter data collected by **four NGO's** and **five European monitoring & research centres** are reported and accessible via the *Chemistry Portal*. The data were collected around the Baltic Sea, the Mediterranean Sea and the Black Sea between 2013-2020.

RO
NIMRD

In eight years, the **Mare Nostrum NGO** has become the most important provider of marine litter data in the Black Sea. The data covers the entire Romanian coastline. It is shared with *EMODnet Chemistry* and thus contributes to the European Marine Litter Data Base.



Check out the movie



Marine Scotland Science

provides numerous datasets on seawater quality to *EMODnet Chemistry*, including on eutrophication and on contaminants, collected from up to 10 cruises per year. Some are time series important for *EMODnet Physics*.

Case 1. A champion in the provision of numerous datasets

UK
BODC

Marine Scotland Science (MSS), the scientific division of Marine Scotland, plays an integral part in supporting the Scottish Government's vision of marine and coastal environments that are clean, healthy, safe, productive, biologically diverse and are managed to meet the long-term needs of both nature and people.



In the context of EMODnet Ingestion, the British Oceanographic Data Centre (BODC) has been able to re-establish contact with MSS organisation which had been a regular data supplier in the past, but where contact had been lost through staff changes and lack of funding. The data are CTD casts, measuring temperature, salinity, dissolved oxygen, fluorescence and turbidity.

The BODC was able to catch up on a backlog of data. This covers about 10 cruises per year over the last 4 years. For 2016-17, it has delivered to Phase II 1038 CTD casts (21 cruises) with a similar amount to follow for the period 2018-19. The data are available from SeaDataNet and *EMODnet Chemistry*. Some of the data are time series, which is important for analysis in the context of *EMODnet Physics*.

The BODC is proud of this achievement thanks to EMODnet Ingestion because it has helped mobilise a substantial amount of data from Marine Scotland Science. **Now that contact has been re-established, data have flowed smoothly and will hopefully lead to regular submissions in the future.**



Check out the movie



Fourteen years of CTD, turbidity and chlorophyll data were shared by the **Belgian Navy** and published to *EMODnet Chemistry and Physics*. These data were collected by autonomous underwater vehicles during 880 missions across Europe for port protection and mine hunting operations.

Case 4. Fourteen years of archived data shared and saved forever

BE RBINS

Since 2006, the Belgian Navy operates 5 Hydroid REMUS 100 Autonomous underwater vehicles (AUVs). Four more were acquired in 2012 and 2016. Till 2019, 880 missions have been undertaken in Europe for port protection and mine hunting operations, for which side scan sonar images are used.

From the first contact of the data ambassador with the Research Centre of the Belgian Navy, it was quite willing to share some of the data gathered by the AUVs. The data that matters to the Belgian Navy, the side-scan sonar images, have not been shared and remain classified. The Navy data manager did a lot of work in extracting the data from the files. This process actually improved the data accountability of the data owner: reorganising and renaming the proprietary files from the AUVs, and extracting the data in a human readable format (txt) also serves their own interest in the long term.

Collaboration with RBINS in this processes raised the point of data quality and recalibration after maintenance of some AUVs. Further follow-up with the manufacturer of the AUVs is foreseen to get an idea of the sensor models included in the AUVs and of calibration curves. The data were published 'as is' to *EMODnet Chemistry* and *EMODnet Physics*. **This experience opens perspectives for other national navies to join the EMODnet family !**





Check out the movie



A win-win collaboration with the **Danish Centre for Environment and Energy** allowed the publication of the 2015 survey on microplastic-like particles in sediments from Danish waters to *EMODnet Chemistry*. The data are now fit for reporting to MSDF descriptor 10.

Case 6. Microplastic-like particles in sediments fit for reporting

DK
AU-BIOS

The Danish Ministry of Environment and Energy initiated the national monitoring programme using the environmental indicator “microplastic” so that it can be used for the national implementation of EU’s Marine Strategy Framework Directive (MSFD) in relation to Descriptor 10 for assessments of characteristics, state, impact and trends of litter in the marine environment.

The data provider, the Danish Centre For Environment and Energy (DCE), is Aarhus University’s central unit for knowledge exchange within the areas of nature, environment, climate and energy. Under the scientific assessment Report No. 178, the DCE describes the results of the national monitoring programme on microplastic contents and composition in sediments collected in the inner Danish waters in 2015.

The Ingestion team supported the data provider all the way during the process including data and metadata submission and the organisation of data in a relational structure. The main challenges were to convince the data provider to allocate the necessary time for the data preparation and submission, and to database the dataset according to the EMODnet guidelines. **The efforts for the data publication were largely outweighed by the fact that the DCE can use EMODnet Ingestion structures and services:** (i) as a repository for stocking data and metadata, (ii) as an add-on to the national monitoring programme on microplastic, (iii) for organising and presenting the data in a relational, databased format, (iv) for generating data products on a European scale, and publishing the data and data products for Marine litter to *EMODnet Chemistry*.



Map of 11 sediment sampling stations in Danish waters in 2015.



Check out the movie



Communication tools in the national language and a tailored relationship have been the key to ongoing collaboration with data providers. Since 2017, the **Poti Laboratory Research Centre Ltd.** has been sharing long-term monitoring data with *EMODnet Chemistry*.

Case 7. Stages of a long-term collaboration with a data provider in Georgia

GE
TSU

The Laboratory Research Centre Ltd. is in charge of the long term monitoring of the chemical parameters of the sea water within the City of Poti seashore area in Georgia. Together with the bacteriological lab, the chemical lab carries out analysis of drinking, surface and waste waters.



As EMODnet Data Ingestion ambassador, the Tbilisi State University (TSU) established the first contact with the Laboratory Research Centre in Autumn 2017. The actual submission of chemical data to EMODnet started the same year and is still ongoing. **The success of this permanent collaboration is due to a tailor-made procedure supported by the use of the Georgian language throughout the contacts** with the data provider, and also to the continuous support of MARIS and HCMR to the TSU. The use of the local language with the data provider helped a lot in understanding the rather technical processes and facilitated the training in publishing their own data.

In the preparatory phase, a questionnaire was sent to reveal a comprehensive list of marine-oriented institutions in the Black Sea, and to establish their capacities to obtain and process marine data. The value of data sharing was then explained to data holders; they were informed of the requirements of the EMODnet project and offer to participate as data providers. Specific roles were distributed among the TSU staff to carry out the ingestion tasks. One person was designated to work with potential data holders on site, another was designated to serve as data centre contact person. The TSU programmer was involved in the work of processing the datasets during Phase II. All the TSU team members followed the procedure for testing the submission service.



The marine litter data collected by **four NGO's** and **five European monitoring and research centres** are now fit for reporting and accessible via the *Chemistry Portal*. The data were collected around the Baltic Sea, the Black Sea and the Mediterranean Sea between 2013-2020.



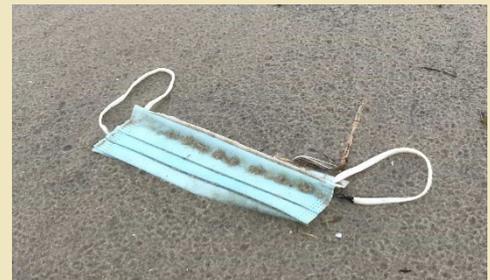
Check out the movie



Case 11. Marine litter data fit for reporting to EU marine strategies

IT OGS

Since October 2019, EMODnet Chemistry has been collecting, harmonizing and validating marine litter data. Five European monitoring and research centres, and four NGO's submitted their datasets through the *EMODnet Ingestion Portal*. Once elaborated, the data are included in the database maintained by the National Oceanographic Data Centre (NODC) at the National Institute of Oceanography and Applied Geophysics (OGS).



Picture: [Joint List of Litter Categories](#) for marine macro-litter Monitoring

Time range of the different datasets stretches from one to five years and covers the period 2013-2020. The datasets come from 8 countries bordering the Baltic Sea, the Black Sea and the Mediterranean Sea: Estonia (TalTech), Latvia (LHEI), Bulgaria (BGODC), Romania (Mare Nostrum), Slovenia (NIB), Croatia (IZOR), Turkey (TUDAV) and Cyprus (ORION). Marine litter composition and abundance were defined in sediments, mostly coastal deposits, well known as beach litter, by means of visual census methodologies. A Croatian dataset comes from seafloor samples collected by trawling.

The main challenge achieved via the work of EMODnet Chemistry in collaboration with the EC Joint Research Centre and the MSFD Technical Group on Marine Litter was to develop agreed European standard formats, based on existing best practices set out by consolidated communities.

Standardization enables to compare marine litter data collected with many different methodologies by numbers of data sources. EMODnet Chemistry works in strict cooperation with the NODCs and the Member States to produce validated data collections on a European scale.

Besides MSFD monitoring data, EMODnet Chemistry also manages, stores and gives access to marine litter data from both research surveys and monitoring or cleaning initiatives of citizen science.



In eight years, the **Mare Nostrum NGO** has become the most important provider of marine litter data in the Black Sea. The data covers the entire Romanian coastline. It is shared with *EMODnet Chemistry* and thus contributes to the European Marine Litter Data Base.



Check out the movie



Case 12. An NGO makes important contributions to the EU ML database

Ro
NIMRD

The Mare Nostrum NGO is a non-profit, apolitical, independent environmental association from Constanta, Romania, founded in 1993 at the initiative of several young specialists, from various fields related to marine research and environmental protection. In a spirit of partnership, Mare Nostrum works to raise public awareness, educate about ecology and create pressure on decision-makers for effective environmental protection of the Black Sea and the Romanian coastal zone.



Collection of litter along the Romanian littoral.

Reducing the amount of **marine litter** is one of the strategic objectives of Mare Nostrum. Its most important project in this field is the marine litter monitoring programme, a permanent and continuous programme that keeps track of the amount of litter recorded on Romanian beaches. The association's experience in this respect speaks for itself: the first monitoring of beach litter was organised in 1999 and since 2014 the monitoring has been carried out according to the European methodological standards. Thanks to the data collected as a partner in several European projects, the NGO Mare Nostrum has gathered an impressive volume of data on beach litter.

The Mare Nostrum NGO was keen to share its beach litter data with *EMODnet Chemistry* and thus to **contribute to the European Marine Litter Data Base**. As EMODnet Data Ingestion ambassador, the National Institute for Marine Research and Development "Grigore Antipa" (NIMRD) provided full support throughout the data submission using *EMODnet Ingestion* services or directly using EMODnet Chemistry services. With more than 130 data sets on beach, seabed and floating litter along the entire Romanian Black Sea coastline over a period of eight years, Mare Nostrum has become one of the most important providers of marine litter data in the Black Sea and a future Associate Partner of EMODnet.

YOUR DATA WORK IT

12+ Ingestion stories
180+ data providers
1200+ data sets



Check out the movie



The **EMODnet Data Ingestion portal** is developed to facilitate and streamline the process where (sleeping) marine data from whatever source is delivered on a voluntary basis for safekeeping and further distribution. **EMODnet keeps your data future proof.**

JOIN OUR SUCCESS STORIES



In 5 years, EMODnet Data Ingestion has received 1248 submissions. The number of processed and published data submissions is now over 1120. Of them, over 510 data submissions are fully elaborated; this implies uptake in national and European marine data infrastructures and feeding into EMODnet.

The 182 data providers come from 28 countries and a **diversity of fields of activity**: research institutes, universities, governmental departments, NGO's, and companies from different horizons (fishermen, dredging companies, oil and gas industry, engineering companies, consultancies, wind energy sector). Take part in our success story.

**Join the EMODNET community,
Work your data at
EMODNET-INGESTION.EU**

