



**EMODnet**



European Marine  
Observation and  
Data Network

*Your gateway to marine data in Europe*



# EMODnet: your gateway to marine data in Europe

Protecting our coasts: how to anticipate and monitor coastal risks?

The contribution of coastal data

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EMODnet Secretariat



The European Marine Observation and Data Network (EMODnet) is financed by the European Union under Regulation (EU) No 508/2014 of the European Parliament and of the Council of 15 May 2014 on the European Maritime and Fisheries Fund.



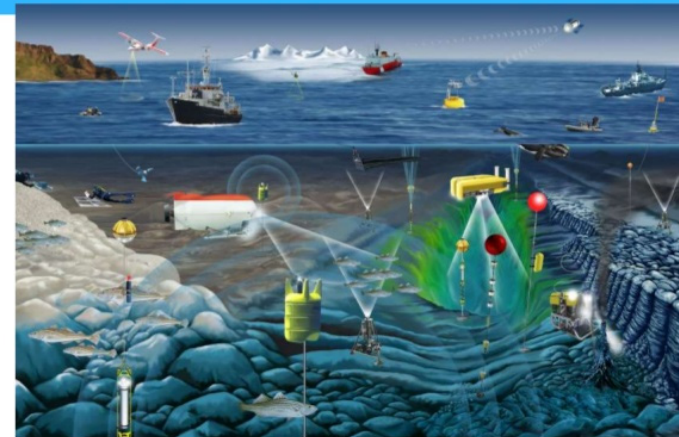
**EMODnet**



## Marine data: why is it important?

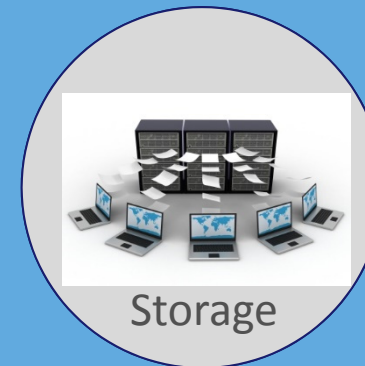
-  Rapid access to reliable and accurate marine environment data is vital in
- addressing threats to marine environment
  - developing policies and legislation protect vulnerable coastal & ocean areas
  - understanding trends and forecasting future changes
  - supporting sustainable economic development ('blue growth')

### Global Ocean Observing System



# Marine data in Europe: what is the challenge?

## The process of marine data



Fragmented

## The role of EMODnet (European Marine Observation and Data Network) ...

... is to unlock hidden and fragmented marine data resources





**EMODnet**



# The beginning of EMODnet

- ⦿ Launched by DG-MARE in 2009 (Directorate-General for Maritime Affairs and Fisheries)
- ⦿ Supported by EU's Integrated Maritime Policy

## ⦿ OBJECTIVES

- **Reduce** uncertainty in knowledge of the oceans and the seas
- **Increase** competition and innovation
- **Reduce** costs



**EMODnet**



## The core principles of EMODnet

- ① **Collect data once, use it many times**
- ② Develop data standards across and within disciplines
- ③ Process and validate data at different European levels
- ④ Extract maximum value from efforts of Member States
- ⑤ Build on existing efforts from data communities
- ⑥ Develop a user-driven decision-making process
- ⑦ Provide statements on data ownership, accuracy and precision
- ⑧ Recognise marine data are a public good

→ [www.emodnet.eu](http://www.emodnet.eu) ←



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## EMODnet consists of 5 strands

 Network of >150 organisations



7 thematic portals

Central Portal

6 Sea-basin Checkpoints

Data Ingestion Portal

Secretariat



**EMODnet**



European Marine  
Observation and  
Data Network

## The development of EMODnet in different phases

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Phase I – Limited sea basins											

- Phase 1 — 59 institutions, budget €6.45 million
- Prototype of Thematic data portals
- Limited selection of parameters and sea-basins
- Low-resolution data products

# The development of EMODnet in different phases

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Phase I – Limited sea basins											
				Phase II – Low resolution all basins							

⦿ Phase 1 — 59 institutions, budget €6.45 million  
 Prototype of Thematic data portals  
 Limited selection of parameters and sea-basins  
 Low-resolution data products

⦿ Phase 2 — 120 institutions, budget €16.3 million  
 More parameters, and coverage of all European sea-basins  
 Medium-resolution data products  
 Establishment Central Portal & Sea-basin Checkpoints  
 Launch Secretariat

# The development of EMODnet in different phases

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Phase I – Limited sea basins											
				Phase II – Low resolution all basins							
								Phase III – Multi-resolution			

-  Phase 1 — 59 institutions, budget €6.45 million  
 Prototype of Thematic data portals  
 Limited selection of parameters and sea-basins  
 Low-resolution data products
  
-  Phase 2 — 120 institutions, budget €16.3 million  
 More parameters, and coverage of all European sea-basins  
 Medium-resolution data products  
 Establishment Central Portal & Sea-basin Checkpoints  
 Launch Secretariat
  
-  **Phase 3** — >150 institutions, budget €20 million  
 Multi-resolution digital map of entire European seabed by 2020



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European Marine  
Observation and  
Data Network

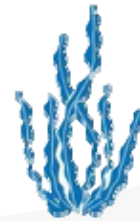
EMODnet created portals, giving access to a range of data archives across 7 disciplines



**BATHYMETRY**



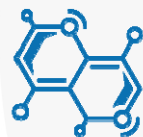
**GEOLOGY**



**SEABED HABITATS**



**PHYSICS**



**CHEMISTRY**



**BIOLOGY**



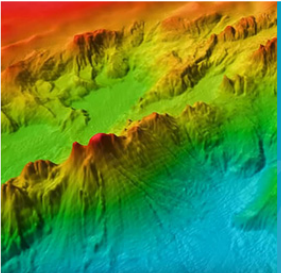
**HUMAN ACTIVITIES**



# Seven thematic groups/portals




Thierry Schmitt



### BATHYMETRY

Data on bathymetry (water depth), coastlines, and geographical location of underwater features, wrecks.

[USE CASES](#) [INFO](#) [ACCESS](#)



### GEOLOGY

Data on seabed substrate, sea-floor geology, coastal behaviour, geological events, and minerals.

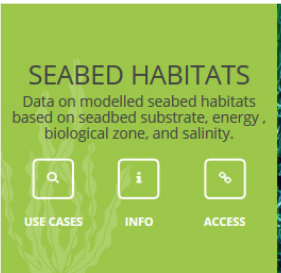
[USE CASES](#) [INFO](#) [ACCESS](#)



Henry Vallius



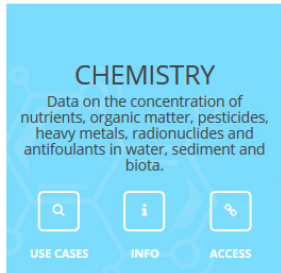
Helen Lillis



### SEABED HABITATS

Data on modelled seabed habitats based on seabed substrate, energy, biological zone, and salinity.

[USE CASES](#) [INFO](#) [ACCESS](#)



### CHEMISTRY

Data on the concentration of nutrients, organic matter, pesticides, heavy metals, radionuclides and antifoulants in water, sediment and biota.


[USE CASES](#) [INFO](#) [ACCESS](#)



Alessandra Giorgetti




Simon Claus



### BIOLOGY

Data on temporal and spatial distribution of species abundance and biomass from several taxa.

[USE CASES](#) [INFO](#) [ACCESS](#)




### PHYSICS

Data on salinity, temperature, waves, currents, sea-level, light attenuation, and FerryBoxes.

[USE CASES](#) [INFO](#) [ACCESS](#)



Antonio Novellino



### HUMAN ACTIVITIES

Data on the intensity and spatial extent of human activities at sea.

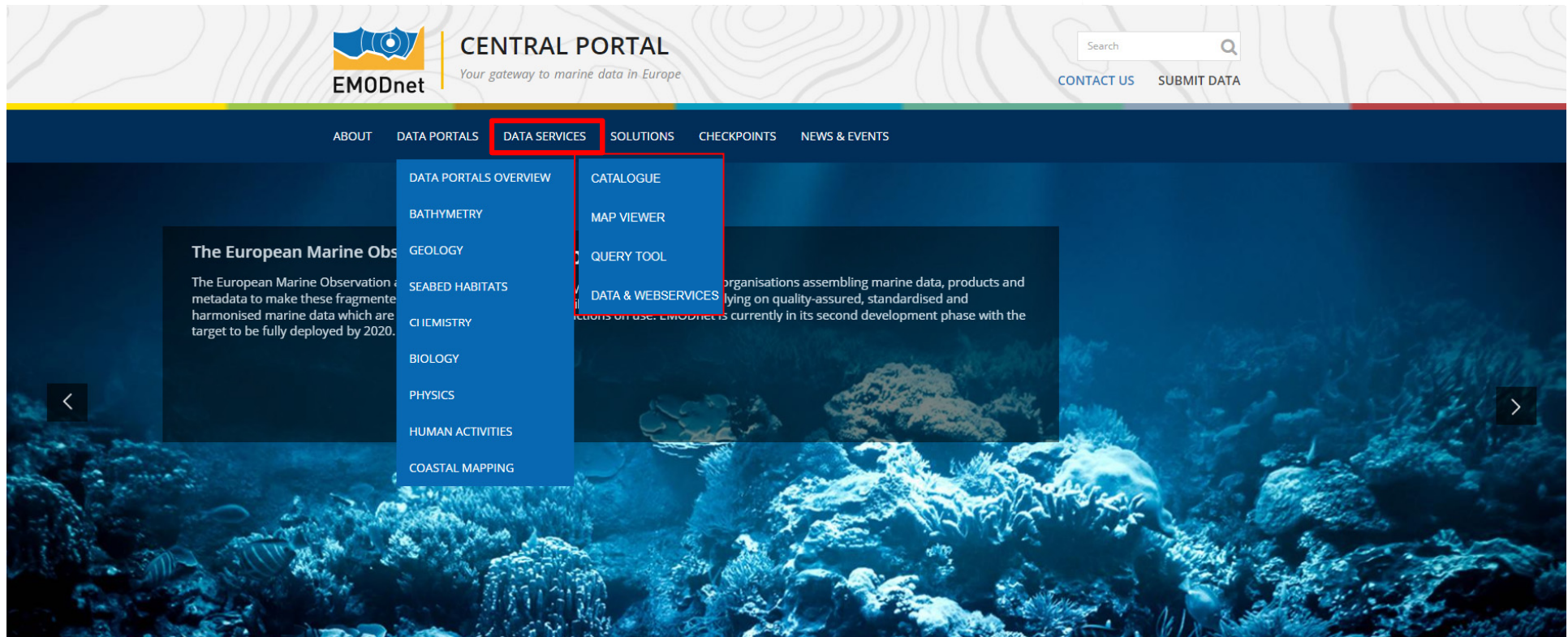
[USE CASES](#) [INFO](#) [ACCESS](#)



Alessandro Pititto

# The Central Portal provides a single point of access to the 7 thematic portals

www.emodnet.eu



The screenshot shows the EMODnet Central Portal website. The header features the EMODnet logo, the text "CENTRAL PORTAL" and "Your gateway to marine data in Europe", a search bar, and links for "CONTACT US" and "SUBMIT DATA". The main navigation bar includes "ABOUT", "DATA PORTALS", "DATA SERVICES", "SOLUTIONS", "CHECKPOINTS", and "NEWS & EVENTS". The "DATA SERVICES" menu is open, displaying a list of thematic portals: "DATA PORTALS OVERVIEW", "CATALOGUE", "MAP VIEWER", "QUERY TOOL", "DATA & WEBSERVICES", "BATHYMETRY", "GEOLOGY", "SEABED HABITATS", "CHEMISTRY", "BIOLOGY", "PHYSICS", "HUMAN ACTIVITIES", and "COASTAL MAPPING". The background of the page is a deep-sea coral reef image. A text box on the left side of the page reads: "The European Marine Observation and Data Network (EMODnet) is a network of organisations assembling marine data, products and services on quality-assured, standardised and harmonised marine data which are target to be fully deployed by 2020. EMODnet is currently in its second development phase with the goal to provide a single point of access to the 7 thematic portals."

3/15/2018

13



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# Coastal mapping project, also part of EMODnet family

coastal-mapping.eu

HOME PARTNERS PROMOTION LICENCE & CONTACT

500 km WGS84: 058.1326° N, 018.9463° W ETRS89-LAEA: X = 2667724m, Y = 4234863 m

LAYERS

EMODNet Bathymetry with ...

TOOLS

WELCOME TO THE EMODNET COASTAL MAPPING PORTAL

Data

Metadata

**Bathymetry**

Data on bathymetry (water depth), coastlines, and geographical location of underwater features such as wrecks

**Geology**

Data on seabed substrate, seafloor geology, coastal behaviour, geological events and probabilities, and minerals

**Biology**

Data on temporal and spatial distribution of species abundance and biomass from several taxa

**Chemistry**

Data on concentrations of chemicals (pesticides, heavy metals, antifoulants) in water, sediments and biota

**Physics**

Data on salinity, temperature, waves, currents, sea level, light attenuation and FerryBox data

**Seabed habitats**

Data on modelled seabed habitats based on seabed substrate, energy, biological zone and salinity

**Human activities**

Data on the intensity and spatial extent of human activities at sea







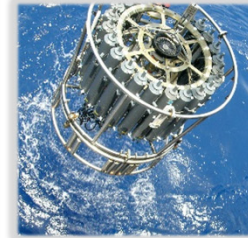




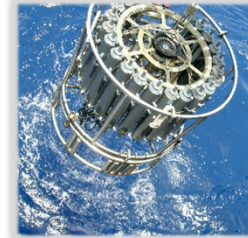

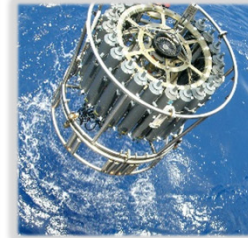


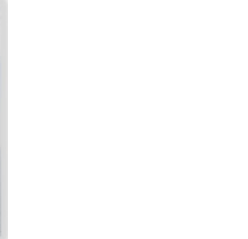


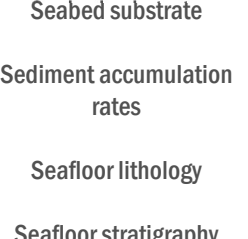
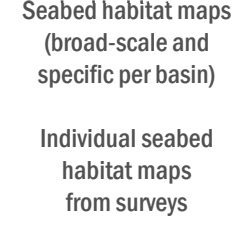
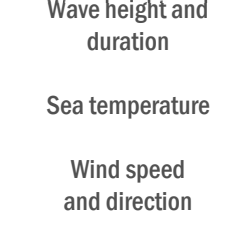
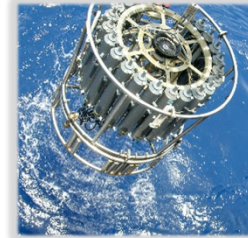


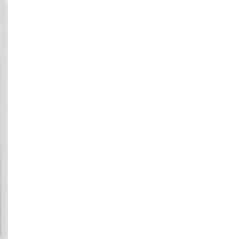


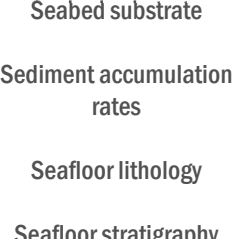
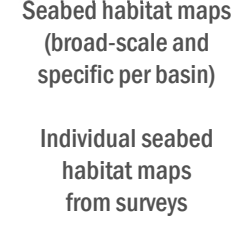
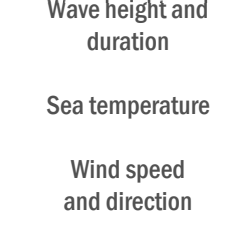
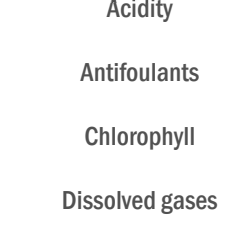
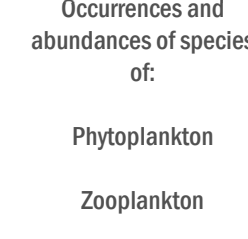


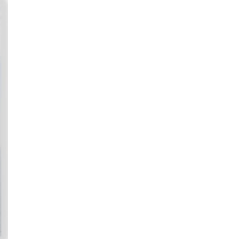


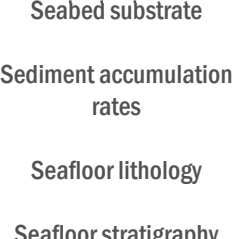
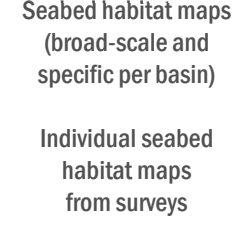
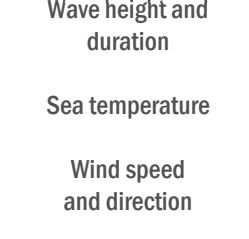
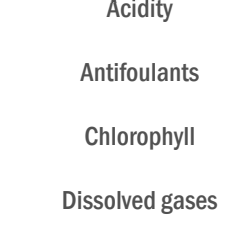
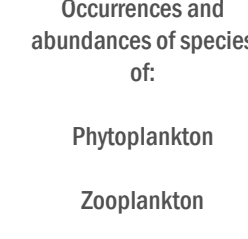

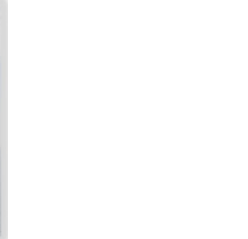


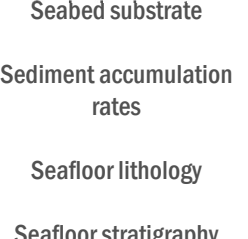
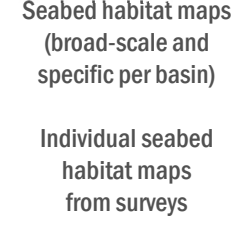
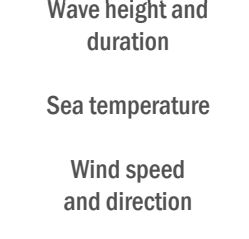
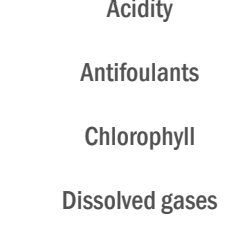
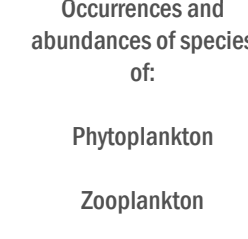
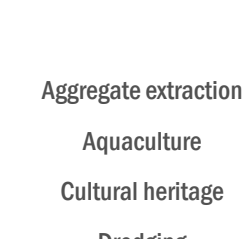




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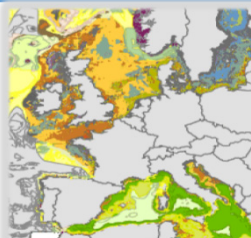
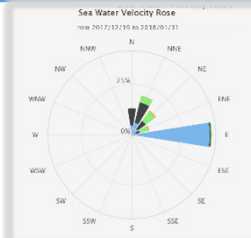
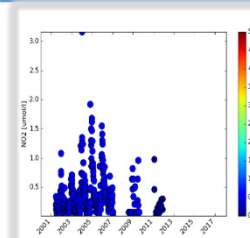
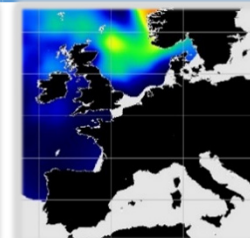

Data Products

Data Services

# Thematic DATA coverage by the portals

Geology	Seabed habitats	Physics	Chemistry	Biology	Human activities
      	  	         	          	         	             

# Thematic DATA PRODUCT coverage by the portals

Country	Geology	Seabed habitats	Physics	Chemistry	Biology	Human activities
						
Model	<b>Maps of:</b> Seabed substrate Sediment accumulation rates Seafloor lithology Seafloor stratigraphy Coastal behaviour Geological events and probabilities Mineral occurrences	<b>EMODnet broad-scale seabed habitat map for Europe (EUSeaMap)</b>  <b>Confidence maps</b>  <b>Maps of:</b> Seabed habitat maps (broad-scale and specific per basin) Individual seabed habitat maps from surveys Environmental variables influencing habitat type (depth, salinity, currents, light, ...)	<b>Time series</b>  <b>Dynamic plots</b>  <b>Profiles</b>  <b>Statistics</b> (trends, max, min, average, ...) <b>Maps of:</b> Wave height and duration Sea temperature Wind speed and direction Salinity Horizontal speed of the water column Water clarity Changes in sea level	<b>Concentration maps using DIVA software</b>  <b>Dynamics plots</b>  <b>Profiles of:</b> Acidity Antifoulants Chlorophyll Dissolved gases Fertilisers Hydrocarbons Heavy metals Organic matter Polychlorinated biphenyls Pesticides and biocides Radionuclides	<b>Map viewer of:</b> Phytoplankton Zooplankton Macro-algae Angiosperm Fish Reptile Benthos Bird Sea mammal  <b>Dynamic gridded abundance plots showing geographical variability of species of:</b> Benthos Birds Fish Sea mammals Micro-organisms	<b>Map viewer of:</b> Aggregate extraction Aquaculture Cultural heritage Dredging Fisheries Hydrocarbon extraction Traffic in main ports Ocean energy facilities Pipelines and cables Protected areas Status of bathing sites Vessel density Waste disposal (solids) Wind farms

## The concept and aim of the Sea-basin Checkpoints

Still shortcomings with marine data availability & accessibility

Sea-basin Checkpoints launched in 2013 and 2015

Stress tests → test data against specific end-user challenges

**AIM** | to assess the fitness for purpose of marine monitoring data



ARCTIC



ATLANTIC



BALTIC



BLACK SEA



MED SEA



NORTH SEA



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## Sea-basin Checkpoints coordinators



Jacques Populus



Atanas Palazov



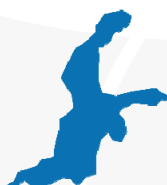
Quillon Harpham



ARCTIC



ATLANTIC



BALTIC



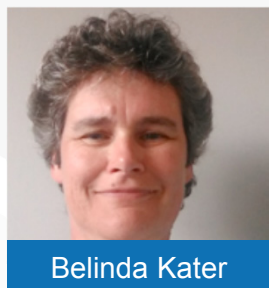
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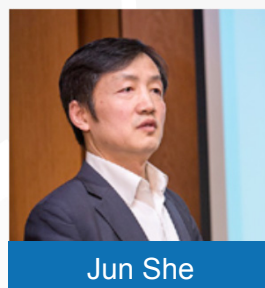
MED SEA



NORTH SEA



Belinda Kater



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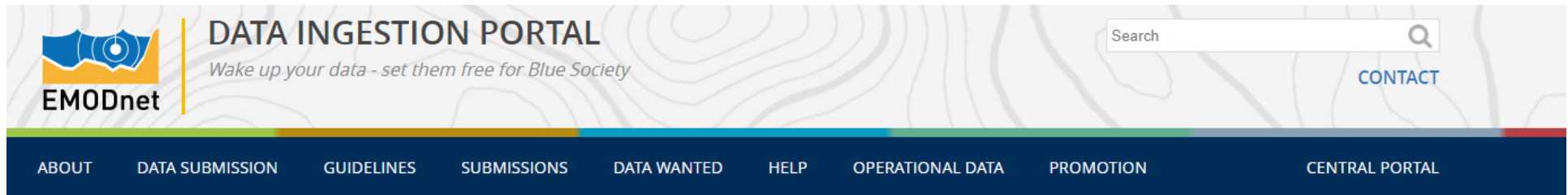


Nadia Pinardi



# Data Ingestion Portal allows contributing data in an easy way

<https://www.emodnet-ingestion.eu/>



[Home](#)

## Welcome to the EMODnet Data Ingestion portal

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.

[READ MORE](#)





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## Organisations wish to join EMODnet?

- (( )) EMODnet Associated Partnership Scheme
- (( )) Flexible, transparent and straightforward
- (( )) Allows to contribute to and benefit from EMODnet






**EMODnet**

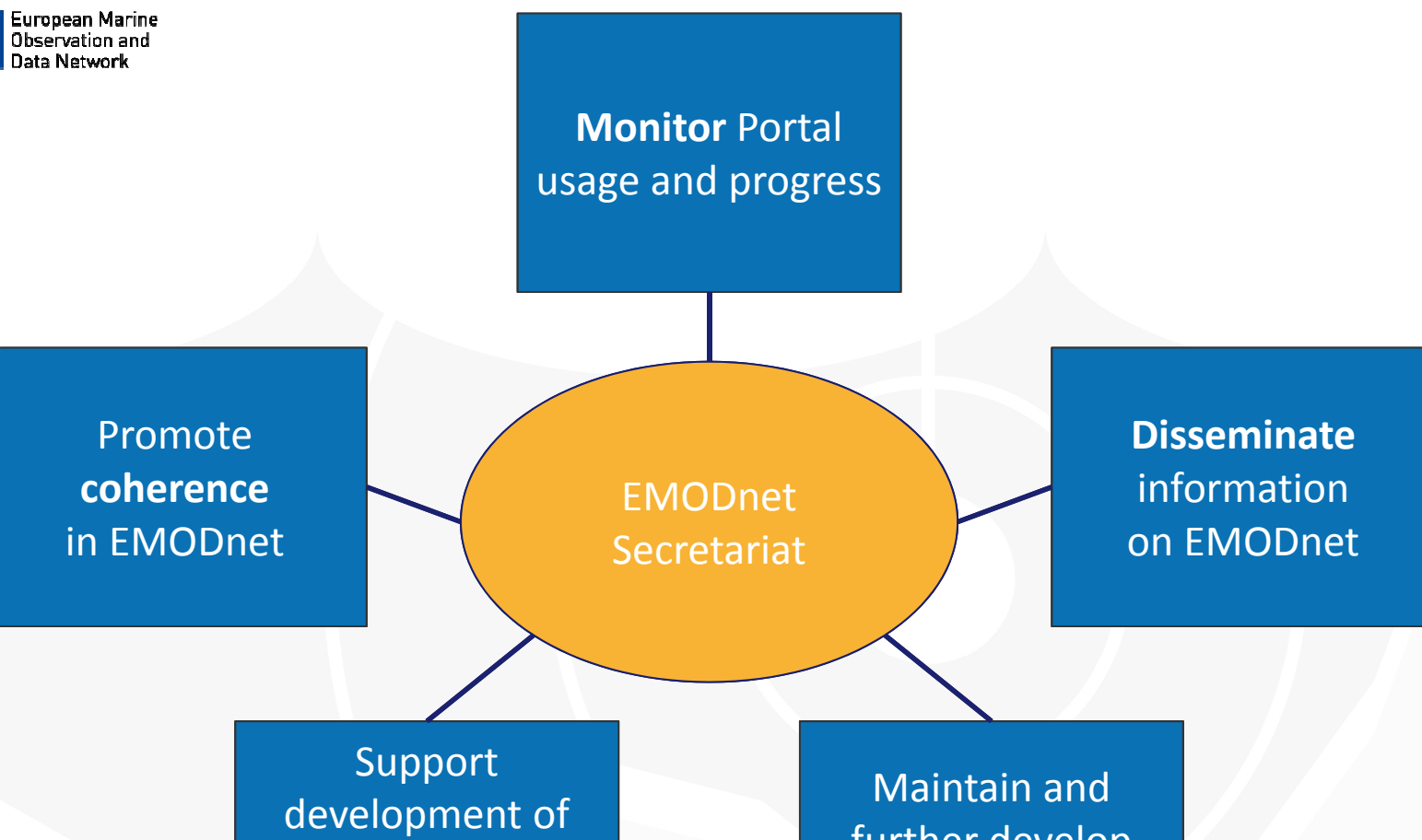


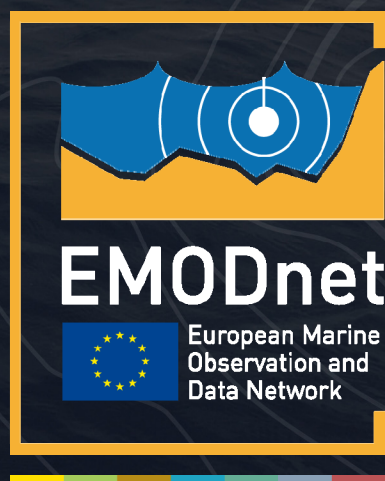
## The role of the EMODnet Secretariat

 **AIM** | To develop a more coherent, effective, efficient and fit for purpose EMODnet, and to stimulate its use by industry, policy and scientific data users.



## EMODnet Secretariat's main tasks





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