



EMODnet

European Marine
Observation and
Data Network

Chemistry



Key updates and forward look

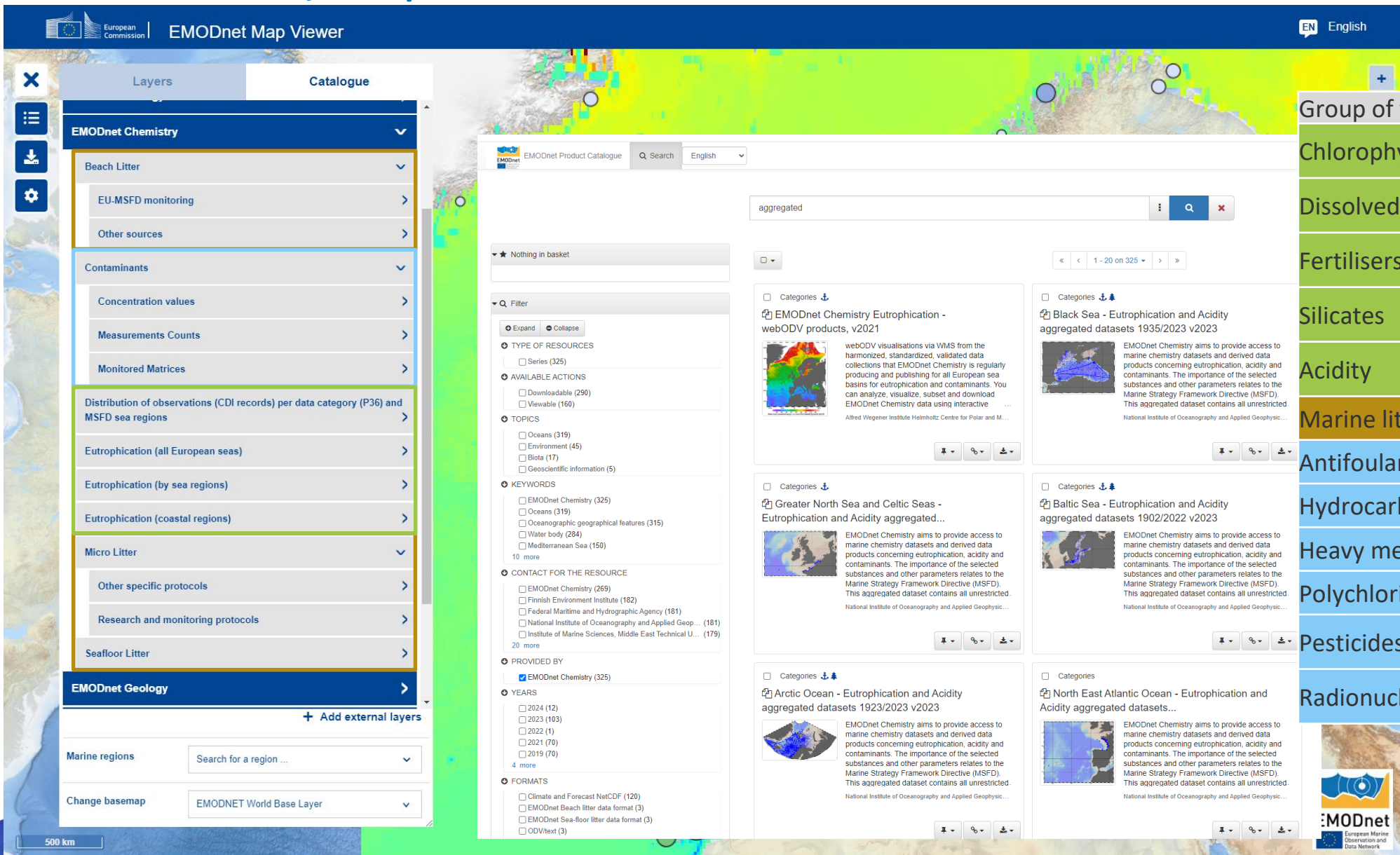
EMODnet Chemistry

Alessandra Giorgetti, OGS

20th EMODnet Steering Committee meeting
29-30 April 2024

EMODnet Chemistry current offer

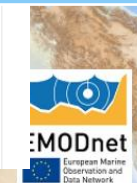
Overview of Data/Data products



The screenshot shows the EMODnet Map Viewer interface. At the top, there is a navigation bar with the European Commission logo, the text 'EMODnet Map Viewer', and a language selector set to 'EN English'. Below this is a sidebar with a 'Layers' tab and a 'Catalogue' tab. The 'Catalogue' tab is active, showing a tree view of data categories. The 'EMODnet Chemistry' category is expanded, showing sub-categories like 'Beach Litter', 'EU-MSFD monitoring', 'Other sources', 'Contaminants', 'Micro Litter', and 'Seafloor Litter'. The 'Contaminants' category is further expanded to show 'Concentration values', 'Measurements Counts', and 'Monitored Matrices'. The 'Micro Litter' category is also expanded to show 'Other specific protocols' and 'Research and monitoring protocols'. Below the 'Catalogue' sidebar, there are search and filter options, including a search bar with the text 'aggregated', a filter section with 'Nothing in basket', and a 'Filter' section with various criteria like 'TYPE OF RESOURCES', 'AVAILABLE ACTIONS', 'TOPICS', 'KEYWORDS', 'CONTACT FOR THE RESOURCE', 'PROVIDED BY', 'YEARS', and 'FORMATS'. The main area of the interface displays a grid of product cards, each with a thumbnail map, a title, and a brief description. The cards include 'EMODnet Chemistry Eutrophication - webODV products, v2021', 'Black Sea - Eutrophication and Acidity aggregated datasets 1935/2023 v2023', 'Greater North Sea and Celtic Seas - Eutrophication and Acidity aggregated...', 'Baltic Sea - Eutrophication and Acidity aggregated datasets 1902/2022 v2023', 'Arctic Ocean - Eutrophication and Acidity aggregated datasets 1923/2023 v2023', and 'North East Atlantic Ocean - Eutrophication and Acidity aggregated datasets...'. A scale bar at the bottom left indicates 500 km.

• Total: 580 products

Group of variables	Nb. products
Chlorophyll	86
Dissolved gases	96
Fertilisers	145
Silicates	90
Acidity	37
Marine litter	80
Antifoulants	39
Hydrocarbons	65
Heavy metals	55
Polychlorinated biphenyls	28
Pesticides and biocides	47
Radionuclides	22

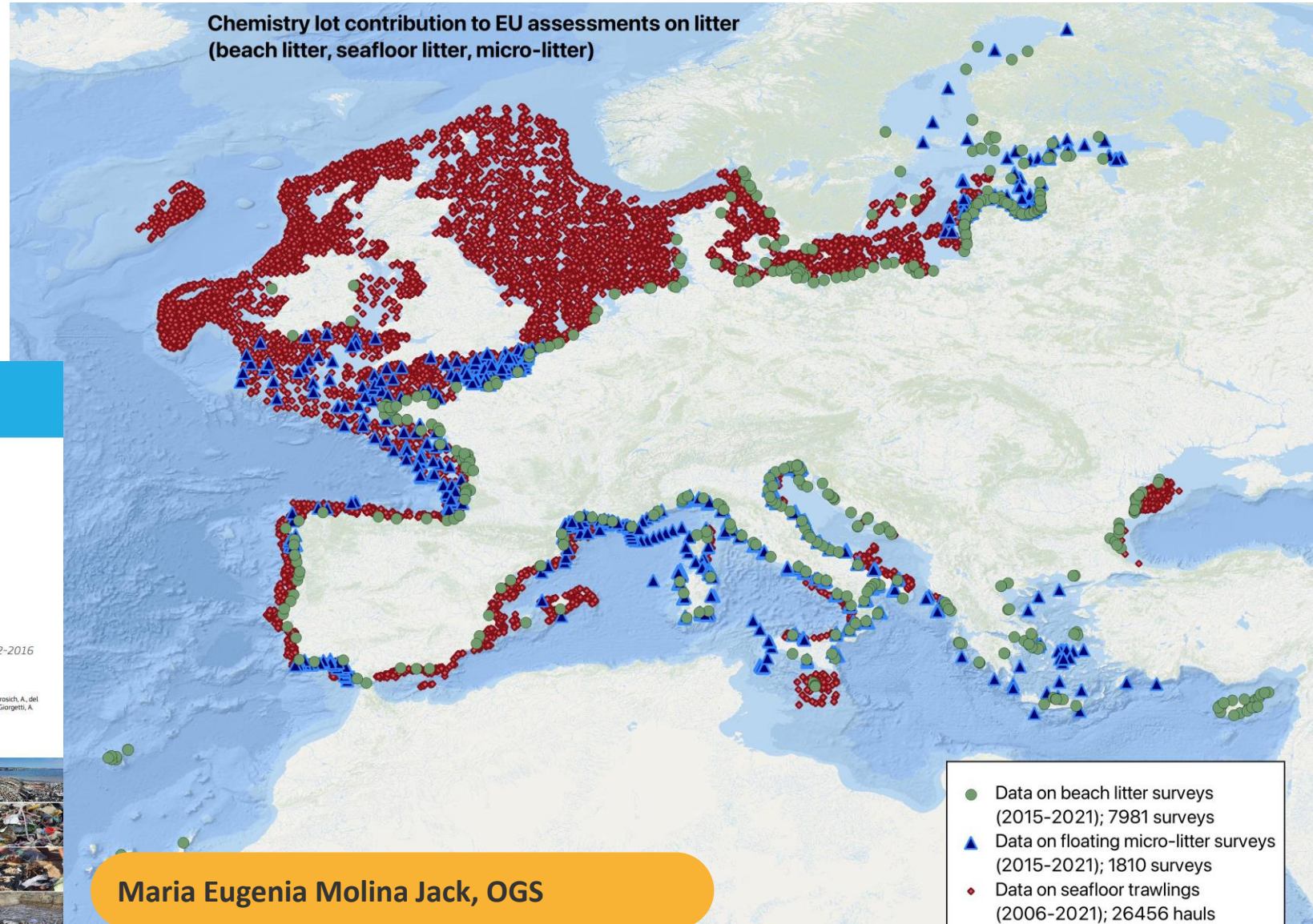


EMODnet Chemistry current offer

Data/Data products for EU Policy



- EMODnet acts as the **Data Portal** for data collection and management under the MSFD
- Beach litter 2012-2016 data **used** for EU Baselines and Threshold values

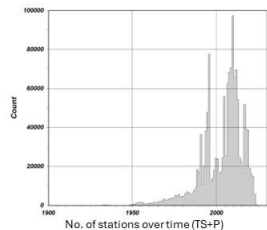
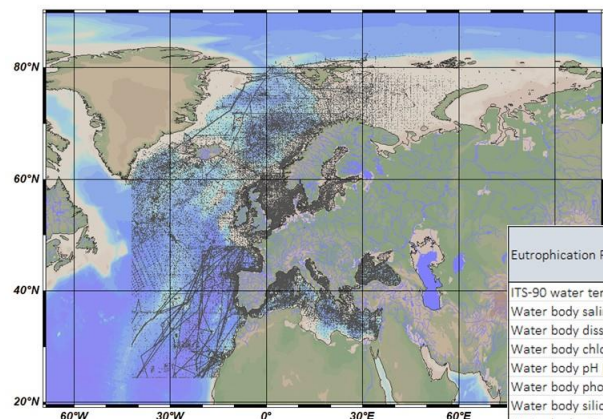


EMODnet Chemistry current offer

Data/Data products for EU Policy

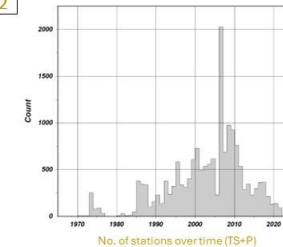
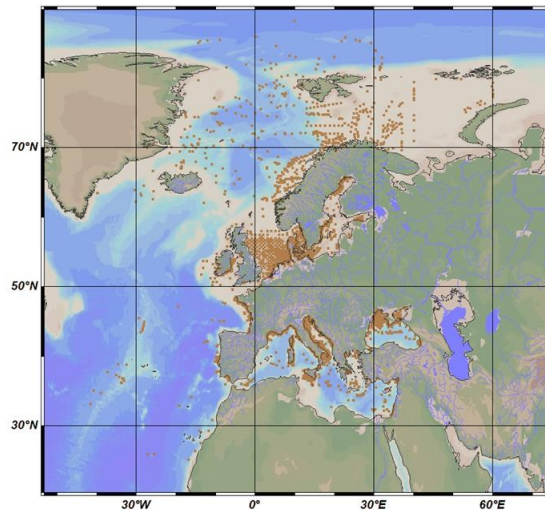
- For the next MSFD reporting on D5 (Eutrophication), D8 (Contaminants) and D9 (Contaminants in seafood), the latest aggregated, standardised, and validated data collections on eutrophication and chemical pollution were made available to the JRC for the first time.

Eutrophication : Profiles + Timeseries
 No. of stations 1374080
 Temporal coverage 1902–2023



Eutrophication P35 (examples)		Data count QFs1+2+6+Q (all sea basins TS+P, all QFs for time and QFs 0-1-2 for depth)
ITS-90 water temperature [degrees C]		45816968
Water body salinity [per mille]		44579666
Water body dissolved oxygen concentration [umol/l]		35770318
Water body chlorophyll-a [mg/m^3]		17080591
Water body pH [pH units]		2445922
Water body phosphate [umol/l]		2305596
Water body silicate [umol/l]		1796217
Water body nitrate [umol/l]		1440786
Water body nitrite [umol/l]		1282351
Water body ammonium [umol/l]		1009124

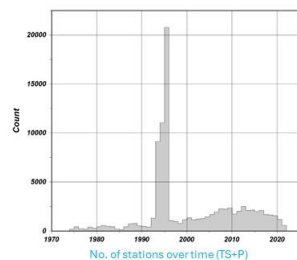
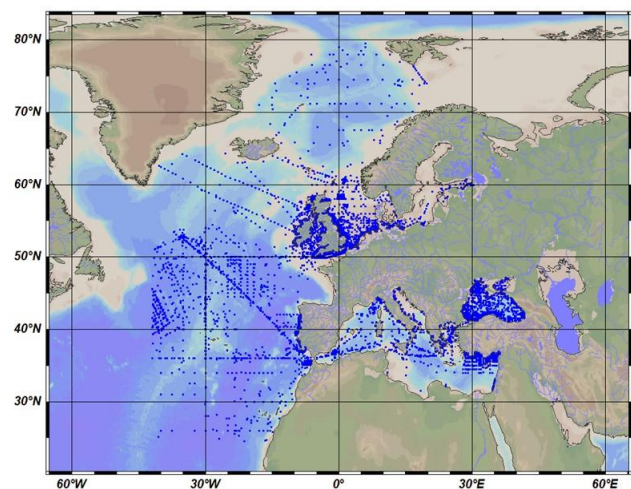
Contaminants in sediment : Profile + Timeseries
 No. of stations 16929
 Temporal coverage 1966–2022



Contaminants in sediment P36		Data count QFs1+2+6+Q (all sea basins TS+P)
Metals and metalloids		202578
Hydrocarbons		168005
Polychlorinated biphenyls		43914
Pesticides and biocides		24660
NULL		18875
Radionuclides		8415
Organic matter		5740
Antifoulants		5643
Pharmaceuticals		114
Total		477944

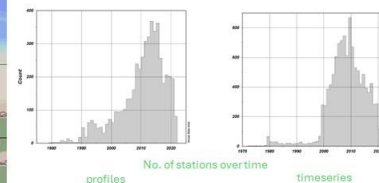
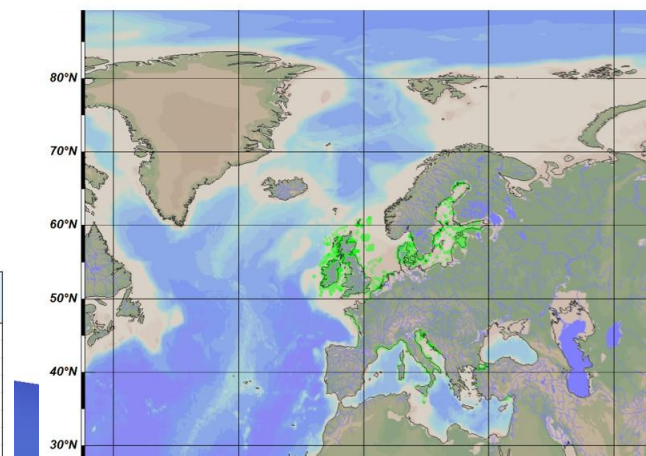
- EMODnet chemistry data contributed to EEA indicators

Contaminants in seawater : Profiles + Timeseries
 No. of stations 91571
 Temporal coverage 1970–2021



Contaminants in seawater P36		Data count QFs1+2+6+Q (all sea basins TS+P)
Metals and metalloids		154809
Hydrocarbons		117745
Pesticides and biocides		103597
NULL		34692
Organic matter		27008
Polychlorinated biphenyls		10183
Antifoulants		5896
Radionuclides		3876
Pharmaceuticals		860
Total		458666

Contaminants in biota : Profiles + Timeseries
 No. of stations 16437
 Temporal coverage 1972–2022



Contaminants in biota P36		Data count QFs1+2+6+Q (all sea basins TS+P)
Metals and metalloids		231322
Polychlorinated biphenyls		185577
Pesticides and biocides		98919
Hydrocarbons		93511
NULL		65424
Antifoulants		4467
Radionuclides		292
Pharmaceuticals		10
Total		679522

EMODnet Chemistry Future look

Service evolution

- **Key areas of service evolution in the current workplan:**
 - Improve data access via ERDDAP service for the aggregated collections
 - **Eutrophication:** expanding data collection covering all Member States monitoring data
strengthen connection with Ocean Acidification networks (as e.g. GLODAP, SOCAT)
 - **Contaminants:** improve collection of analytical methods in addition to the actual instruments
 - **Marine litter:** expand to the seafloor litter from images & keep alignment with MSFD monitoring guidelines
- **Key gaps highlighted by the thematic :**
 - Connection with UNEP/MAP and INFO/RAC
 - Endorsement of EMODnet as a data portal for the MSFD by the Member States (as for marine litter)

Engagement, Partnerships and Use Cases

Update on recent use cases in development

Eutrophication



Projected climate oligotrophication of the Adriatic marine ecosystems by using EMODnet Chemistry climatologies

Scientific paper: <https://doi.org/10.3389/fclim.2024.1338374>

Status (as of 10/04/24): [Published on EMODnet CP](#)

Eutrophication and contaminants



EMODnet Chemistry harmonised and validated data collections for the EU Marine Strategy Framework Directive

Status (as of 10/04/24): Under evaluation by the EC JRC

Chiara Altobelli, OGS



Eutrophication

A simple dashboard for visualising seasonal and annual trends in oxygen and nitrate concentrations using EMODnet Chemistry data from the SeaDatnet CDI DB.

More info: <https://eosc-future.maris.nl/documentation>

Status (as of 10/04/24): In final revision by Tjerk Krijger from MARIS

Marine litter



Development of an Indicator-based tool for identification of potential problem areas for ML in EU seas thanks to the EMODnet Chemistry DBs.

Scientific paper: <https://doi.org/10.1016/j.scitotenv.2023.167096>

Status (as of 10/04/24): Under evaluation by the Secretariat



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