



**EMODnet**

European Marine  
Observation and  
Data Network

Physics



# EMODnet Physics updates

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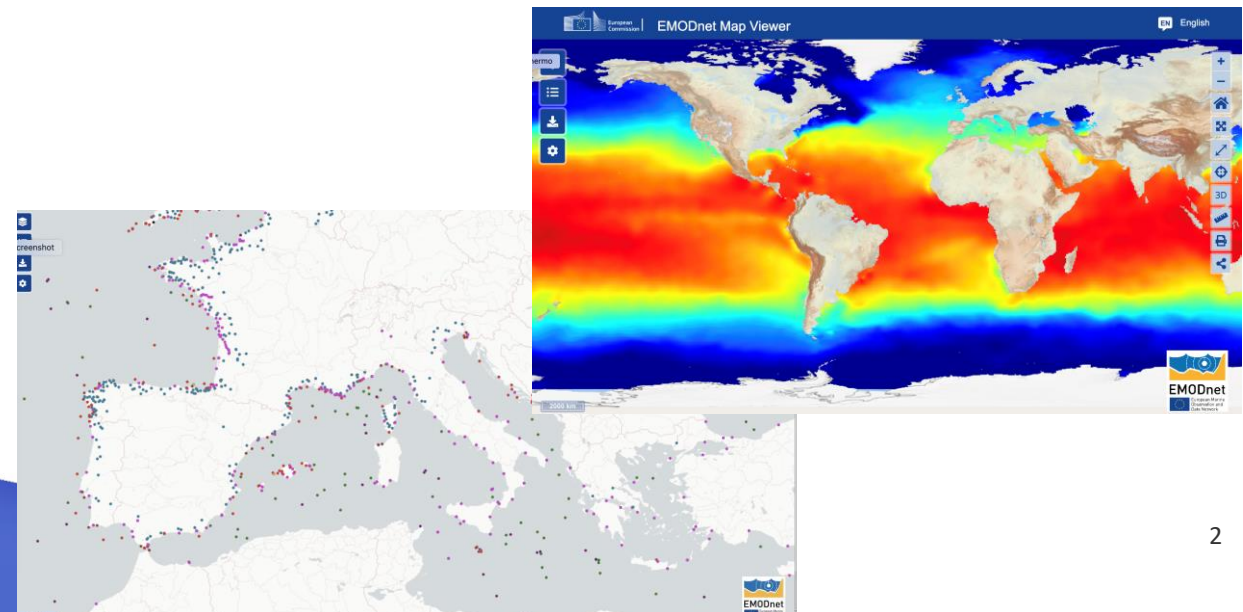
20th EMODnet Steering Committee meeting  
29-30 April 2024

# EMODnet Physics current offer

## Overview of services

- **parameters:**
  - Temperature,
  - Salinity,
  - Sea Level,
  - Currents,
  - Waves and Winds,
  - Optical properties of the water,
  - Under water noise,
  - River runoff,
  - Meteorological data at sea level
- **in situ** data, data collections and products
  - CP Geoviewer, ERDDAP, GeoServer, GeoNetwork
- **near real time and delayed** mode data on ocean physics
- builds on **marine data infrastructures and programs**
- **continuous data flow**
  - 2300 Mooring, 950 Rivers, 700 Gliders/AUVs missions, ...
  - 330 Vessels data, 25900 drifting buoys, 14900 ARGO, ...
- **global coverage** (whenever possible)
- **common standards** and tools (support to community)

Parameter	Stations	Products
Water Temperature	5856141	4
Water Salinity and conductivity	5820447	5
Currents	4494	
Optical Properties (turbidity, light att., ...)	19539	3
Sea Level	7114	4
Meteorological	14684	
Waves (height, direction, ...)	3544	
Winds (strength, direction)	3215	
River outflow	1787	1
Under water noise	5	2



# EMODnet Physics current offer

## Data/Data Products for EU Policy

- **Support to open data, open science, standards**
- **MSP:** land-sea interaction (river outflow, waves, currents, sea level)
- **MSFD:** D7 (Hydrographical conditions = physical parameters of seawater: temperature, salinity, depth, currents, waves, and turbidity) , D11 (Energy including underwater noise) + complementary data for D1 (biodiversity), D5 (Euthorphytation)

Monitoring Parameters of the MSFD Annex III (adopted from Craglia et al., 2010a) and their relevant MSFD indicators of the COM DEC 2010/477/EU.

N	Parameter	MSFD indicator
43	Currents	1.6.3, 7.2.2
46	Ice cover	1.6.3
52	Salinity	1.6.3
60	Temperature	1.6.3
61	Turbidity	1.6.3, 5.2.2
62	Underwater noise	11.1.1, 11.2.1
63	Upwelling	1.6.3
64	Wave exposure	1.6.3

Zampoukas N et al, 2012 - Monitoring methods, their applicability in off-shore areas and their capability to collect data relevant for MSFD indicators

Device	MSFD Indicator
Moorings and Buoy	1.6.3, 5.1.1, 5.1.2, 5.2.1, 5.2.2, 5.2.3, 5.2.4, 5.3.2, 8.1.1, 8.2.2, 9.1.1, 9.1.2, 11.1.1, 11.2.1
Ships of opportunity	5.1.1, 5.1.2, 5.2.1, 5.2.2, 5.2.3, 5.2.4, 7.1.1, 8.1.1, 8.2.2, 9.1.1, 9.1.2
AUVs and Gliders	1.1.1, 1.1.2, 1.1.3, 1.2.1, 1.3.1, 1.4.1, 1.4.2, 1.5.1, 1.5.2, 1.6.2, 1.6.3, 1.7.1, 2.2.1, 2.2.2, 4.3.1, 5.1.1, 5.1.2, 5.2.1, 5.2.2, 5.2.4, 5.3.2, 7.1.1, 7.2.1, 7.2.2, 8.1.1, 8.2.1, 8.2.2, 11.1.1, 11.2.1

# EMODnet Physics Future look

## Service evolution

Add a layer for each theme to discover the in situ data collections

- test under the CP staging environment
  - Wave, Wind
- ready to go under test/staging
  - Sea Level (5min, 60min), Temperature, Salinity
- working on
  - Currents, Optical properties of the water, Meteo, snow-cameras

Add in situ products

- PSMSL (RLR) trends
- Platform-networks products
  - Ships, Gliders, HFR, ...

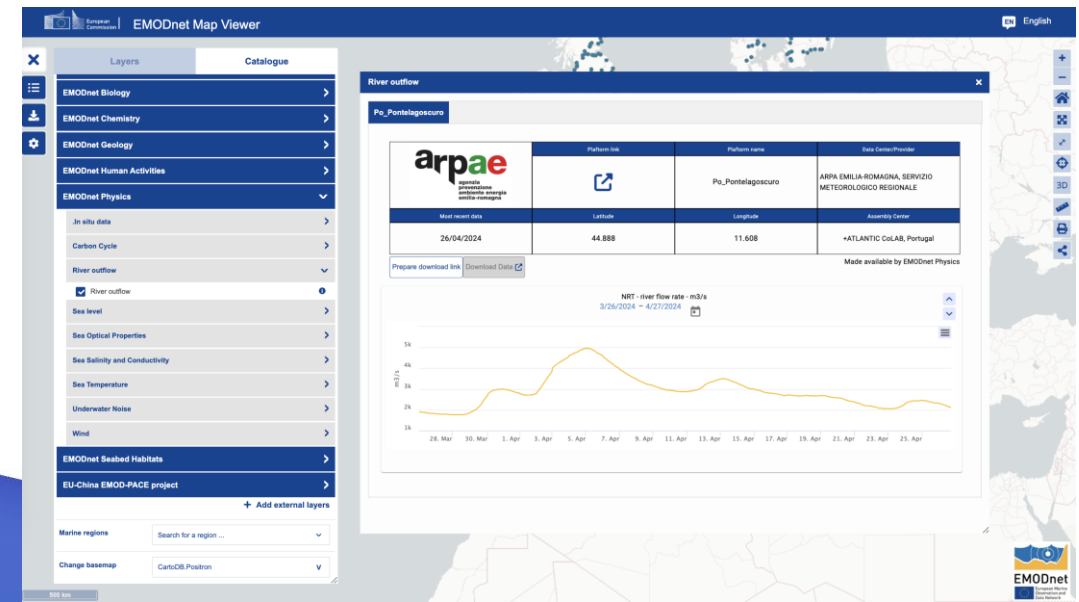
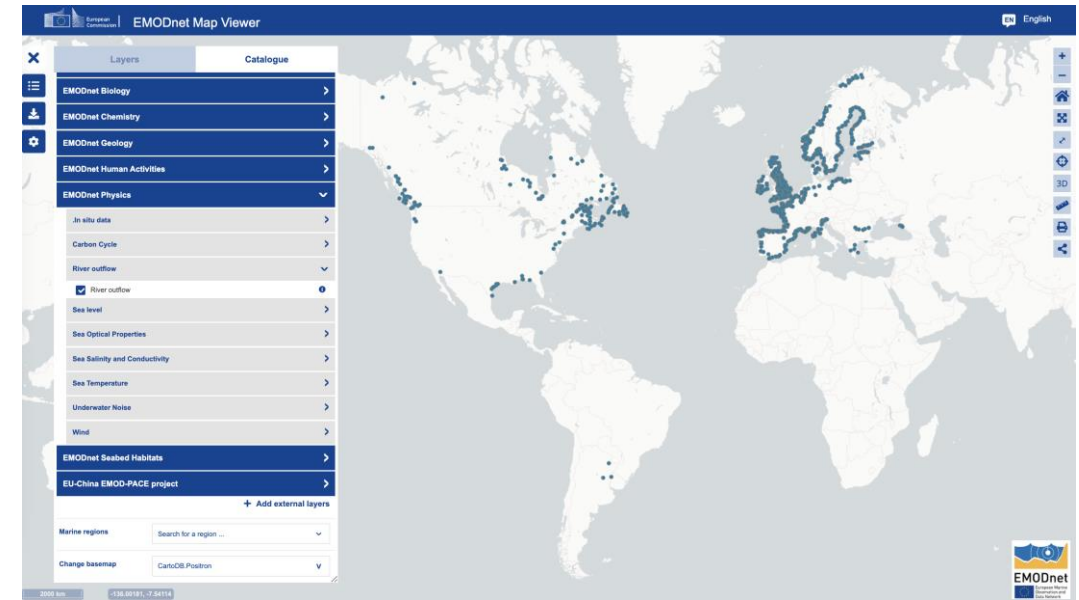
Remove/update obsolete products

- Temperature and Salinity anomalies

Review/improve layers filters

- projects, providers, ...

Improve UX in situ platform page



# EMODnet Physics Future look

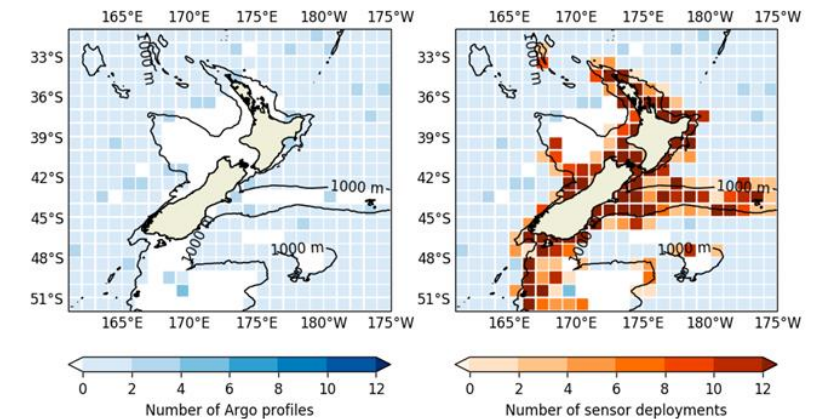
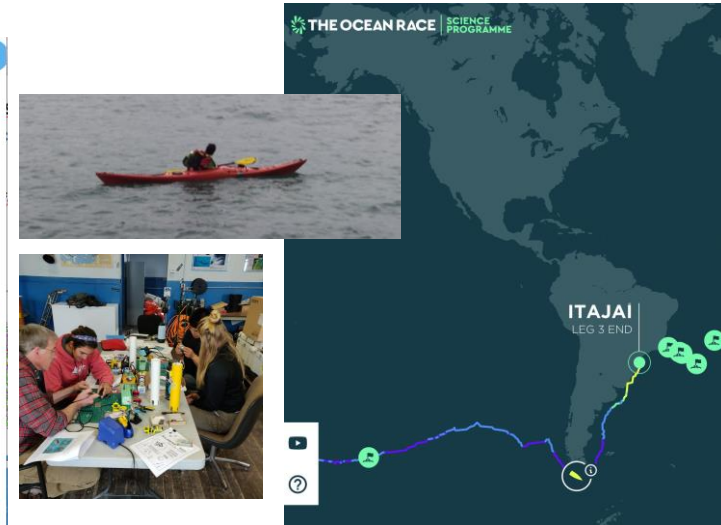
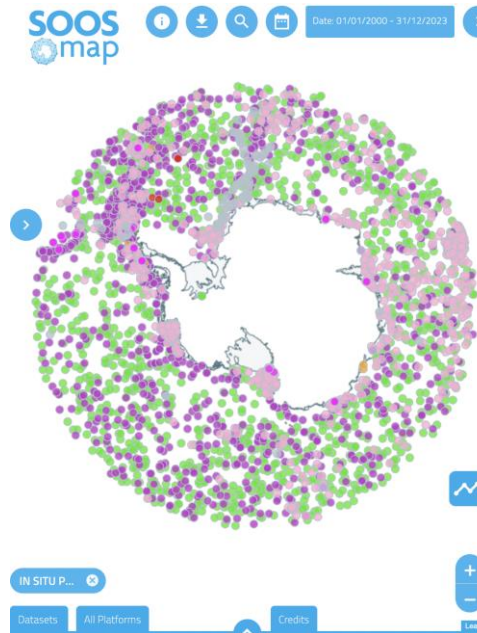
## Service evolution: content, services, partnerships

### new parameters/networks:

- Sea-Air fluxes
- Sea-Land interface
- Ocean sounds
- Citizen Science initiatives

### In partnership with

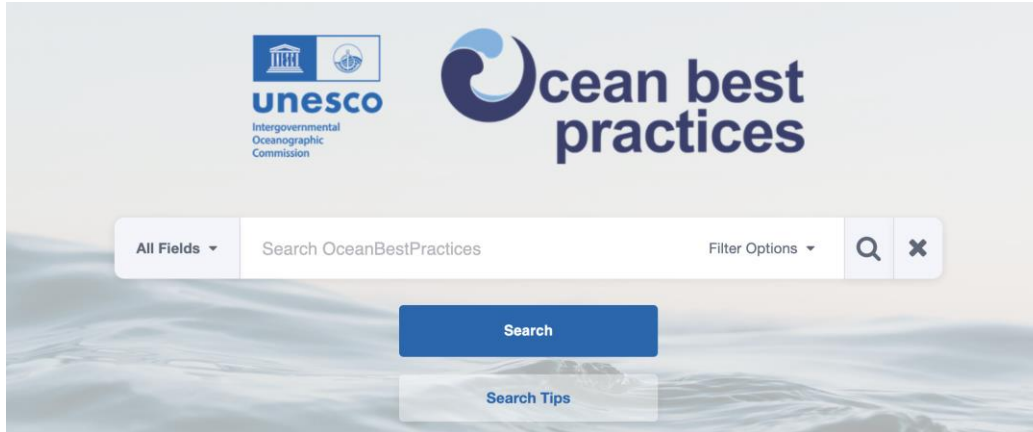
- Copernicus Marine Service INS TAC
- OceanOPS
- EuroGOOS
- Southern Ocean Observing System
- Deep Ocean Observing System
- WMO Hydrological Observing System
- GOOS OGC capacity development
- Horizon Europe Prjs
- ...



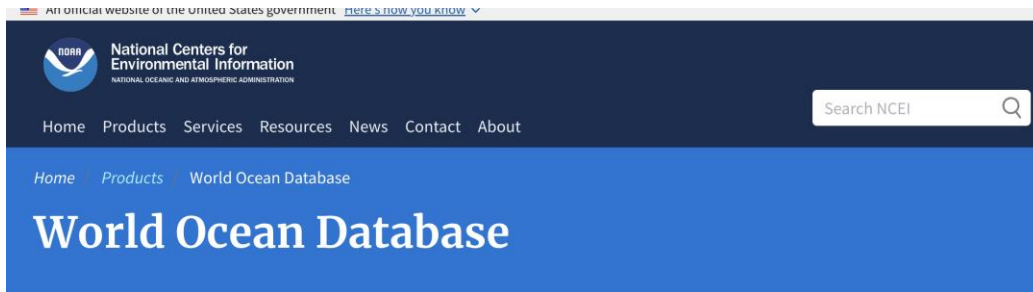
ARGO profiles

vessels using Moana probe system

# Engagement, Partnerships and Use Cases

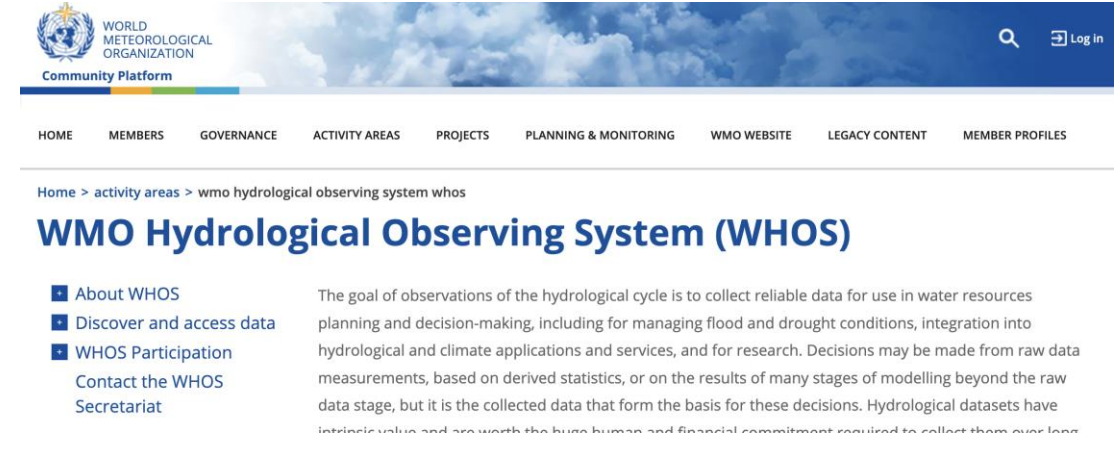


The screenshot shows the search interface of the Ocean Best Practices website. It features the UNESCO Intergovernmental Oceanographic Commission logo and the 'Ocean best practices' title. A search bar contains the text 'Search OceanBestPractices' and includes a dropdown for 'All Fields', a 'Filter Options' dropdown, and search icons. Below the search bar are 'Search' and 'Search Tips' buttons.



The screenshot shows the NCEI website header. It includes the NCEI logo, the text 'National Centers for Environmental Information' and 'NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'. A search bar labeled 'Search NCEI' is present. The navigation menu includes 'Home', 'Products', 'Services', 'Resources', 'News', 'Contact', and 'About'. The breadcrumb trail shows 'Home / Products / World Ocean Database', and the main heading is 'World Ocean Database'.

The World Ocean Database (WOD) is world's largest collection of uniformly formatted, quality controlled, publicly available ocean profile data. It is a powerful tool for oceanographic, climatic, and environmental research, and the end result of more than 20 years of coordinated efforts to incorporate data from institutions, agencies, individual researchers, and data recovery initiatives into a single database. WOD data spans from Captain Cook's 1772 voyage to the contemporary Argo period, making it a valuable resource for long term and historical ocean climate analysis. Original versions of the 20,000+ datasets in the WOD are available through the NCEI archives.



The screenshot shows the WMO Hydrological Observing System (WHOS) website. The header includes the WMO logo and 'WORLD METEOROLOGICAL ORGANIZATION Community Platform'. A navigation menu lists 'HOME', 'MEMBERS', 'GOVERNANCE', 'ACTIVITY AREAS', 'PROJECTS', 'PLANNING & MONITORING', 'WMO WEBSITE', 'LEGACY CONTENT', and 'MEMBER PROFILES'. The breadcrumb trail is 'Home > activity areas > wmo hydrological observing system whos'. The main heading is 'WMO Hydrological Observing System (WHOS)'. A list of links includes 'About WHOS', 'Discover and access data', and 'WHOS Participation'. A paragraph describes the goal of observations of the hydrological cycle: 'The goal of observations of the hydrological cycle is to collect reliable data for use in water resources planning and decision-making, including for managing flood and drought conditions, integration into hydrological and climate applications and services, and for research. Decisions may be made from raw data measurements, based on derived statistics, or on the results of many stages of modelling beyond the raw data stage, but it is the collected data that form the basis for these decisions. Hydrological datasets have intrinsic value and are worth the huge human and financial commitment required to collect them over long periods of time.'



The screenshot shows a banner for the '2024 OCEAN DECADE CONFERENCE' held from April 10, 2024, to April 12, 2024. The banner features the UNESCO logo, the '2021-2030 United Nations Decade of Ocean Science for Sustainable Development' logo, and a navigation menu with 'ABOUT US', 'WHAT'S HAPPENING', 'DECADE ACTIONS', 'ORGANIZATION', and 'GET INVOLVED'. The background is a stylized illustration of a coastal city and harbor.



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