

27-29 May 2024 



imdīs

International conference on **Marine Data** and **Information Systems**



MARIS



National
Oceanography
Centre



iImagine



eosc
Blue-Cloud2026



EMODnet

European Marine
Observation and
Data Network

Biology



EMODnet Biology: an EU service for the marine biology community and beyond

Session INFRA: Marine environmental infrastructures for observation data (data management and access)

Joana Beja, VLIZ/EMODnet Biology coordinator

27th to 29th May 2024, IMDIS (Bergen, Norway)

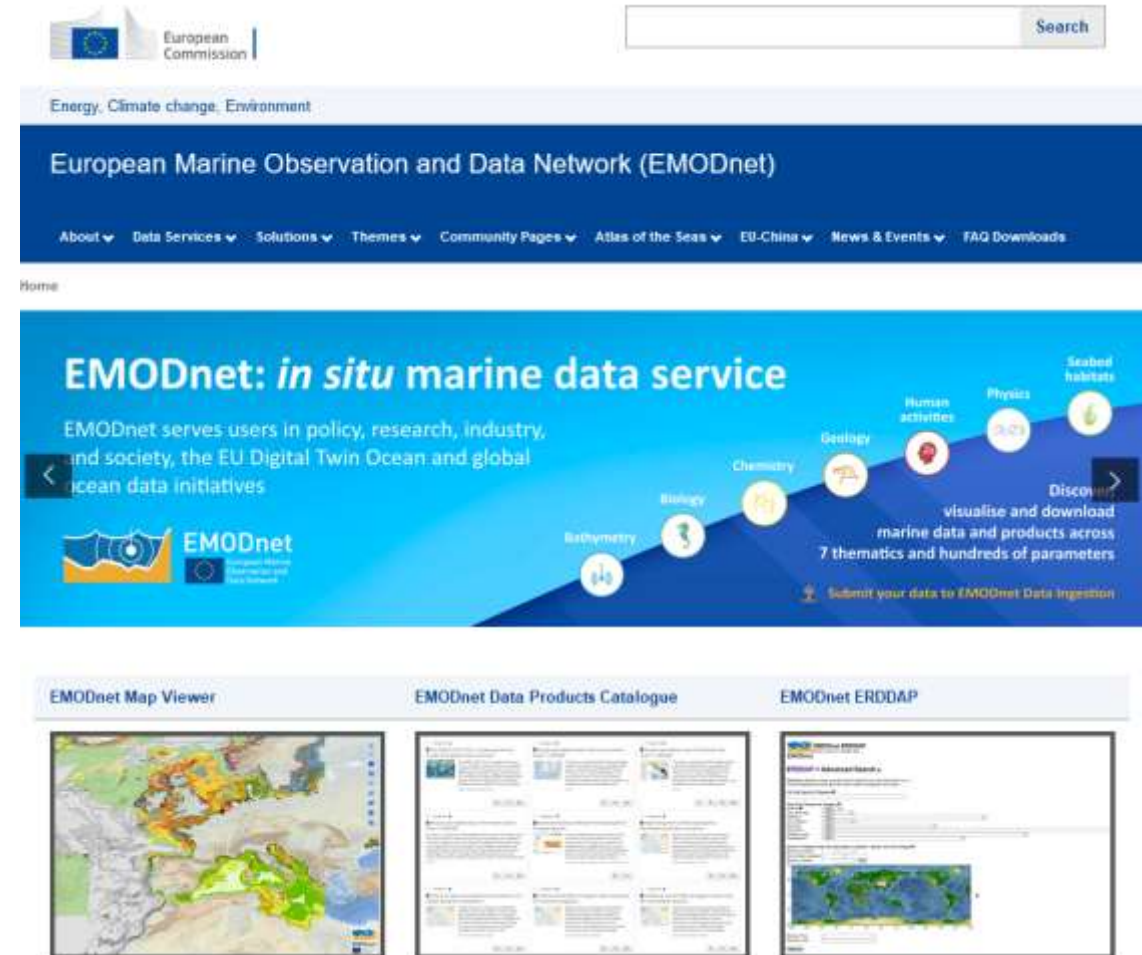
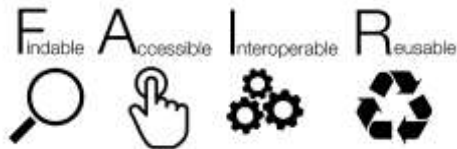


The European Marine Observation and Data Network (EMODnet) is financed by the European Union under Regulation (EU) 2021/1139 of the European Parliament and of the Council of 7 July 2021 establishing the European Maritime, Fisheries and Aquaculture Fund.

What is EMODnet?

(<https://emodnet.ec.europa.eu/en>)

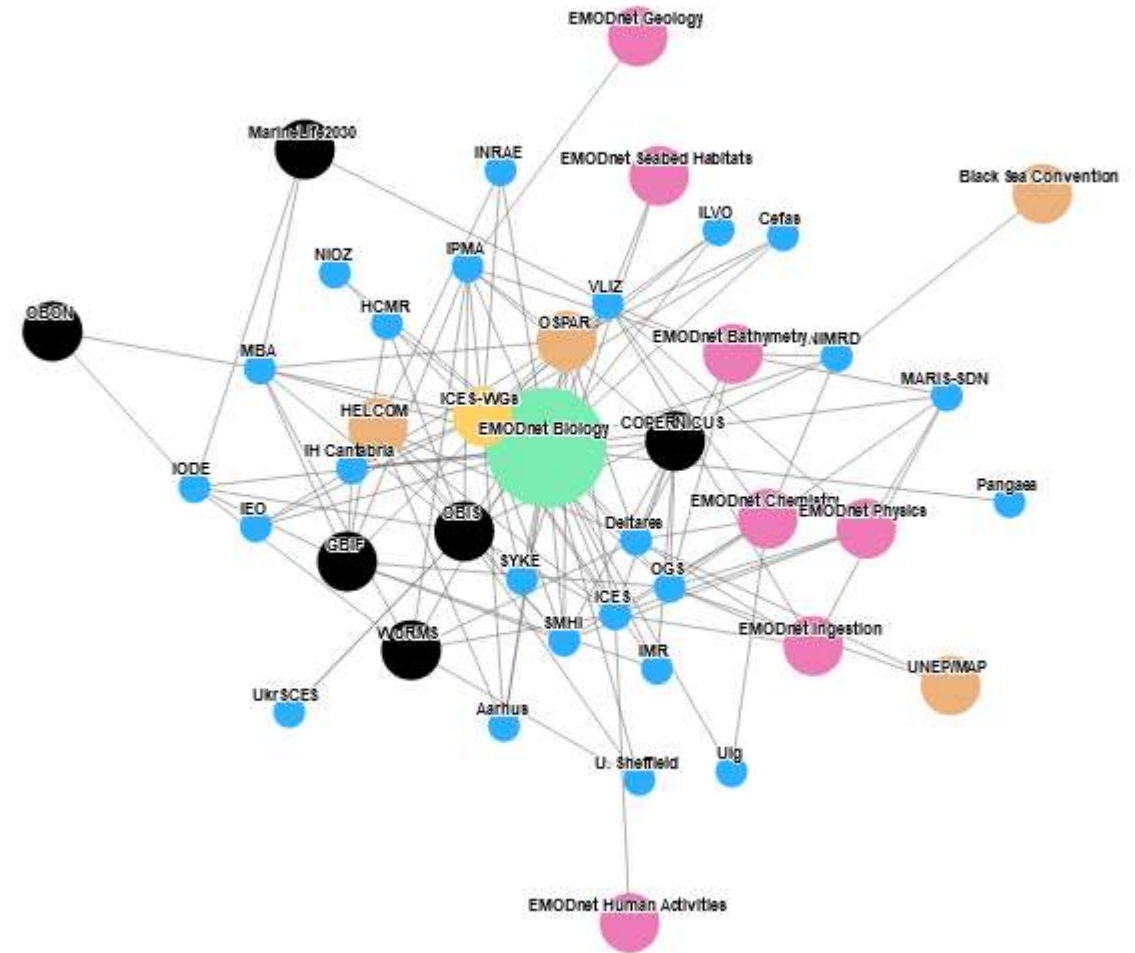
- EU service for in situ marine data
- 7 thematic domains: Bathymetry, **Biology**, Chemistry, Geology, Human Activities, Physics, Seabed Habitats (+ Ingestion service)
- Network with more than 120 partner organisations and 30 Associated Partners
- Provides free, unrestricted access to in situ marine data and data products
- Adheres to [INSPIRE](#) and [FAIR](#) data principles and webservices follow [OGC](#) standards



What do we do in EMODnet Biology?

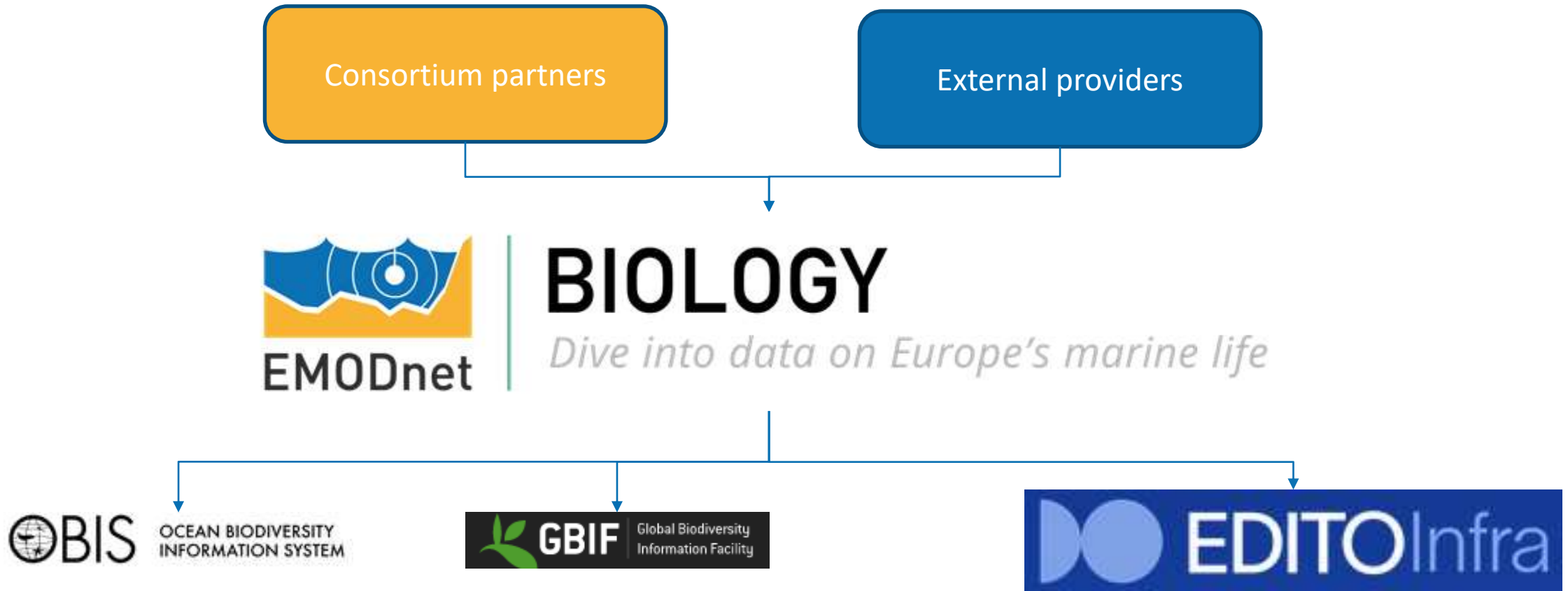
Overview

- Consortium with 24 partners
- Publish marine biodiversity data
- Create biodiversity data products
- Provide training and create guidelines for data providers and product creators
- Publish informative material
- Support the EU member states, EU institutions and Regional Sea Conventions with their work



Data flows

Data Submission and Publishing



What do we do in EMODnet Biology?

Data Publication

- Focus on European Seas but we accept data from anywhere in the world's oceans
- Target primarily data from 9 sub-themes



- Data types: Observations, acoustic, tracking, imaging, ... and **genomics**

Data

- Output in DwC OBIS ENV
 - https://manual.obis.org/data_format.html#obis-holds-more-than-just-species-occurrences-the-env-data-approach

Vocabularies

- Taxonomy-> WoRMS
 - www.marinespecies.org
- Event locations-> Marine Regions
 - www.marineregions.org
- Biotic and abiotic measurements and facts-> BODC NVS2
 - <https://www.bodc.ac.uk/resources/vocabularies/>

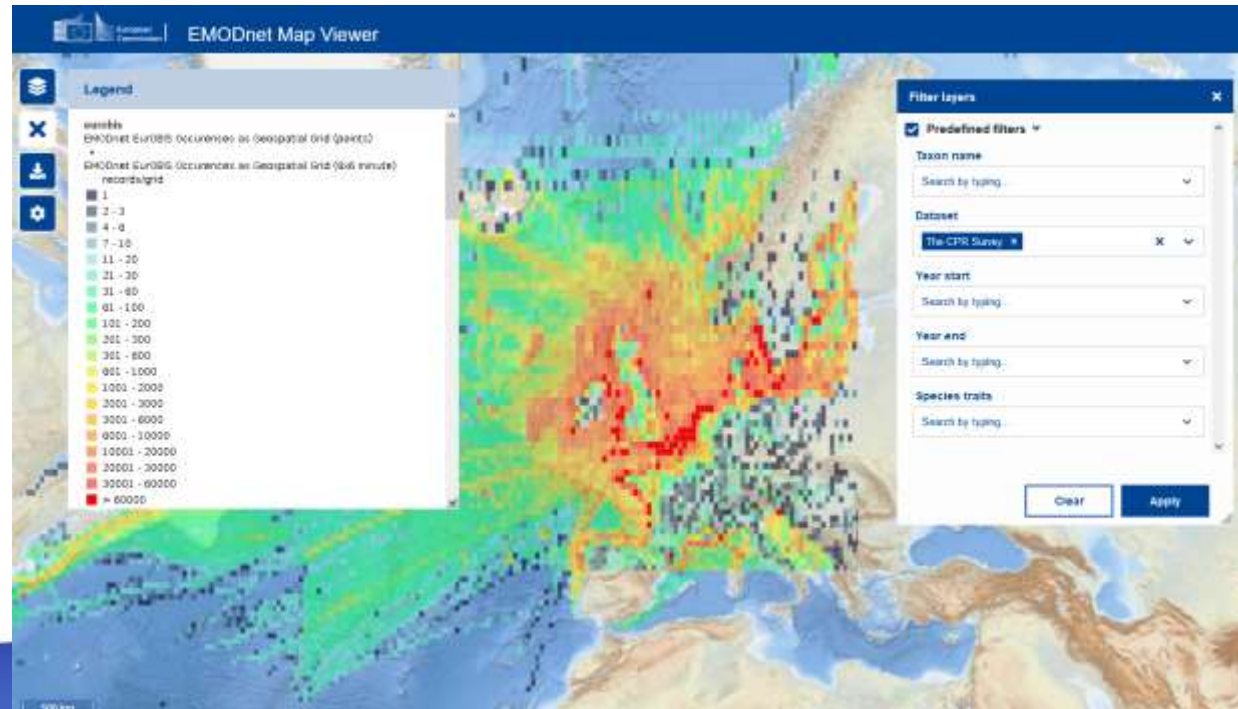
Product

- CF NetCDF
- Most products available in the EMODnet CP ERDDAP instance
 - <https://erddap.emodnet.eu/erddap/search/index.html?page=1&itemsPerPage=1000&searchFor=biology>
- Products available in the VLIZ and EMODnet CP Geoserver instances
 - <https://geo.vliz.be/geoserver/web/?0>
 - <https://ows.emodnet.eu/geoserver/web/?0>
- R Packages

What do we do in EMODnet Biology?

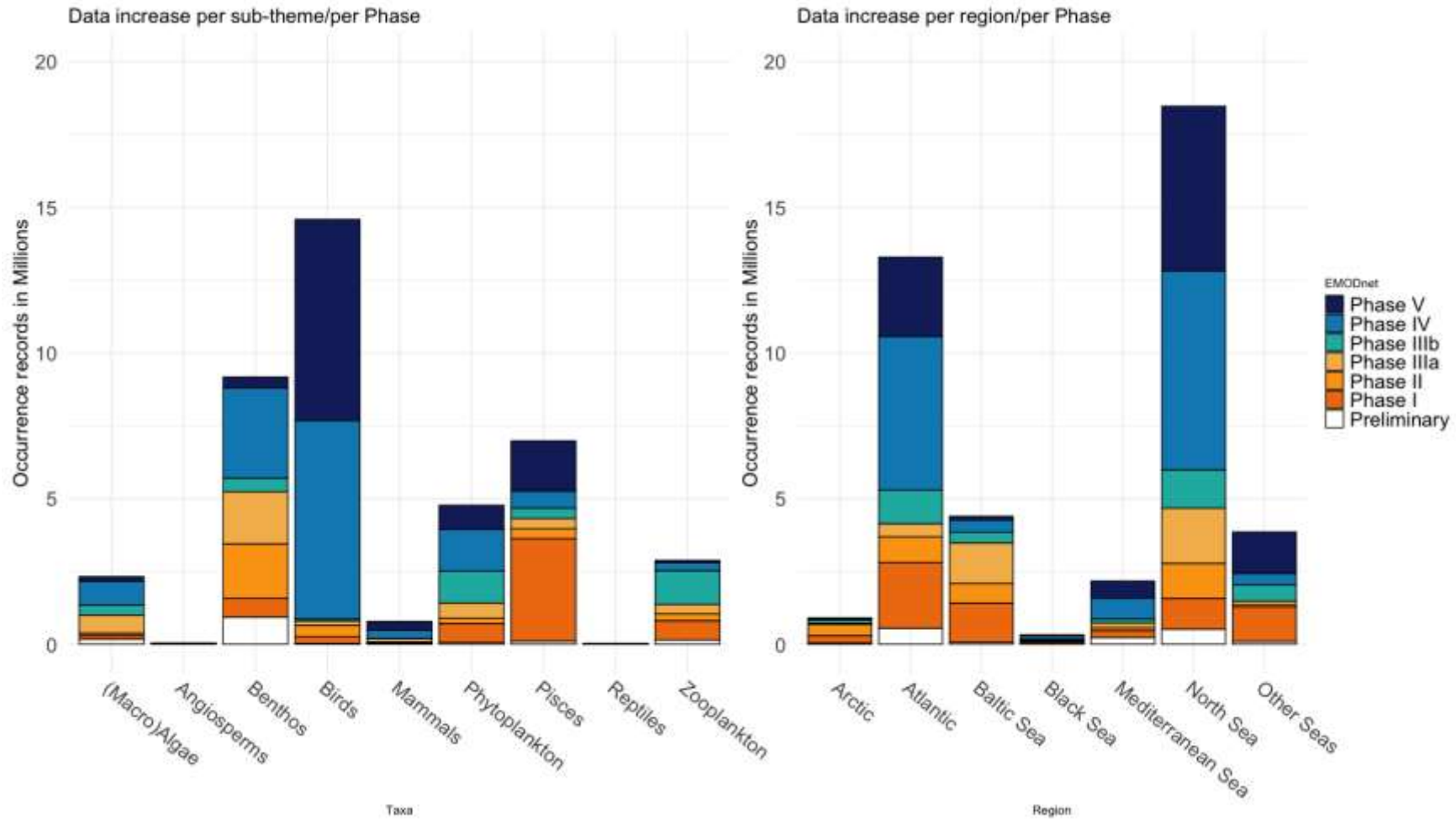
Data Publication

- 1325 datasets with data URLs
- > 40M occurrence records + > 96M extended Measurements or Facts
- Layer-> [EurOBIS database observations](#)



EMODnet Biology Evolution

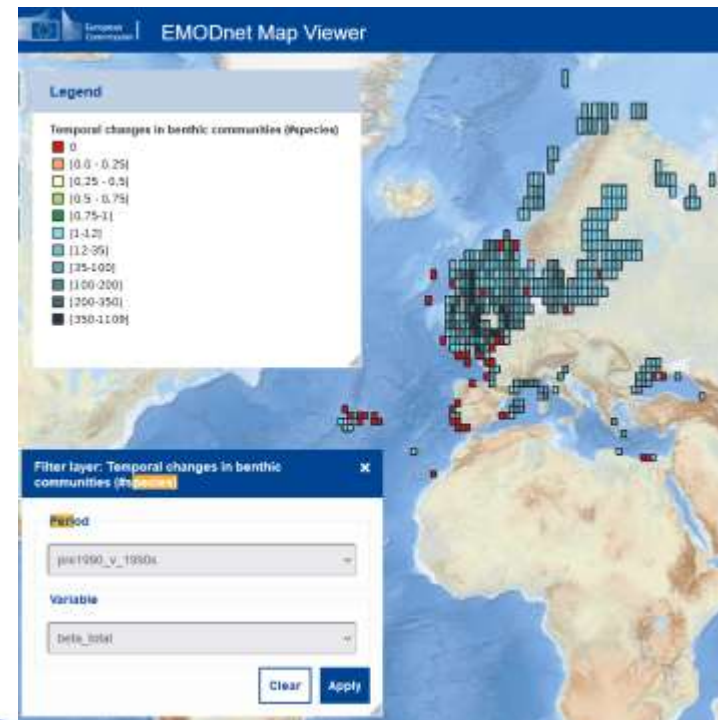
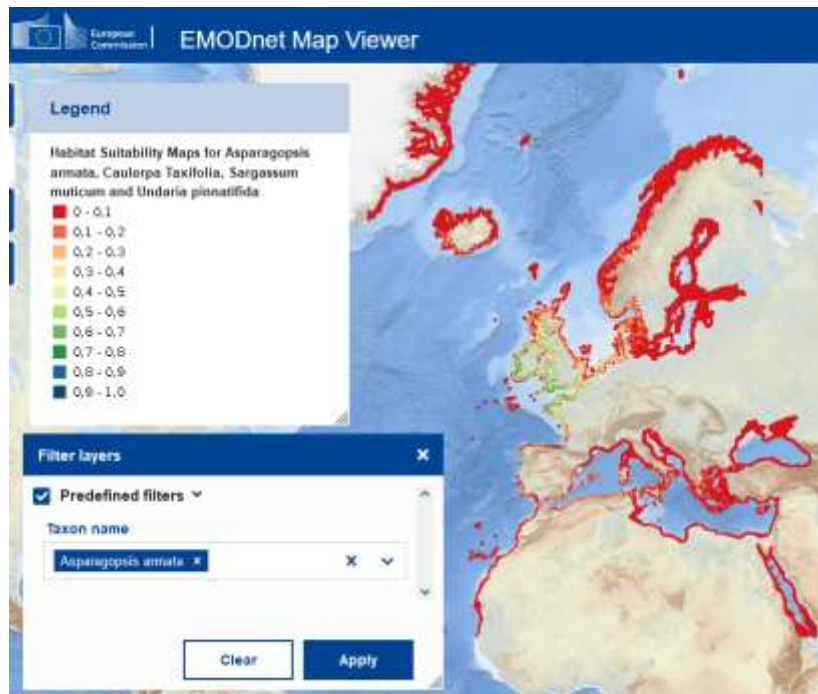
Data Publication

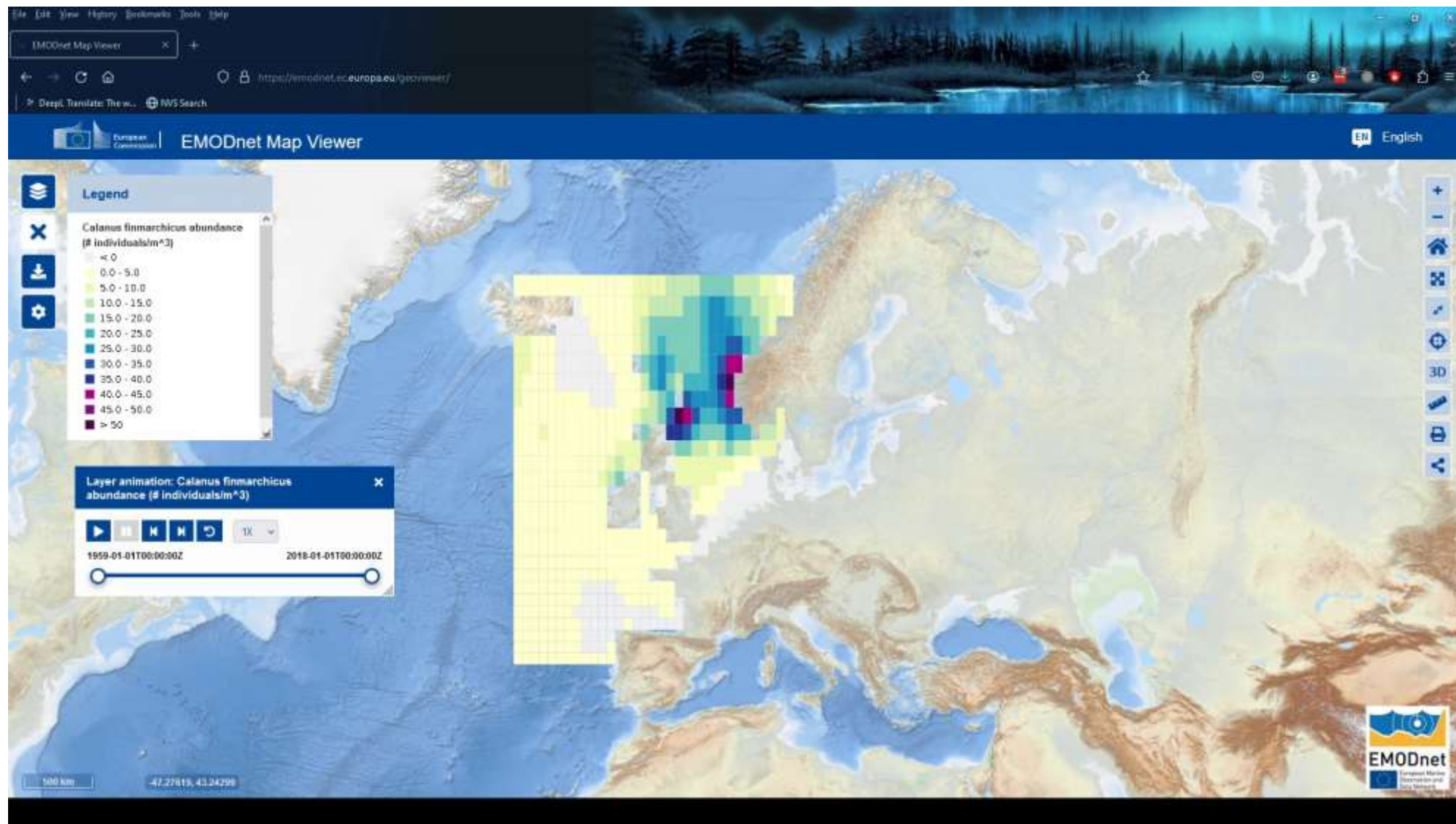


What do we do in EMODnet Biology?

Data Products

- 38 products (including 3 from external sources)
 - <https://emodnet.ec.europa.eu/geonetwork/srv/eng/catalog.search#/home>
 - Layers available in the EMODnet viewer: 3 Benthos+ 5 Fish+ 1 Macroalgae + 2 Mammals + 3 Phytoplankton + 4 Zooplankton + 1 other taxa
 - Consortium developed products are documented in GitHub repositories (<https://github.com/EMODnet>)

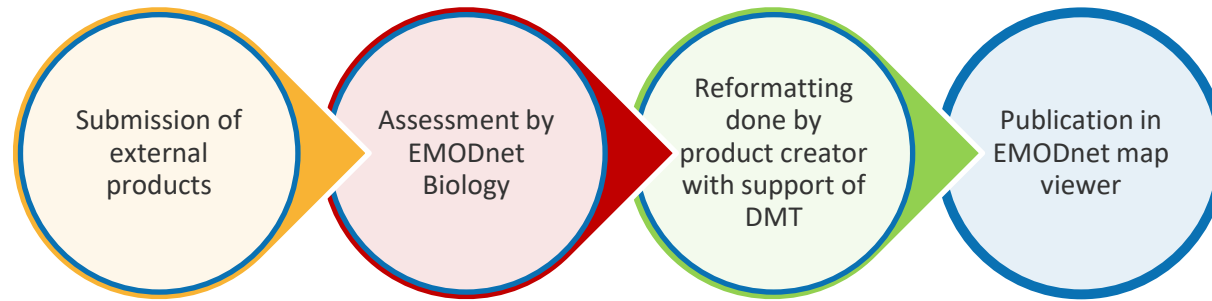




What do we do in EMODnet Biology?

Data Product

- Workflow for external products

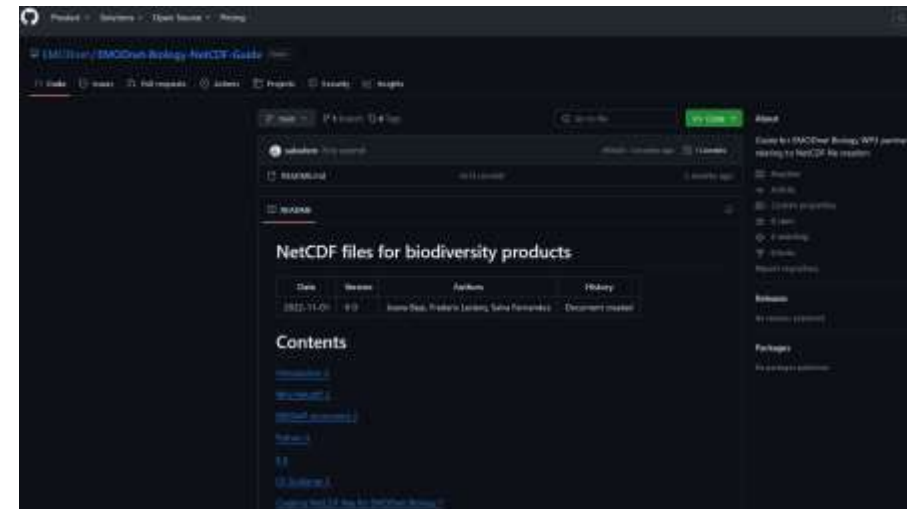
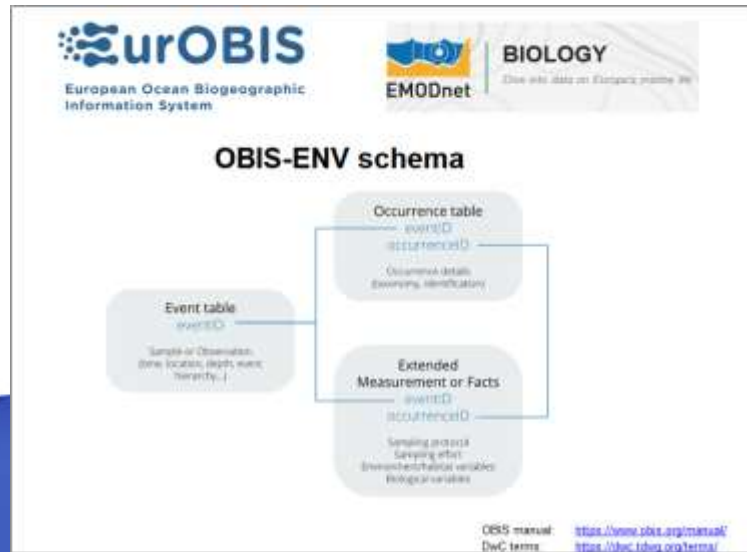


- Biodiversity product guidance available in the EMODnet GitHub repository
 - <https://github.com/EMODnet/EMODnet-Biology-NetCDF-Guide>

Guidelines, templates, tools

- Biology information
 - <https://emodnet.ec.europa.eu/en/biology#biology-key-services>
- Online self paced course
 - "Contributing datasets to EMODnet Biology"
 - <https://classroom.oceanteacher.org/enrol/index.php?id=958>
- Biodiversity data product creation guidance
 - <https://github.com/EMODnet/EMODnet-Biology-NetCDF-Guide>

- Templates: [DwC file](#)



- VLIZ hosts and provides technical support for > 30 IPT instances
 - IPT for data sharing (<https://ipt.vliz.be/eurobis>)
- In collaboration with LifeWatch Belgium we developed a data QC tool
 - Available as an rshiny application (<https://rshiny.lifewatch.be/BioCheck/>) or
 - R Package (<https://github.com/EMODnet/EMODnetBiocheck>)
- We have developed R Packages for EMODnet webservice
 - For WCS services (<https://github.com/EMODnet/EMODnetWCS>) and
 - For WFS services (<https://github.com/EMODnet/EMODnetWFS>)
- Webservices
 - Data and products available via [VLIZ](#) or [EMODnet CP](#) Geoserver instances and via [EMODnet CP ERDDAP](#) instance
 - Guidance available via <https://github.com/EMODnet/EMODnet-Biology-Guidance>



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<https://emodnet.ec.europa.eu/en/biology>
bio@emodnet.eu



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