

Interreg



Co-funded by
the European Union



NEXT Black Sea Basin

Reanalysis and short-term forecasting of environmental conditions in the Black Sea using CMEMS and EMODnet



ΔΗΜΟΚΡΙΤΕΙΟ
ΠΑΝΕΠΙΣΤΗΜΙΟ
ΘΡΑΚΗΣ | DEMOCRITUS
UNIVERSITY
OF THRACE

Myrintzou Vasiliki, DUTH
Nikolaos Kokkos, DOMI Dev. P.C.



DOMI Development P.C

17 April 2026, Tbilisi

Interreg



Co-funded by
the European Union

NEXT Black Sea Basin



CMEMS is the **Copernicus** **Marine Environment** **Monitoring Service**

It is funded by **EU** and
operated by **Mercator**
Ocean in Toulouse, France



Atmosphere



Marine



Climate Change



Land



Security



Emergency

BSB00193 - EfxINNOs

It is a service providing **full, free and open access marine data** to regular and systematic reference on the state of the **Blue** (physical), **White** (sea ice) and **Green** (biogeochemical) ocean, on a global and regional scale.



Physical



Sea Ice



Biogeochemical

Blue
Ocean

describes the **physical state of the ocean**, such as sea surface temperature, sea level, currents, waves, and winds.

White
Ocean

deals with the **monitoring of the poles** and to the critical life cycle of any kind of floating, melting or freezing sea-ice.

Green
Ocean

describes the **biogeochemical processes**, the transfer of simple chemical substances between ocean life and the ocean environment. Such as chlorophyll-a concentrations, ocean nutrients, and primary production.

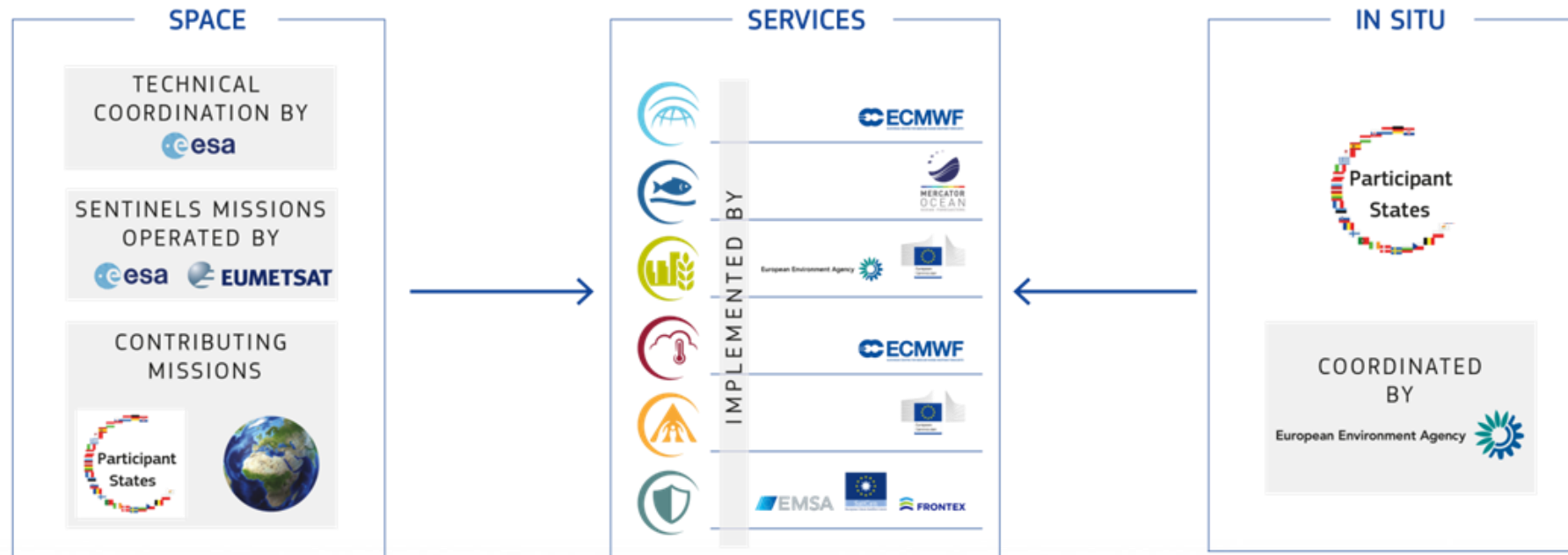


It is **highly dependent** on the timely availability of comprehensive **satellite measurements**, with sufficient space and time coverage of parameters such as surface temperature, ocean color, sea surface height and sea ice,



as well as information from circulation, waves and biogeochemical **models** validated **from measurements received from instruments in the sea (in-situ).**

COPERNICUS marine service encompasses 3 main components: SPACE , INSITU and SERVICES



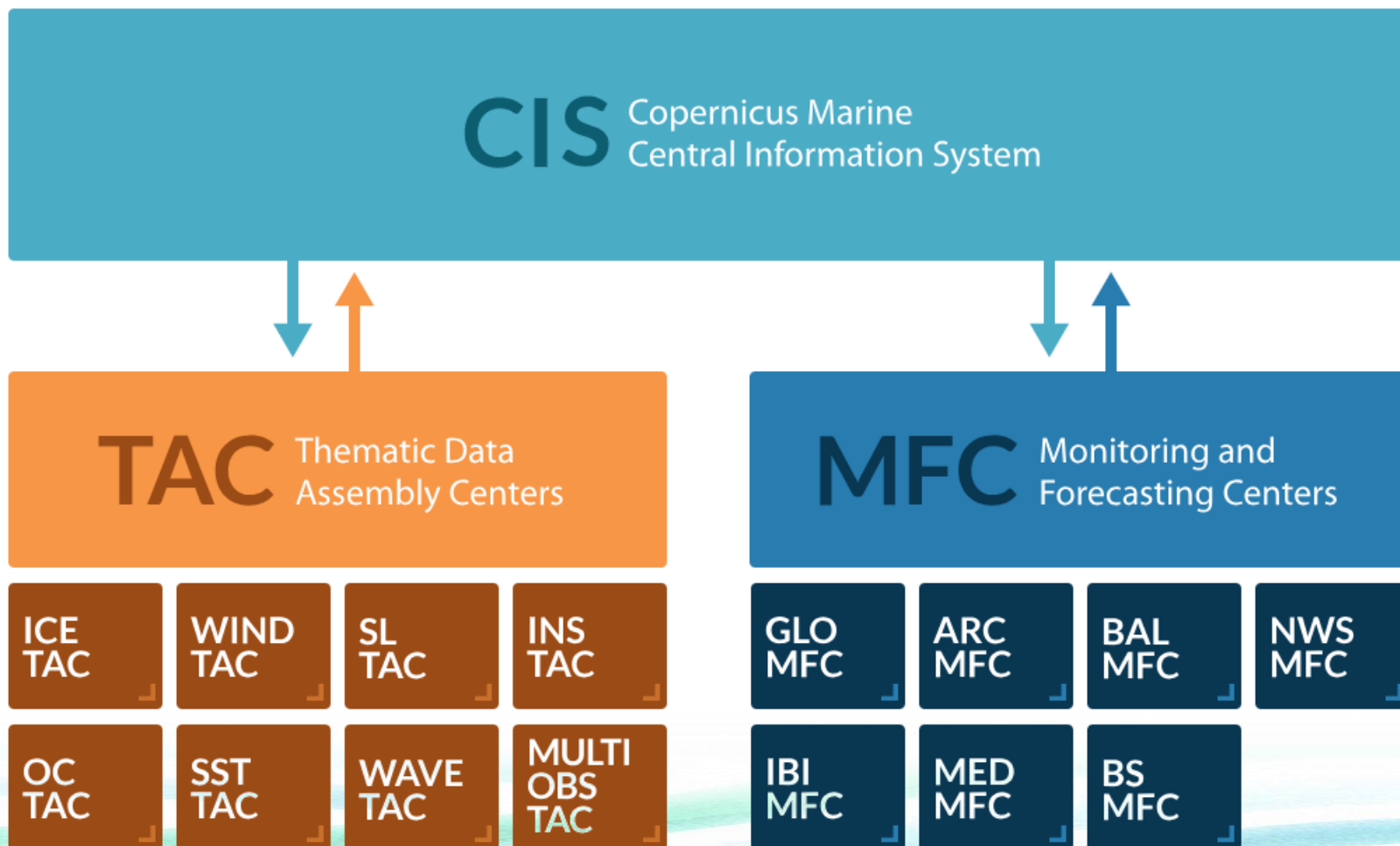
includes the ESA Sentinels

includes all data products (reanalysis, forecasts, satellite data, etc)

includes monitoring networks as buoys, drifters, gliders, etc.

CMEMS relies on a distributed architecture of:

- **8 Thematic Data Assembly Centers (TACs)** process data acquired from satellite ground segments and insitu platforms, Satellite and InSitu Observations into real-time (today) and reprocessed (20 years historic) products.,
- **8 Monitoring and Forecasting Centers (MFCs)** run ocean numerical models assimilating the above TAC data to generate reanalyse (20 years in the past), analyse (today) and 10-day forecasts of the ocean
- and a **Central Information System (CIS)**.

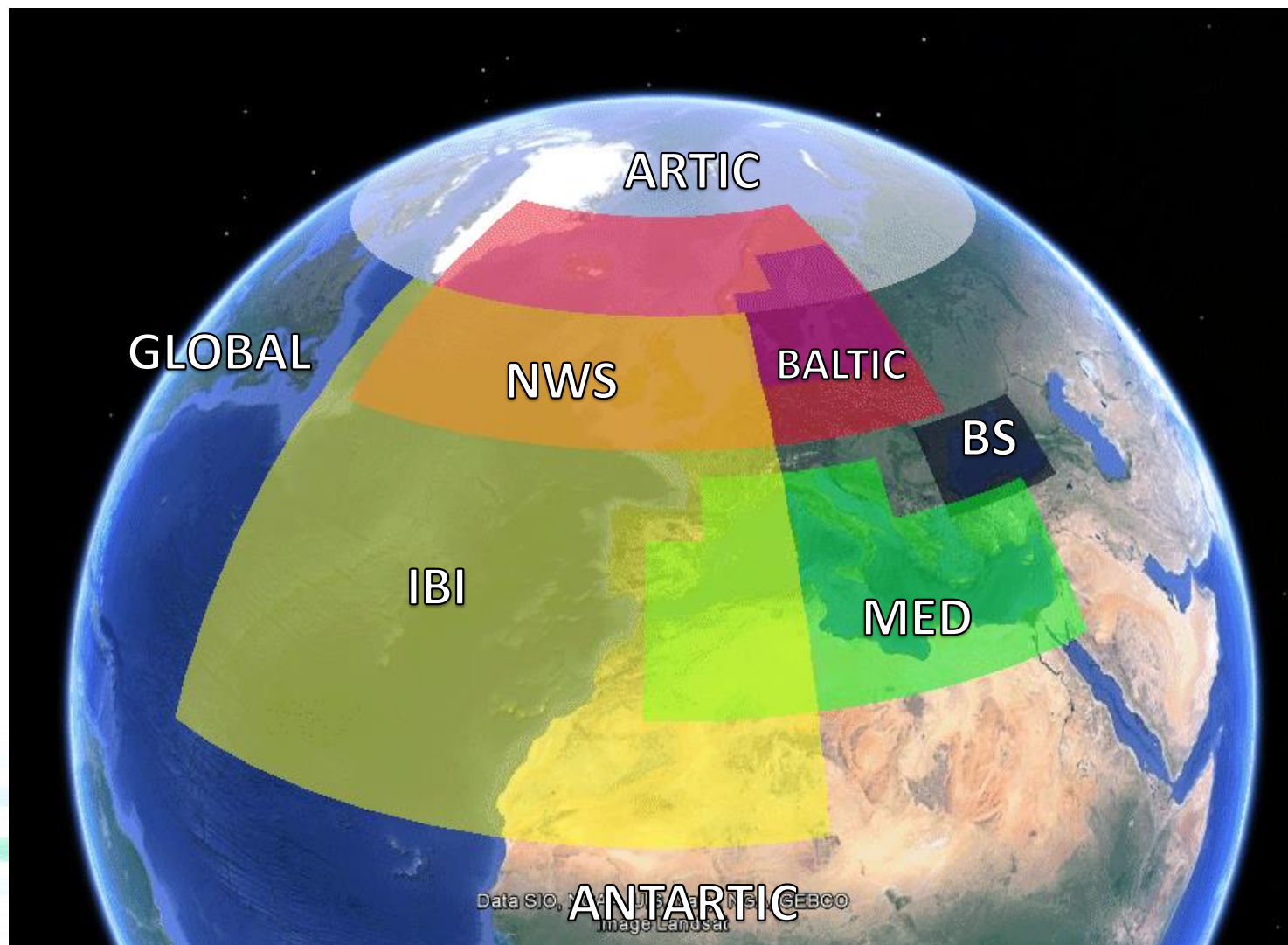


Interreg



Co-funded by
the European Union

NEXT Black Sea Basin



Interreg



Co-funded by
the European Union

NEXT Black Sea Basin



marine.copernicus.eu

Multimedia

News

Ocean Health Bulletins

Press

Events

Contact

REGISTER

Type...



English



Services

Opportunities

Access Data

Use Cases

User Corner

About

Copernicus Marine Service

Providing free and open marine data and services to enable marine policy implementation, support Blue growth and scientific innovation.

DATA

OCEAN PRODUCTS

A robust ocean data catalogue, to download or visualise data including hindcasts, nowcasts and forecasts.

EXPERTISE

OCEAN STATE REPORT

Extensive annual analysis on the state of the ocean over nearly 20 years and severe/notable annual events.

TRENDS

OCEAN CLIMATE TRENDS

Monitoring the health of the ocean.
[Ocean Monitoring Indicators](#)
[Ocean Climate Portal](#)

EXPLORATION

OCEAN VISUALISATION

Dive into our 4D digital oceans through our 3 visualisation tools for beginner, intermediate and advanced users



CMEMS Ocean State Report

Multimedia

News

Ocean Health Bulletins

Press

Events

Contact

REGISTER

Type...



English



Copernicus Marine Service

Services

Opportunities

Access Data

Use Cases

User Corner

About

Copernicus Marine Service

Providing free and open marine data and services to enable marine policy implementation, support Blue growth and scientific innovation.

DATA

OCEAN PRODUCTS

A robust ocean data catalogue, to download or visualise data including hindcasts, nowcasts and forecasts.

EXPERTISE

OCEAN STATE REPORT

Extensive annual analysis on the state of the ocean over nearly 20 years and severe/notable annual events.

TRENDS

OCEAN CLIMATE TRENDS

Monitoring the health of the ocean.
[Ocean Monitoring Indicators](#)
[Ocean Climate Portal](#)

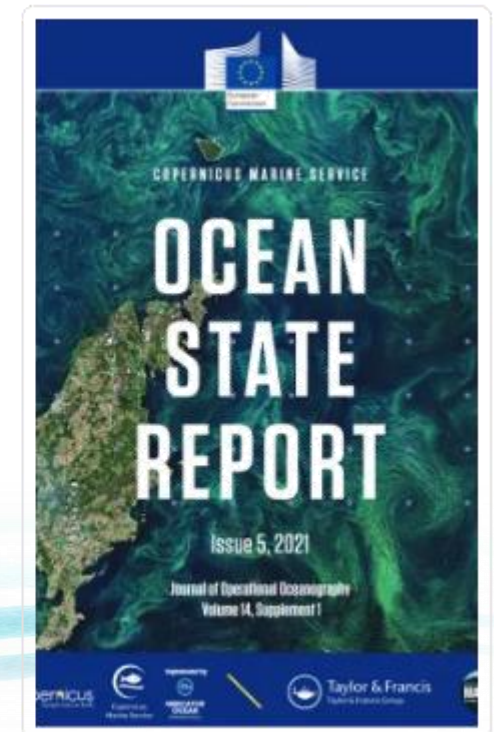
EXPLORATION

OCEAN VISUALISATION

Dive into our 4D digital oceans through our 3 visualisation tools for beginner, intermediate and advanced users

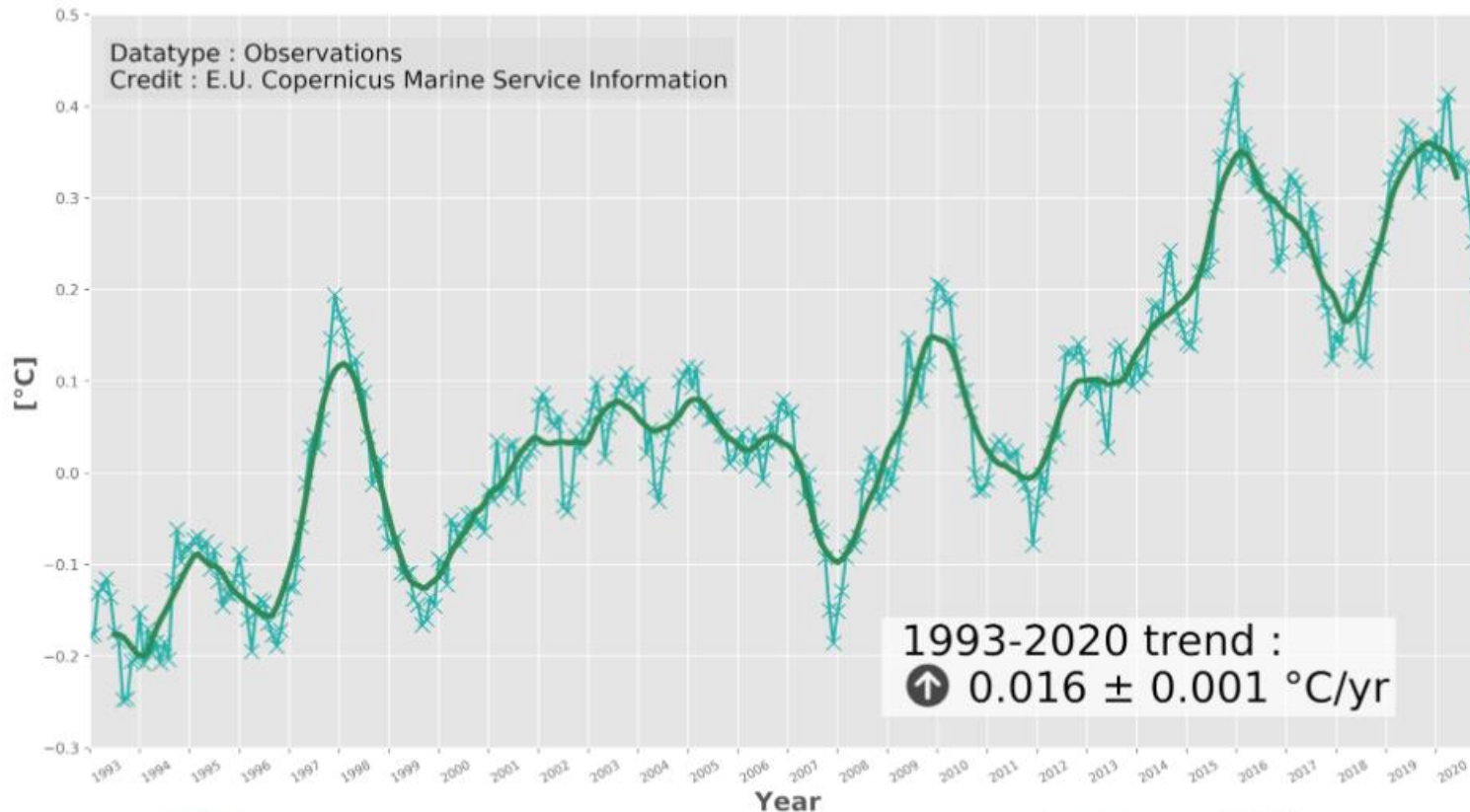
CMEMS Ocean State Report

It provides a **comprehensive assessment of the state of the global ocean and European regional seas** for the ocean scientific community as well as for policy and decision-makers.



CMEMS Ocean State Report

Global Average SST Anomalies



CMEMS Climate Trends

Multimedia

News

Ocean Health Bulletins

Press

Events

Contact

REGISTER

Type...



English



Copernicus Marine Service

Services

Opportunities

Access Data

Use Cases

User Corner

About

Copernicus Marine Service

Providing free and open marine data and services to enable marine policy implementation, support Blue growth and scientific innovation.

DATA

OCEAN PRODUCTS

A robust ocean data catalogue, to download or visualise data including hindcasts, nowcasts and forecasts.

EXPERTISE

OCEAN STATE REPORT

Extensive annual analysis on the state of the ocean over nearly 20 years and severe/notable annual events.

TRENDS

OCEAN CLIMATE TRENDS

Monitoring the health of the ocean.
[Ocean Monitoring Indicators](#)
[Ocean Climate Portal](#)

EXPLORATION

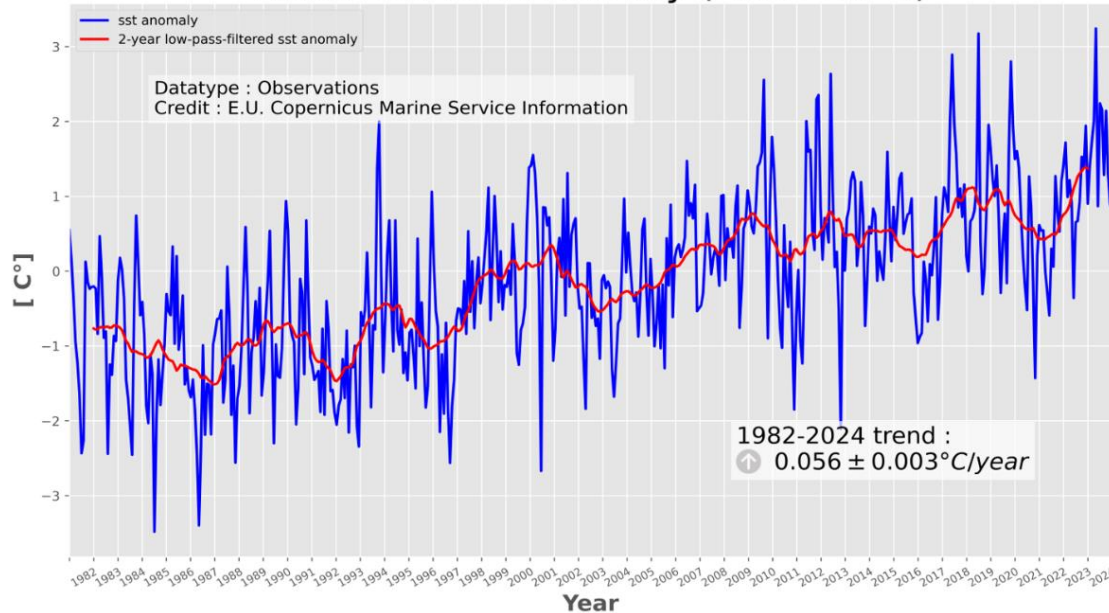
OCEAN VISUALISATION

Dive into our 4D digital oceans through our 3 visualisation tools for beginner, intermediate and advanced users

CMEMS Climate Trends

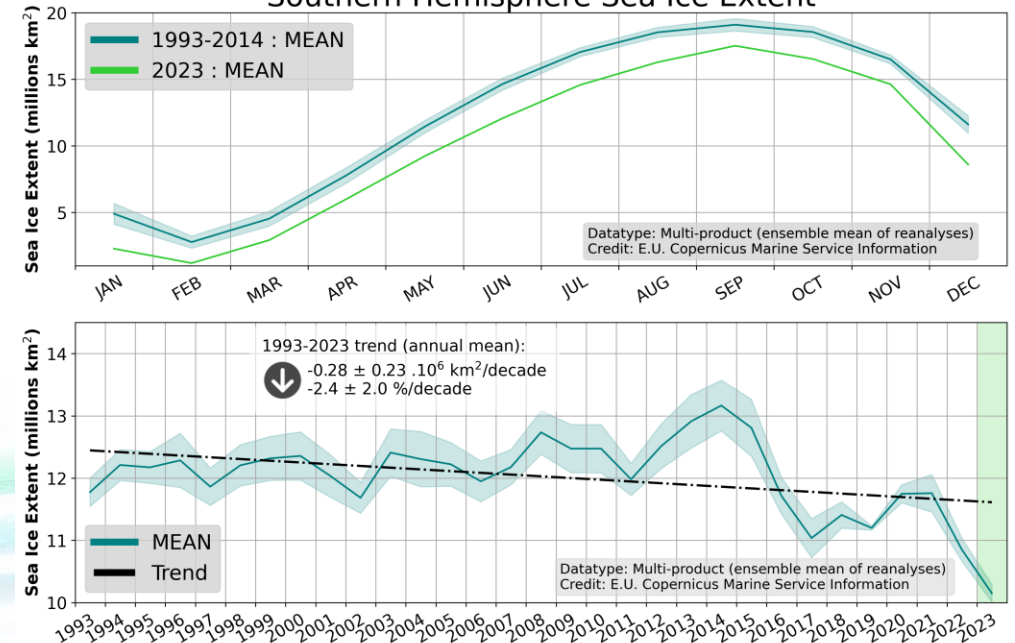
It provides downloadable trends and data sets covering the past quarter of a century. These are key variables used to track the vital health signs of the ocean and changes in line with climate change.

Black Sea SST Anomaly (1982-2024)



EfxINNOs

Southern Hemisphere Sea Ice Extent



CMEMS Ocean Products

Multimedia

News

Ocean Health Bulletins

Press

Events

Contact

→ REGISTER

Type...



English



Copernicus
Marine Service

Services

Opportunities

Access Data

Use Cases

User Corner

About

Copernicus Marine Service

Providing free and open marine data and services to enable marine policy implementation, support Blue growth and scientific innovation.

DATA

OCEAN PRODUCTS

A robust ocean data catalogue, to download or visualise data including hindcasts, nowcasts and forecasts.

EXPERTISE

OCEAN STATE REPORT

Extensive annual analysis on the state of the ocean over nearly 20 years and severe/notable annual events.

TRENDS

OCEAN CLIMATE TRENDS

Monitoring the health of the ocean.
[Ocean Monitoring Indicators](#)
[Ocean Climate Portal](#)

EXPLORATION

OCEAN VISUALISATION

Dive into our 4D digital oceans through our 3 visualisation tools for beginner, intermediate and advanced users

Interreg



Co-funded by the European Union

NEXT Black Sea Basin



CMEMS Ocean Products



Copernicus Marine Service

Services Opportunities Access Data Use Cases User Corner About

Copernicus Marine Data Store



Home > Marine Data Store

Filters

Advanced

Products 306 in Copernicus Marine Service

Main filters

Free text or ID

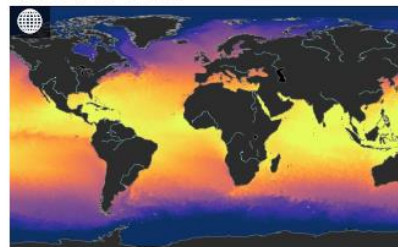
Variables

Pick one or more

Areas

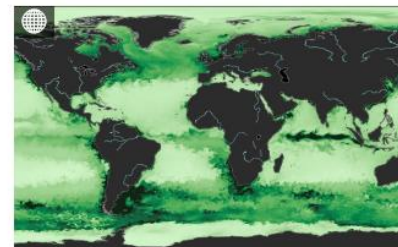
Pick one or more

MOST POPULAR



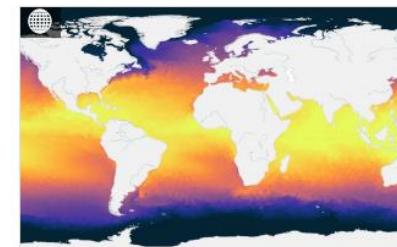
Global Ocean Physics Analysis and Forecast

GLOBAL_ANALYSISFORECAST_P... 001_024



Global Ocean Biogeochemistry Analysis and Forecast

GLOBAL_ANALYSISFORECAST_B... 001_028



Global Ocean Physics Reanalysis

GLOBAL_MULTIYEAR_PHY_001_030



Mediterranean Analysis

MEDSEA_A

CMEMS Ocean Products for the Black Sea



Copernicus Marine Service

Services Opportunities Access Data Use Cases User Corner About

Copernicus Marine Data Store



Home > Marine Data Store

Filters

Clear

Advanced

FREE-TEXT SEARCH

Free text

TIME RANGE

mm/dd/yyyy mm/dd/yyyy

Covering full interval

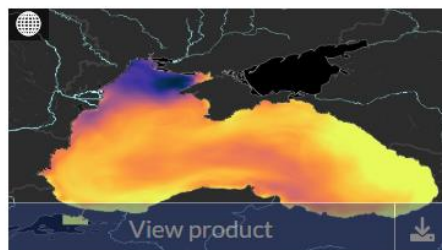
WITH DEPTH 6

DEPTH RANGE

UNIVERSE

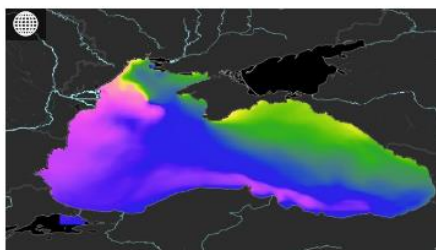
Products 55

in Copernicus Marine Service



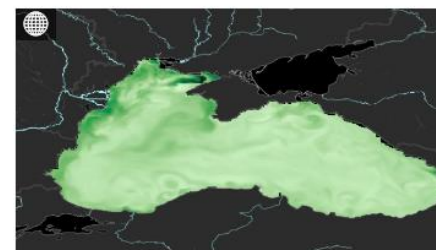
Black Sea Physics Analysis and Forecast

BLKSEA_ANALYSISFORECAST_PHY_007_001 Models



Black Sea Waves Analysis and Forecast

BLKSEA_ANALYSISFORECAST_WAV_007_003 Models



Black Sea Biogeochemistry Analysis and Forecast

BLKSEA_ANALYSISFORECAST_BGC_007_010 Models

CMEMS Ocean Products for the Black Sea

These data products are divided into:

- **Models (13 products)**
 - **Analysis and Forecast** data from numerical models
 - **Reanalysis of historic** data from assimilated numerical models
- **Insitu (12 products)**
 - **NRT** observations from on-site sensors
 - **Delayed** observations from on-site sensors
- **Satellite (31 products)**
 - **NRT** data
 - **Reprocessed** data

How to view available CMEMS parameters and data online



CMEMS Ocean Visualisation

Multimedia

News

Ocean Health Bulletins

Press

Events

Contact

→ REGISTER

Type...



English



Services

Opportunities

Access Data

Use Cases

User Corner

About

Copernicus Marine Service

Providing free and open marine data and services to enable marine policy implementation, support Blue growth and scientific innovation.

DATA

OCEAN PRODUCTS

A robust ocean data catalogue, to download or visualise data including hindcasts, nowcasts and forecasts.

EXPERTISE

OCEAN STATE REPORT

Extensive annual analysis on the state of the ocean over nearly 20 years and severe/notable annual events.

TRENDS

OCEAN CLIMATE TRENDS

Monitoring the health of the ocean.
[Ocean Monitoring Indicators](#)
[Ocean Climate Portal](#)

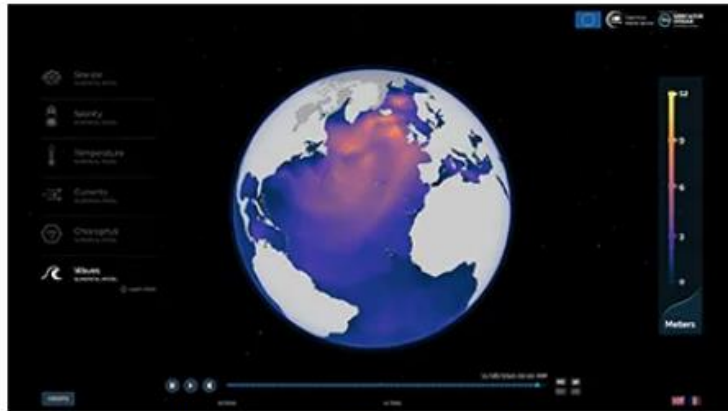
EXPLORATION

OCEAN VISUALISATION

Dive into our 4D digital oceans through our 3 visualisation tools for beginner, intermediate and advanced users

CMEMS Ocean Visualisation

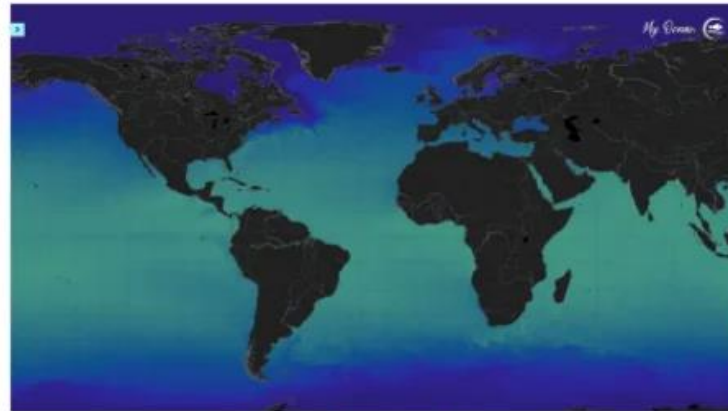
MYOCEAN LEARN
(BEGINNER) GLOBE



Understand key variables

Explore MyOcean Learn

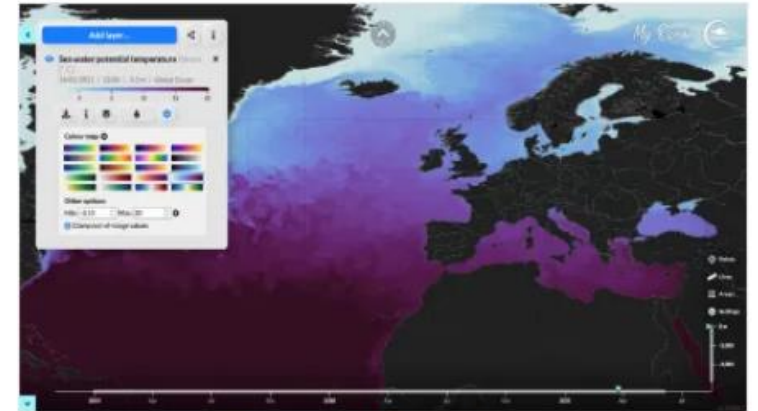
MYOCEAN LIGHT
(INTERMEDIATE) PLANISPHERE



Access key variables

Explore MyOcean Light

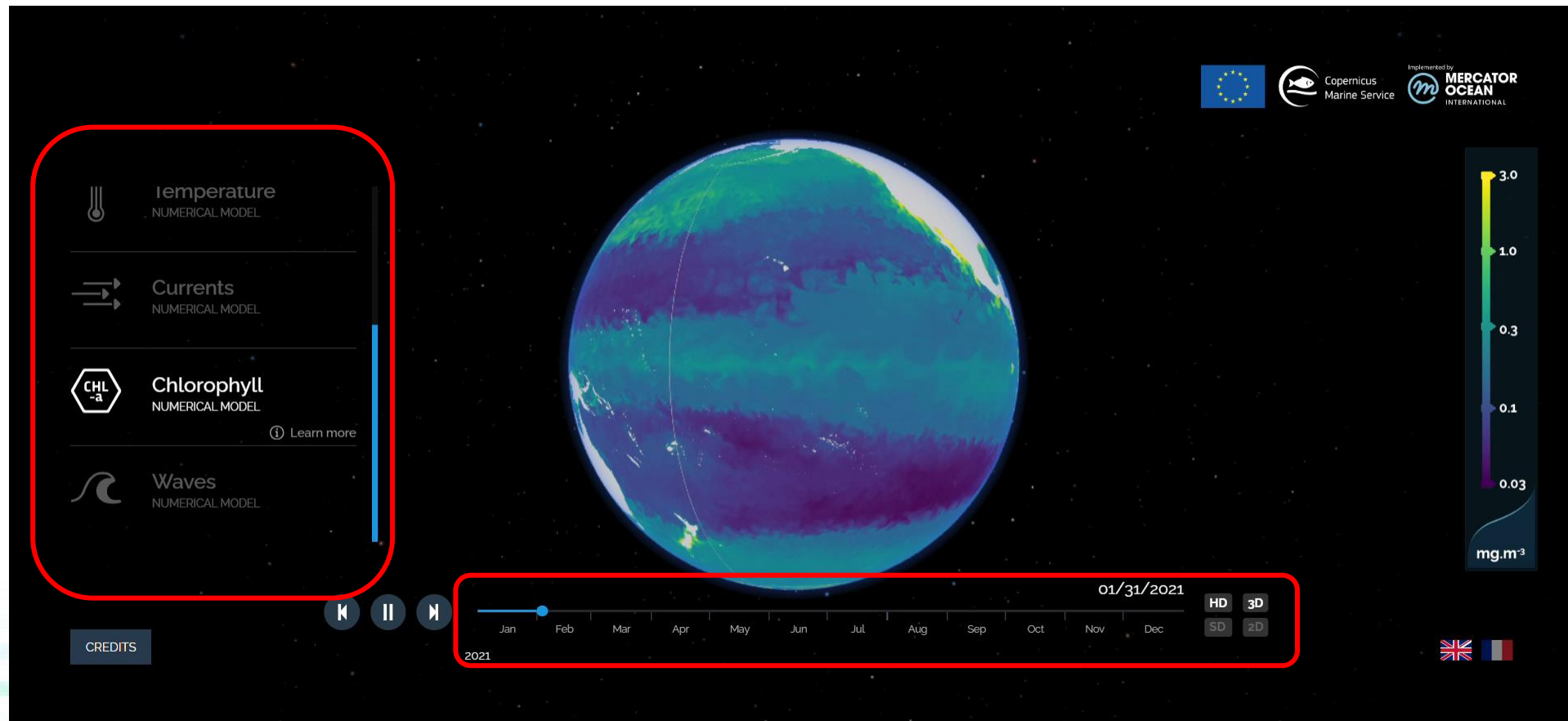
MYOCEAN PRO
(EXPERT) PLANISPHERE



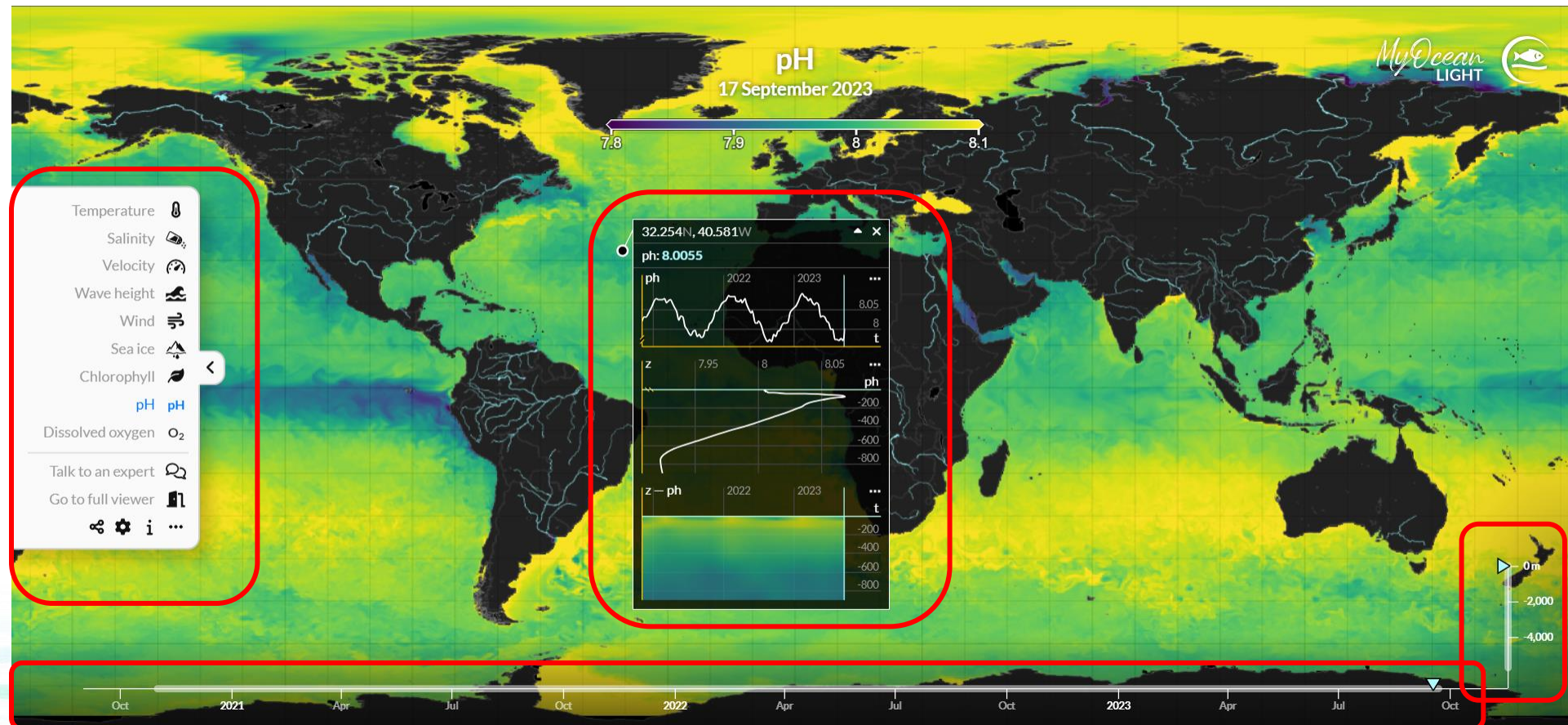
Access full catalogue

Explore MyOcean Pro

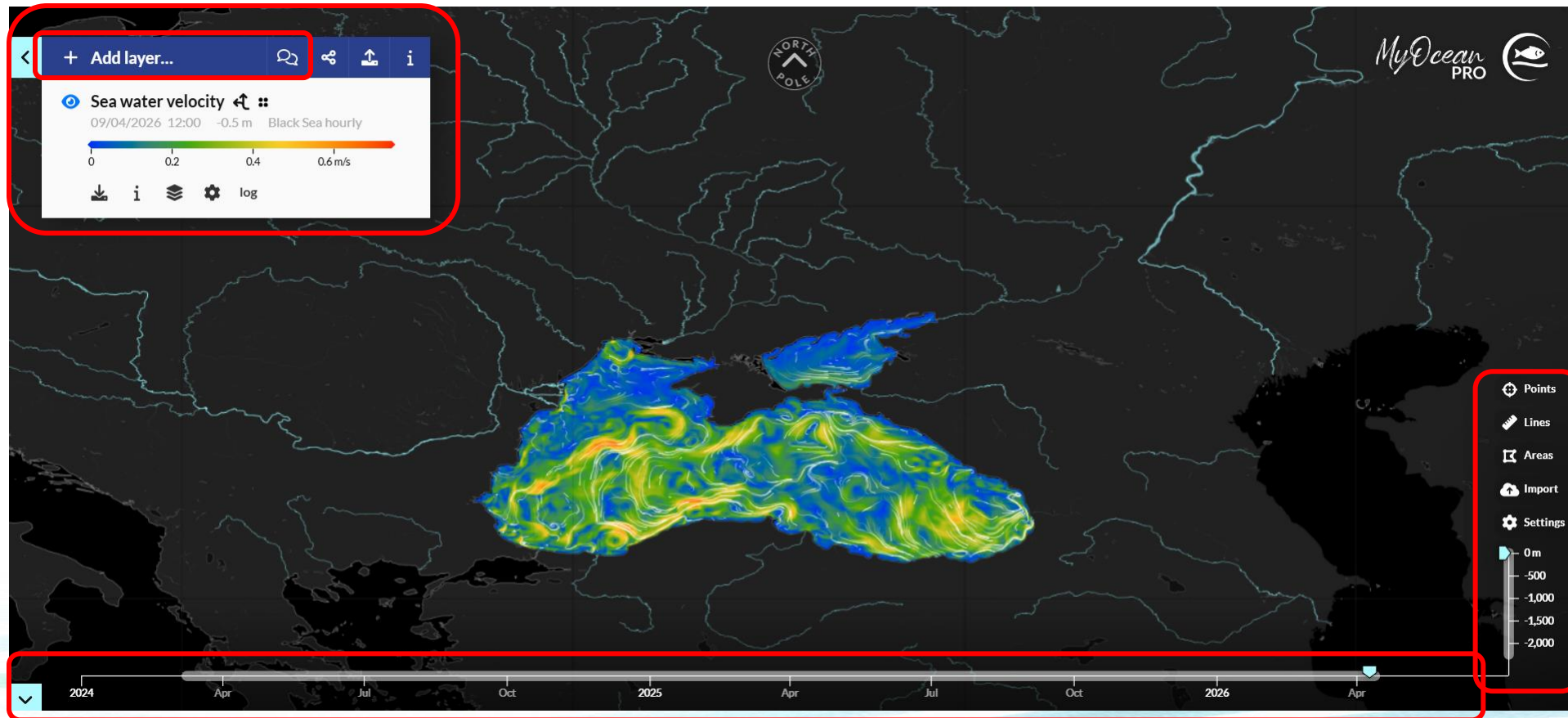
CMEMS Ocean Visualisation - MYOCEAN Learn



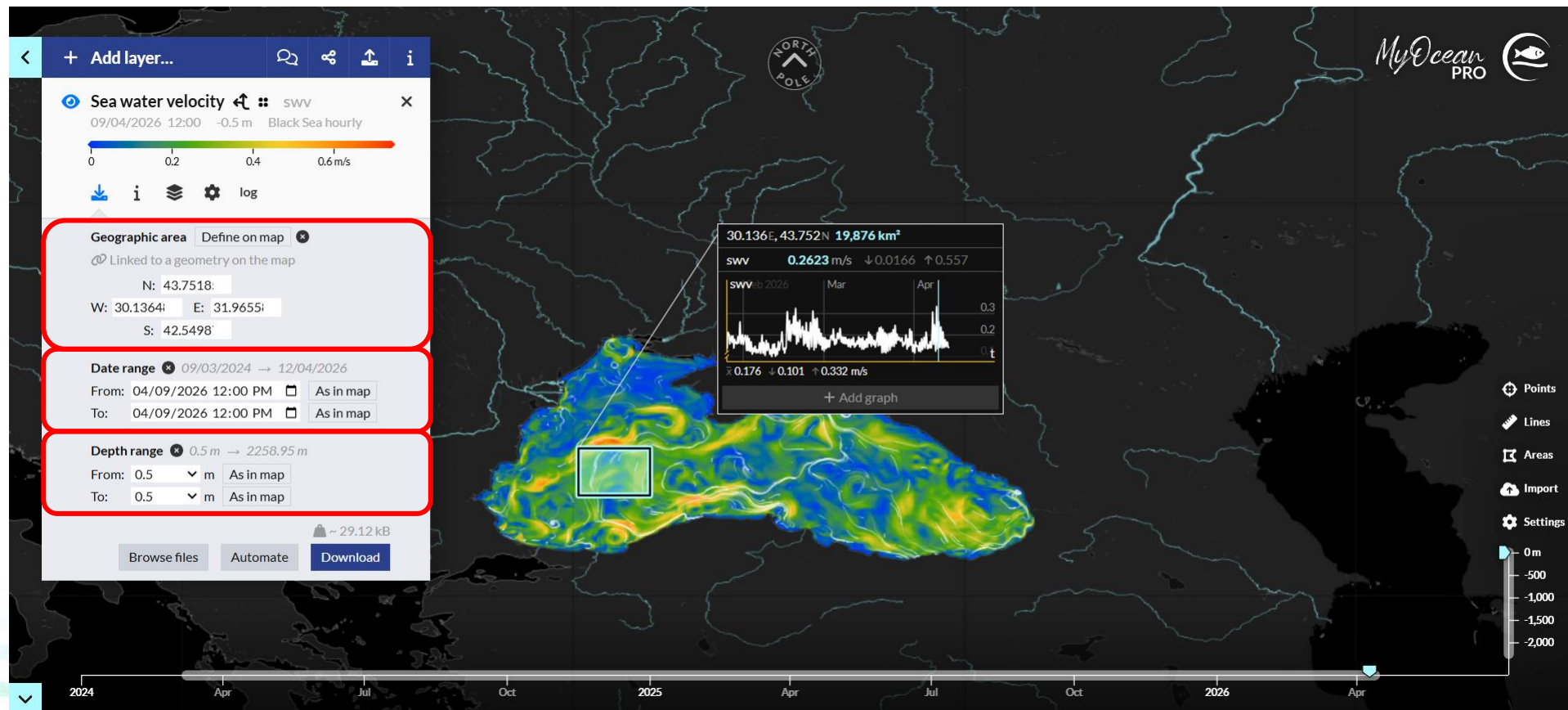
CMEMS Ocean Visualisation - MYOCEAN Lite



CMEMS Ocean Visualisation - MYOCEAN Pro



CMEMS Ocean Visualisation - Download Data



CMEMS Ocean Visualisation - Download Data - API Request

The screenshot shows the MyOcean PRO interface with a data layer for 'Sea water velocity' (swv) over the Black Sea. The 'Automate download' dialog box is open, providing instructions on how to download data programmatically using a Command-Line Interface (CLI) or Python API.

Automate download

Thanks to the new Copernicus Marine Data Store, new advanced interfaces are available. The Copernicus Marine Toolbox comprises a Command-Line Interface (CLI) tool as well as a Python Application Programming Interface (API).

Command-Line Interface
 Python API

To download this subset programmatically in CLI, run the following command:

```

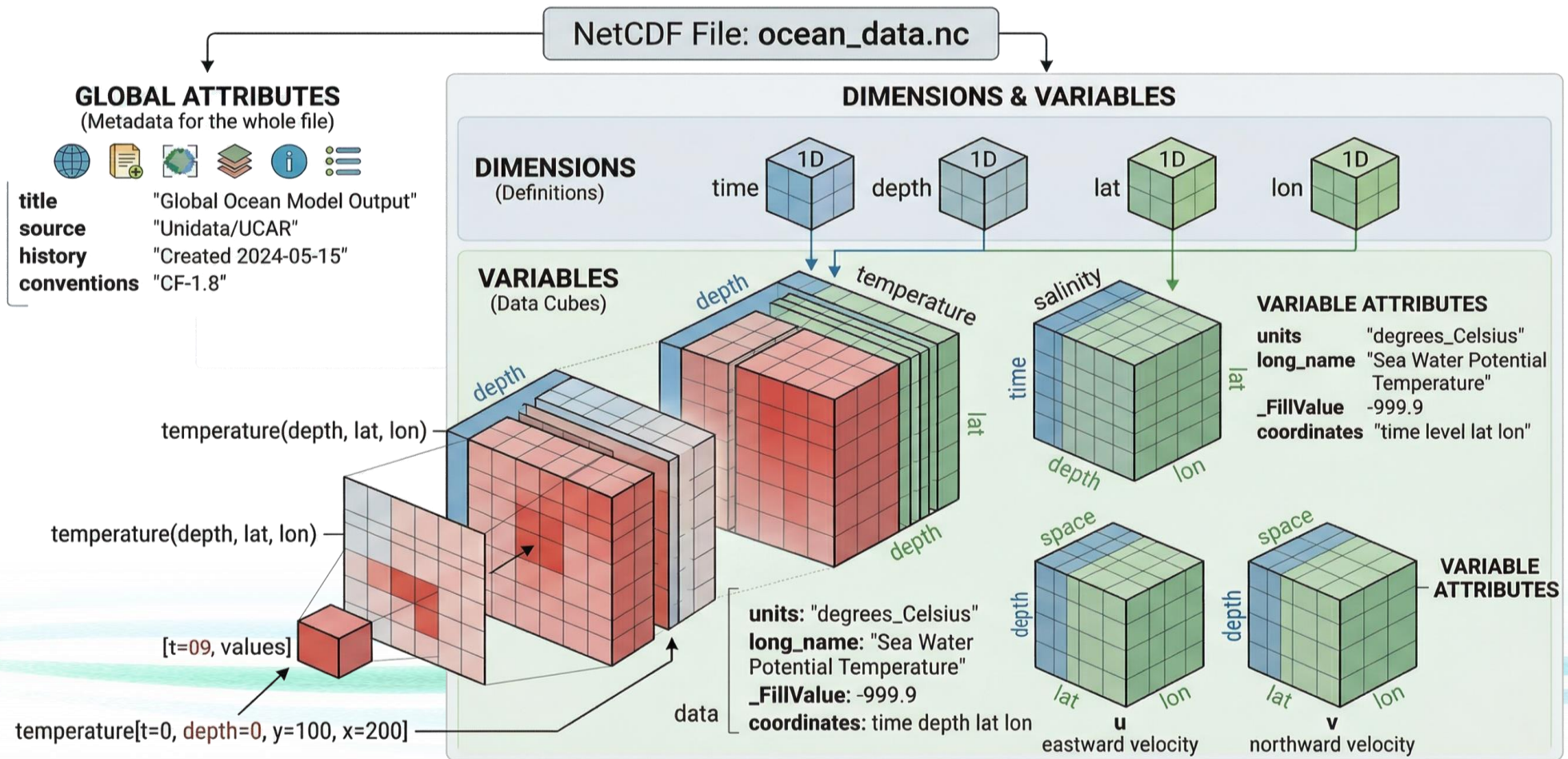
copernicusmarine subset
--dataset-id cmems_mod_blk_phy-cur_anfc_2.5km_PT1H-m
--variable uo
--variable vo
--start-datetime 2026-04-09T12:00:00
--end-datetime 2026-04-09T12:00:00
--minimum-longitude 30.13648
--maximum-longitude 31.965583
--minimum-latitude 42.549877
--maximum-latitude 43.751859
--minimum-depth 0.5001727938652039
--maximum-depth 0.5001727938652039
    
```

Show advanced options

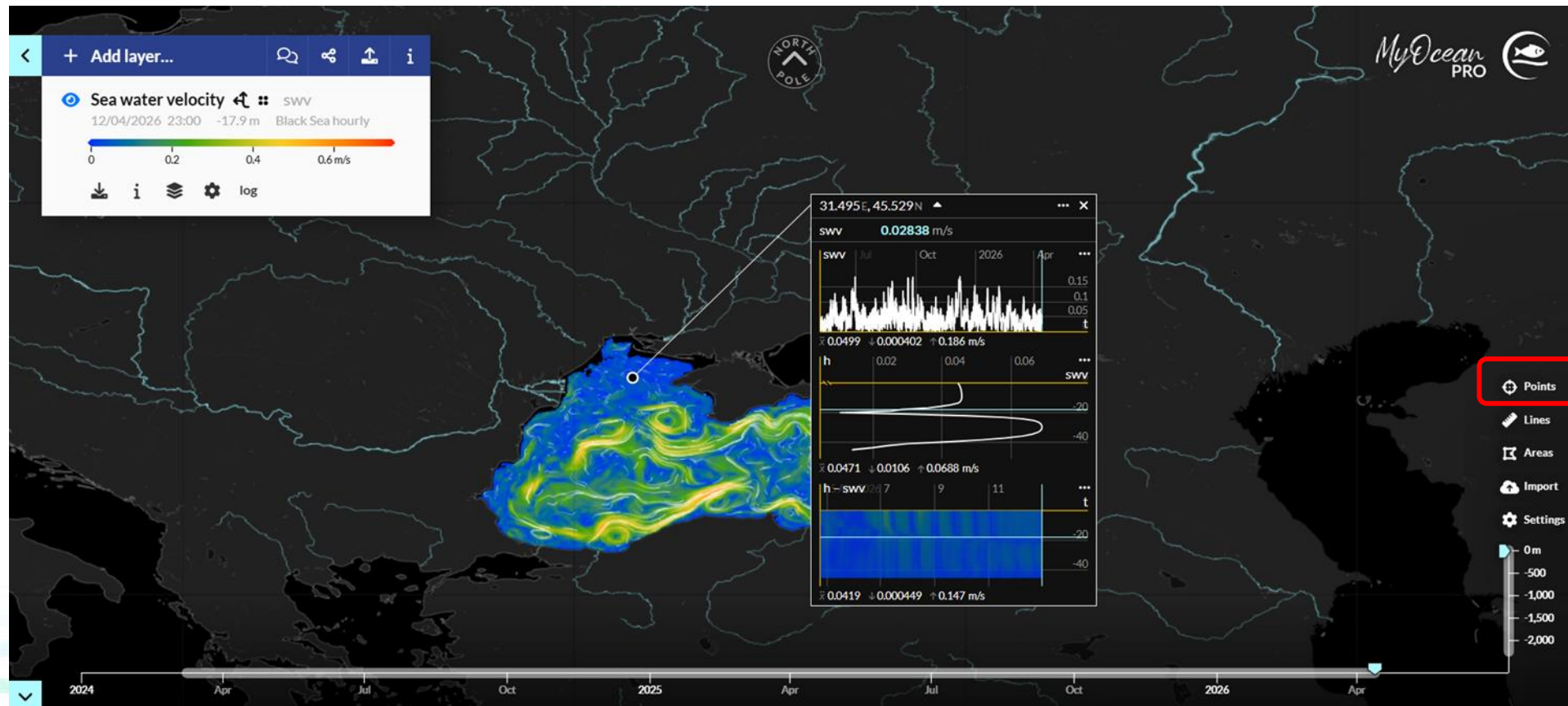
The background interface shows the following details for the 'Sea water velocity' layer:

- Geographic area:** Define on map. Linked to a geometry on the map. Coordinates: N: 43.7518, W: 30.1364, E: 31.9655, S: 42.5498.
- Date range:** 09/03/2024 → 12/04/2026. From: 04/09/2026 12:00 PM, To: 04/09/2026 12:00 PM.
- Depth range:** 0.5 m → 2258.95 m. From: 0.5 m, To: 0.5 m.
- File size:** - 29.12 kB
- Buttons:** Browse files, Automate (highlighted with a red box), Download.

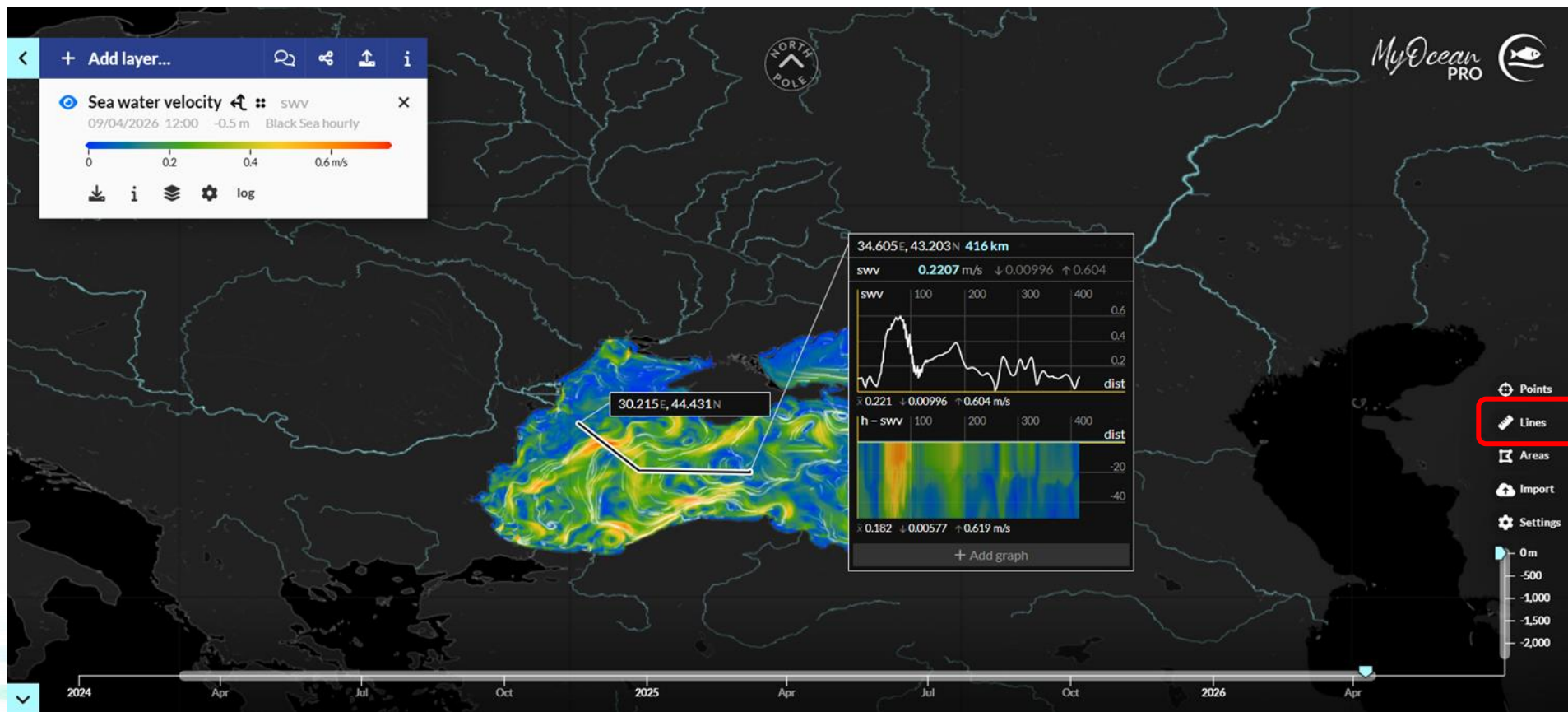
CMEMS Ocean Visualisation - Download Data - netCDF files



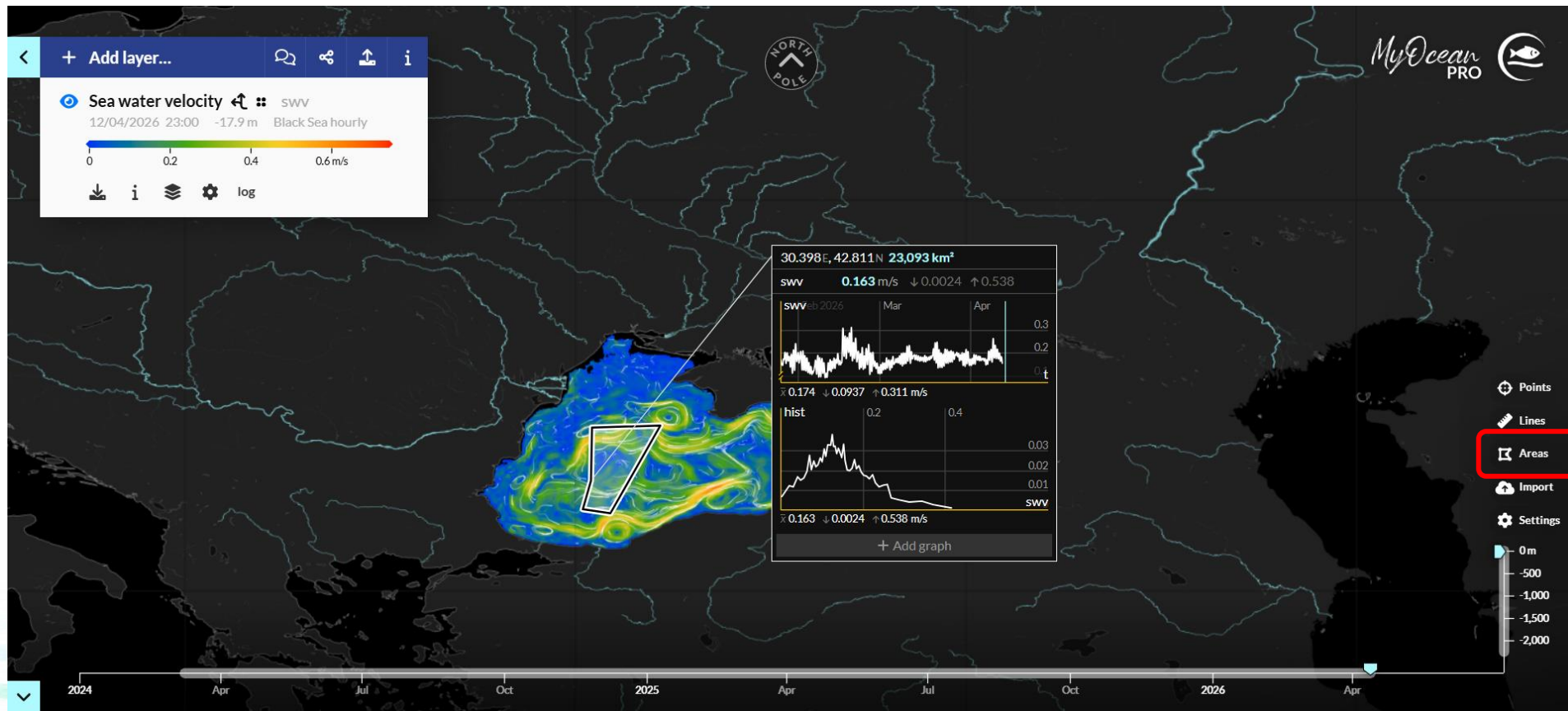
CMEMS Ocean Visualisation - Point Graph



CMEMS Ocean Visualisation - Line Graph



CMEMS Ocean Visualisation - Area Graph



CMEMS Ocean Visualisation - View Export

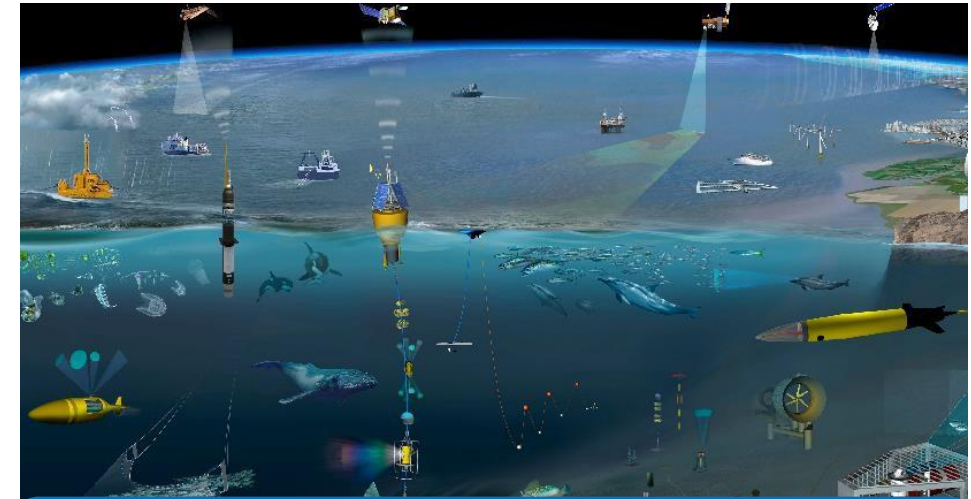
The screenshot displays the MyOcean PRO software interface. A 'Share' dialog box is open, showing options to share the visualization via Link, Image, Video, or Embed. The 'Image' option is selected. The dialog also includes checkboxes for 'Overlay', 'legend', and 't/z caption', with 'legend' and 't/z caption' checked. A 'Download' button and a 'Share' button are visible. The background shows a map of the Black Sea Basin with a color-coded sea water velocity overlay. The legend indicates a scale from 0 to 0.6 m/s. The map includes a depth scale on the right ranging from 0 m to -2,000 m. The interface also features a timeline at the bottom for navigation.

What is EMODnet?

The Challenge in marine data sharing and exchange

- **Reliable** and **accessible marine data** are key to supporting good research, and EU ocean policies, initiatives, and sustainable Blue Growth.
- The costs of marine data collection by European organizations is circa 1.4 billion Euro per year: ~ 1.0 billion for in-situ; ~ 0.4 billion for remote sensing.
- Existing marine data management infrastructures (SeaDataNet, EurOBIS, EGDI, ICES, CMEMS, and others) connected to EMODnet, already make a substantial amount of marine data **discoverable**, **accessible**, and **reusable**.
- However, still, a lot of valuable marine data **does not arrive in these infrastructures**, preventing its distribution through EMODnet and limiting its use.

Ocean Observation



In Europe, we spent circa 1.4 Billion Euro a year in marine data acquisition (1.0 BE in-situ; 0.4 BE remote sensing)

Published in Frontiers in Marine Science 2020 (source: Glynn Gorick and the NeXOS project)
Future Vision for Autonomous Ocean Observations

Interreg



Co-funded by
the European Union

NEXT Black Sea Basin



EMODnet

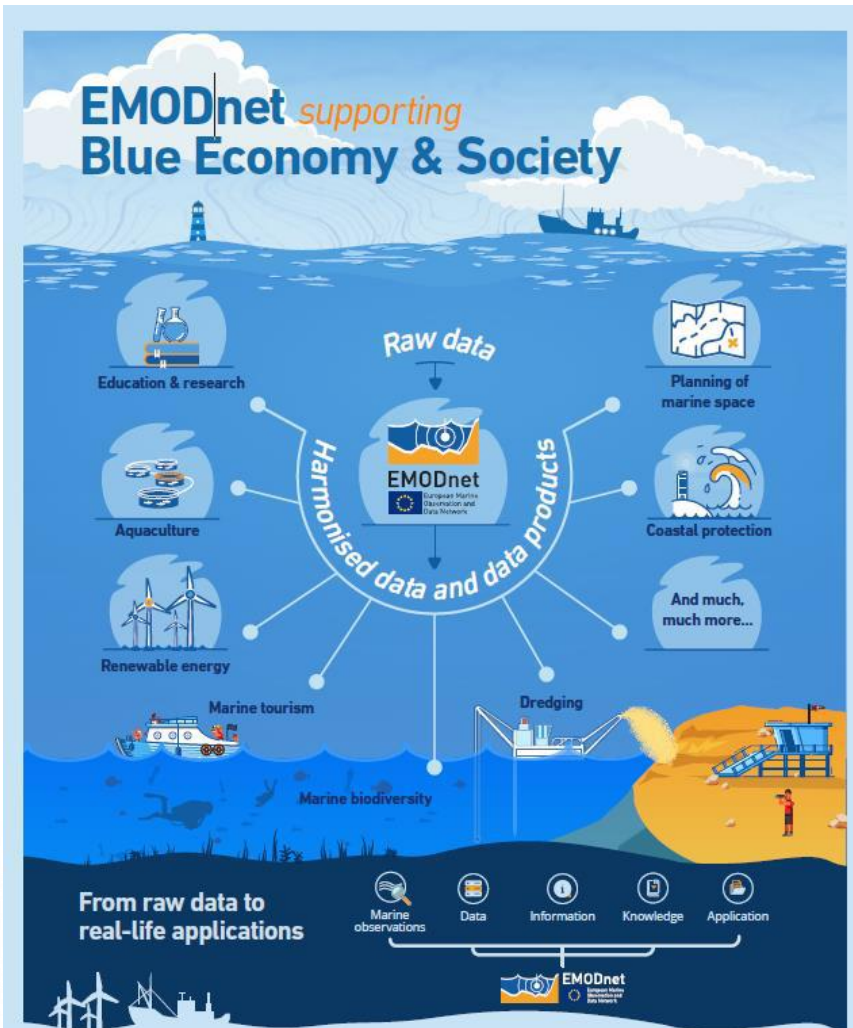


European Marine
Observation and
Data Network

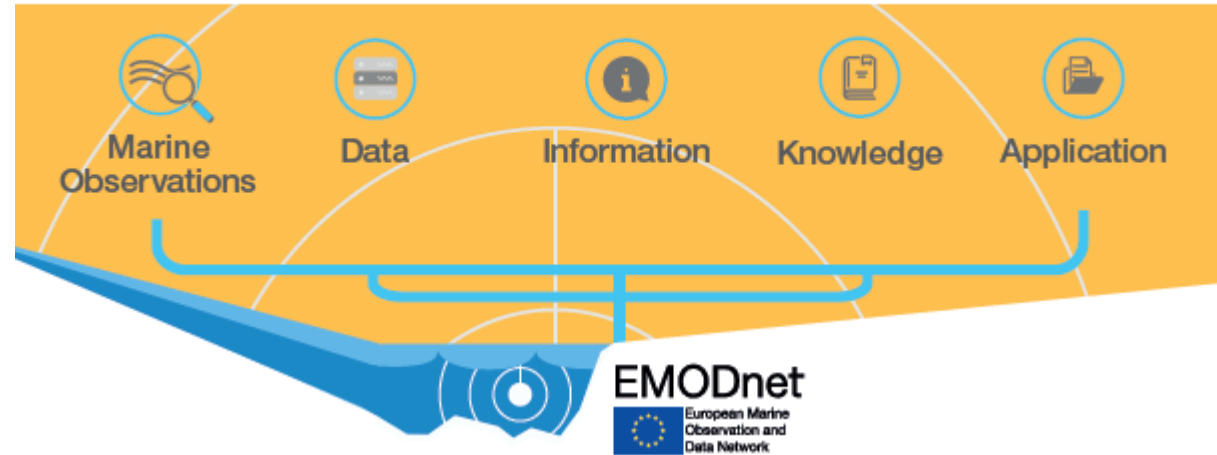
EMODnet **comes** where Copernicus **fails**

- An **EC marine data service**, funded by the European Commission 16 years ago,
- Become **European authority and regional best practice** in the marine data domain,
- **Specializes in the insitu data**, all of the ocean observations that are collected in or around the water (it can involve the seabed and below or the air just above the water),
- **Delivered by a network of > 120 leading organisations**, working in collaboration with national, regional and EU marine data management initiatives and infrastructures;
- It is a **key marine knowledge initiative** working with Copernicus Marine Service **provides the back-bone for the European marine data space**, the European Digital Twin Ocean and a key contributor to the Global Ocean Data Ecosystem and digital commons.

EMODnet – Added Value



From raw data to real-life applications



Offers:

- FAIR pan European data
- data products like maps, High Res. DTMs that can be used anywhere
- Collect data once, use many times.
- Assemble, standardise, harmonise, quality control, integrate.
- Visualize and make data come alive.
- reduce uncertainty;
- increase productivity and cost effectiveness;
- add value and impact to your data;
- stimulate innovation.

EMODnet themes-portals

Until recently EMODnet provided access to European marine data across **7 discipline-based themes-portals**:

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

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

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

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

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

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

COASTAL MAPPING
Data on coastal areas across Europe, especially bathymetry and coastal mapping.

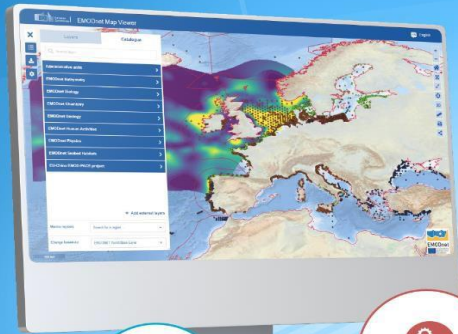
HUMAN ACTIVITIES
Data on the intensity and spatial extent of human activities at sea.

One single portal

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

One central map viewer

to visualise all EMODnet data



BATHYMETRY



HUMAN ACTIVITIES



PHYSICS



GEOLOGY



SEABED HABITATS



CHEMISTRY



BIOLOGY

1 OCEAN 1 EMODnet

One single portal

140 partners

One central metadata catalogue

to enhance data search and discovery

+100 use cases

Discover, visualise and download marine data and products across 7 thematic and hundreds of parameters

EMODNET.EC.EUROPA.EU



One central map viewer

EMODnet Map Viewer

EN English

Layers Catalogue

Search layer

- Administrative units >
- EMODnet Bathymetry >
- EMODnet Biology >
- EMODnet Chemistry >
- EMODnet Geology >
- EMODnet Human Activities >
- EMODnet Physics >
- EMODnet Seabed Habitats >
- EU-China EMOD-PACE project >

+ Add external layers

Marine regions: Search for a region ...

Change basemap: EMODNET World Base Layer

200 km

EMODnet European Marine Observation and Data Network



EMODnet Map Viewer

EN English

Legend

Wind Farms (polygons)

- Approved
- Dismantled
- Planned
- Production
- Under Construction
- Test site

Mean depth in multi colour (no land)

- 8000 m
- 3500 m
- 2000 m
- 1000 m
- 450 m
- 150 m
- 50 m
- 10 m

200 km

-4.90610, 58.76724

EMODnet European Marine Observation and Data Network

One central metadata catalogue

EMODnet Product Catalogue

Search ...

English

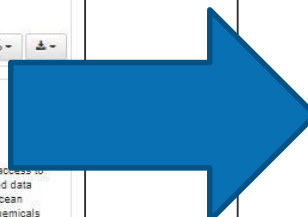
Nothing in basket

Filter

- TYPE OF RESOURCES
 - Dataset (670)
 - Series (19)
- AVAILABLE ACTIONS
 - Viewable (463)
 - Downloadable (58)
- TOPICS
 - Environment (568)
 - Biota (203)
 - Oceans (66)
 - Geoscientific information (25)
 - Imagery base maps earth cover (2)
 - 2 more
- KEYWORDS
 - Environment (568)
 - Habitats and biotopes (538)
 - Metadata GDI-VI-conform (528)
 - Marine habitat mapping (278)
 - Biota (203)
 - 10 more
- CONTACT FOR THE RESOURCE
 - Hellenic Centre for Marine Rese... (132)
 - Hellenic National Oceanographic... (131)
 - National Parks and Wildlife Service (79)
 - Joint Nature Conservation Commi... (55)
 - EMODnet Seabed Habitats (43)
 - 20 more
- PROVIDED BY
 - EMODnet Seabed Habitats (584)
 - EMODnet Chemistry (19)
 - EMODnet Human Activities (6)
- YEARS
 - 2022 (5)
 - 2021 (15)
 - 2019 (16)
 - 2018 (10)
 - 2017 (27)
 - 10 more
- FORMATS

Search results grid:

- North East Atlantic Ocean - Contaminants aggregated datasets 1970/2017 v2018
- North Sea - Contaminants aggregated datasets 1970/2017 v2018
- Black Sea - Contaminants aggregated datasets 1974/2017 v2018
- Baltic Sea - Contaminants aggregated datasets 1972/2017 v2018
- Mediterranean Sea - Contaminants aggregated datasets 1974/2017 v2018
- Habitat Map of "Capo Milazzo" marine protected area



EMODnet Product Catalogue

Search ...

English

Back to search

Previous Next

Download

Display mode

North Sea - Contaminants aggregated datasets 1959/2019 v2021

EMODnet Chemistry aims to provide access to marine chemistry data sets and derived data products concerning eutrophication, ocean acidification and contaminants. The chemicals chosen reflect importance to the Marine Strategy Framework Directive (MSFD). This regional aggregated dataset contains all unrestricted EMODnet Chemistry data on contaminants, and covers the North Sea with 34978 CDI records divided per matrices: 1460 biota, 24740 water profiles, 8000 sediment profiles and 261 sediment time series. For water, the temporal range is from 1959-10-03 to 2019-12-30. For sediment, the temporal range is from 1970-07-11 to 2019-12-18 for profile data and from 1993-09-16 to 2015-06-15 for the time series. For biota, the temporal range is from 1979-02-26 to 2018-02-28. Data were aggregated and quality controlled by Aarhus University, Department of Bioscience, Marine Ecology Roskilde from Denmark. Regional datasets concerning contaminants are automatically harvested. Parameter names in these datasets are based on P01, BODC Parameter Usage Vocabulary, which is available at: https://seadatanet.maris2.nl/bandit/browse_step.php. Each measurement value has a quality flag indicator. The resulting data collections for each Sea Basin are harmonised, and the collections are quality controlled by EMODnet Chemistry Regional Leaders using ODV Software and following a common methodology for all Sea Regions. Harmonisation means that: (1) unit conversion is carried out to express contaminant concentrations with a limited set of measurement units (according to EU directives 2013/39/UE; Comm. Dec. EU 2017/848) and (2) merging of variables described by different "local names", but corresponding exactly to the same concepts in BODC P01 vocabulary. Detailed documentation is available at: <https://doi.org/10.8092/8b52e8d7-dc02-4305-9337-7934a5cae3f4> Explore and extract data at: <https://emodnet-chemistry.webodv.awi.de/contaminants%3ENorthSea> The harmonised dataset can also be downloaded as ODV spreadsheet (TXT file), which is composed of metadata header followed by tab separated values. This worksheet can be imported to ODV Software for visualisation (More information can be found at: <https://www.seadatanet.org/Software/ODV>). The same dataset is offered also as XLSX file in a long/vertical format, in which each P01 measurement is a record line. Additionally, there are a series of columns that split P01 terms in subcomponents (measure, substance, CAS number, matrix...). This transposed format is more adapted to worksheet applications users (e.g. LibreOffice Calc). The original datasets can be searched and downloaded from EMODnet Chemistry Download Service: <https://emodnet-chemistry.maris.nl/search>

Overviews

Water

Sediment timeseries

Sediment profiles

Biota

Identification Content ReferenceSystem Quality DomainConsistency

Distribution format **Ziped file (ODV spreadsheet and transposed spreadsheet) (Version: 1.0)**

Distributor

Organisation name	National Institute of Oceanography and Applied Geophysics - OGS, Division of Oceanography
Delivery point	Borgo Grotta Gigante 42/c
City	Sgonico (Trieste)
Postal code	34010
Country	Italy
Electronic mail address	nod@ogs.trieste.it
Linkage	http://www.ogs.trieste.it/
Role	Distributor: Party who distributes the resource



EMODnet Geonetwork

<https://emodnet.ec.europa.eu/geonetwork/>

European Marine Observation and Data Network (EMODnet)

About ▾ Data Services ▾ Solutions ▾ Themes ▾ Community Pages ▾ Atlas of the Seas ▾ EU-China ▾ News & Events ▾ FAQ Downloads

Home > Data Services > Products Catalogue

EMODnet Product Catalogue English ▾

Search **2443** data sets, services and maps, ...

Browse by topics

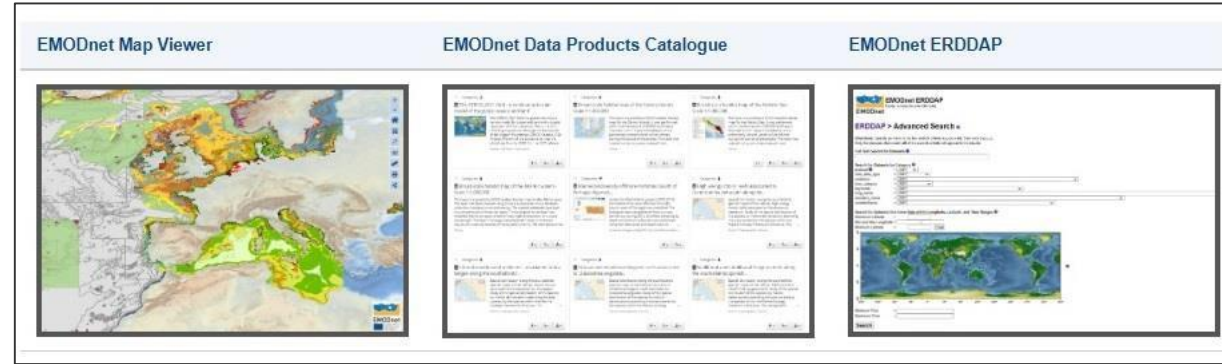
- Oceans ¹²⁷³
- Elevation ¹⁹⁹
- Utilities communication ¹⁷
- Biota ⁶¹⁶
- Geoscientific information ¹⁶⁶
- Location ¹⁴
- Environment ⁵⁹¹
- Boundaries ⁵⁴
- Economy ⁶

Browse resources

- Dataset ²¹²²
- Series ²⁷⁶
- Service ⁶³

Integrated data services

Data Services directly accessible
from EMODnet landing page



EMODnet Map Viewer interface showing layers and map data.

- Layers: Administrative units, EMODnet Bathymetry, Coastlines, Data quality, Depth, DTM Tiles.
- Depth options: Bathymetric contours, Mean depth in multi colour (no land), Mean depth natural colour (with land), Mean depth rainbow colour (no land), High Resolution bathymetry.
- DTM Tiles: Tile structure and download.



ERDDAP server @ EMODnet interface showing the 'Make A Graph' configuration page.

Dataset Title: **EMODNET Bathymetry DTM 2020 full**

Institution: VLIZ (Dataset ID: dtm_2020_v2_e0bf_e7e4_5b8f)

Information: Summary | License | FGDC | ISO 19115 | Metadata | Background | Data Access Form | Files

Graph Type: surface

X Axis: longitude

Y Axis: latitude

Color: elevation

Dimensions: latitude (degrees_north) Start: 15.000520833333335 Stop: 89.99947916665815

longitude (degrees_east) Start: -35.99947916666667 Stop: 42.999479166657686

Graph Settings: Color Bar, Continuity, Scale, Minimum, Maximum, N Sections, Draw land mask, Y Axis Minimum, Maximum, Ascending

Redraw the Graph (Please be patient. It may take a while to get the data.)

Optional: Then set the File Type: .nc (File Type information) and Download the Data or an Image or view the URL: https://erddap.emodnet.eu/erddap/griddap/dtm_2020_v2_e0bf_e7e4_5bf (Documentation / Bypass this form)

EMODnet Web Services

List of the base url's of all thematic portals:

- Ⓞ **Bathymetry** <https://ows.emodnet-bathymetry.eu/ows>
- Ⓞ **Biology** <https://geo.vliz.be/geoserver/Emodnetbio/ows>
- Ⓞ **Chemistry** https://geo-service.maris.nl/emodnet_chemistry/ows
- Ⓞ **Geology** <https://drive.emodnet-geology.eu/geoserver/EMODnetGeology/ows>
- Ⓞ **Human Activities** <http://www.emodnet-humanactivities.eu/geoserver/emodnet/ows>
- Ⓞ **Physics** <https://prod-geoserver.emodnet-physics.eu/geoserver/emodnet/ows>
- Ⓞ **Seabed Habitats** https://ows.emodnet-seabedhabitats.eu/geoserver/emodnet_view/ows

<https://emodnet.ec.europa.eu/en/emodnet-web-service-documentation>

WMS

GetCapabilities
GetMap
Getfeatureinfo

WFS

GetCapabilities
DescribeFeatureType
GetFeature

WCS

GetCapabilities
DescribeCoverage
GetCoverage

Black Sea - Bathymetry

The screenshot displays the EMODnet Map Viewer interface. At the top, the European Commission logo and the text "EMODnet Map Viewer" are visible on the left, and a "Help" link is on the right. The main map area shows a bathymetric map of the Black Sea, with colors ranging from blue (deep) to red (shallow). A left-hand panel is open, showing a "Layers" and "Catalogue" section. Under "EMODnet Bathymetry", several options are listed with checkboxes: "DTM Tiles", "Depth", "Bathymetric contours", "High Resolution bathymetry", "Mean depth natural colour (with land)", "Mean depth in multi colour (no land)", and "Mean depth rainbow colour (no land)". The "Mean depth rainbow colour (no land)" option is checked. Below this, there are sections for "Source metadata", "Topography", and "Data quality". At the bottom of the panel, there are dropdown menus for "Marine regions" (set to "Search for a region ...") and "Change basemap" (set to "EMODNET World Base Layer"). A "200 km" scale bar and coordinates "28.64720, 44.77896" are visible at the bottom left. On the right side of the map, there is a vertical toolbar with icons for zooming, home, full screen, pan, location, 3D, and sharing. The EMODnet logo is also present in the bottom right corner of the map area.

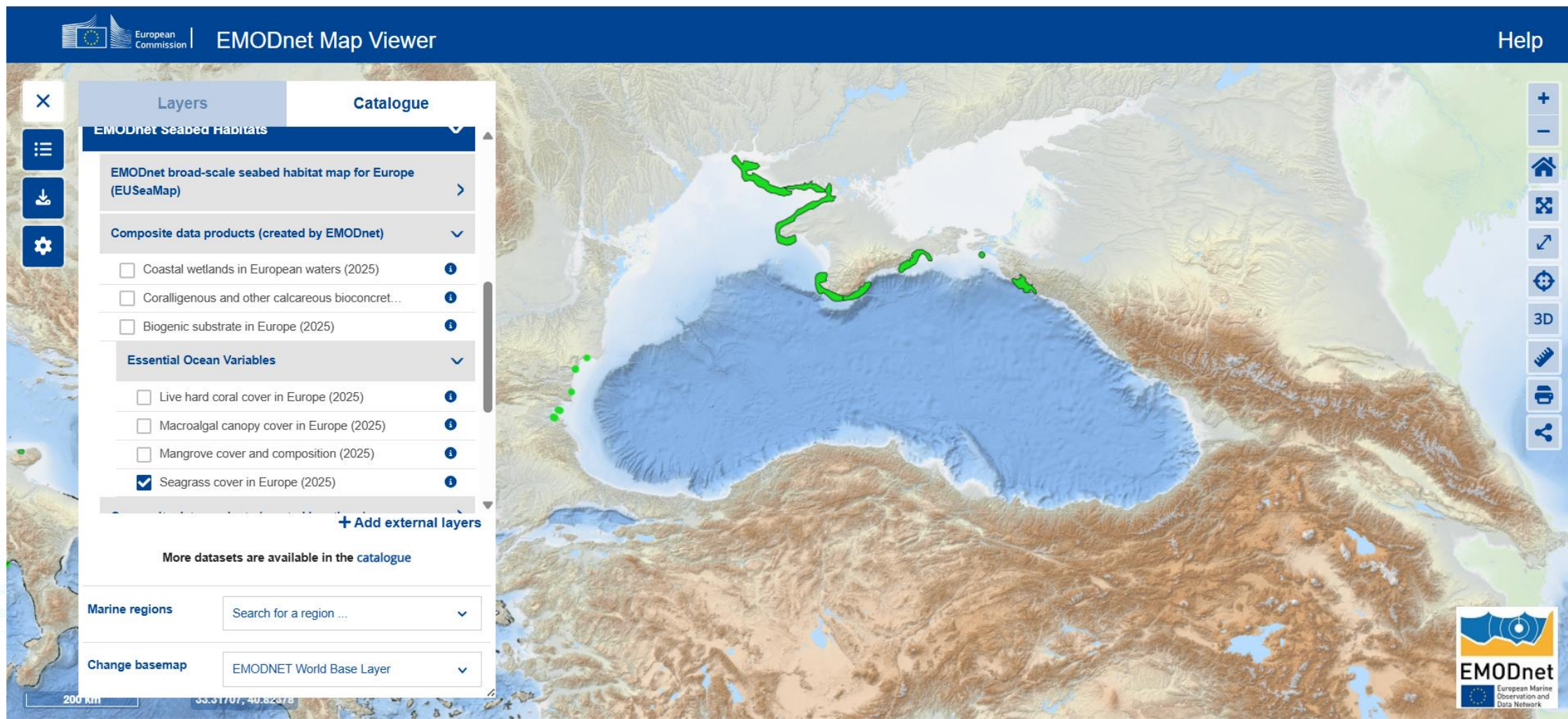
Black Sea – Seabed Habitats

The screenshot displays the EMODnet Map Viewer interface. The main map shows the Black Sea region with seabed habitats overlaid in various colors (green, yellow, orange, red). The interface includes a top navigation bar with the European Commission logo, the text "EMODnet Map Viewer", and a "Help" link. On the left, there is a "Layers" panel with a search icon, a list of layers, and a settings icon. The "Layers" panel is currently expanded to show the "EMODnet Seabed Habitats" section. Under this section, there is a sub-section for "EMODnet broad-scale seabed habitat map for Europe (EUSeaMap)" with a dropdown arrow. Below this, there is a list of habitat types with checkboxes and information icons:

- EUSeaMap (2025) habitat types (EUNIS 2007/...)
- EUSeaMap (2025) habitat types (EUNIS 2019)
- EUSeaMap (2025) habitat types (MSFD benthic...)
- EUSeaMap (2025) habitat types (Barcelona C...)
- EUSeaMap (2025) habitat types (HELCOM Un...)
- Caribbean SeaMap (2025) habitat types (EUS...)
- Caspian SeaMap (2025) habitat types (EUSea...)

Below the list, there is a "+ Add external layers" button and a note: "More datasets are available in the catalogue". At the bottom of the panel, there are two dropdown menus: "Marine regions" with a search box "Search for a region ..." and "Change basemap" with "EMODNET World Base Layer" selected. On the right side of the map, there is a vertical toolbar with icons for zooming, home, full screen, pan, location, 3D, and other map controls. A scale bar at the bottom left indicates 200 km. The EMODnet logo is visible in the bottom right corner of the map area.

Black Sea – Seagrass cover



EMODnet Ingestion Ambassadors

Network of 50 National Data Centres, specialized marine centres, and all EMODnet thematic coordinators ensuring provision of trustable data and products.

BATHYMETRY



BIOLOGY



CHEMISTRY



GEOLOGY



HUMAN ACTIVITIES



PHYSICS

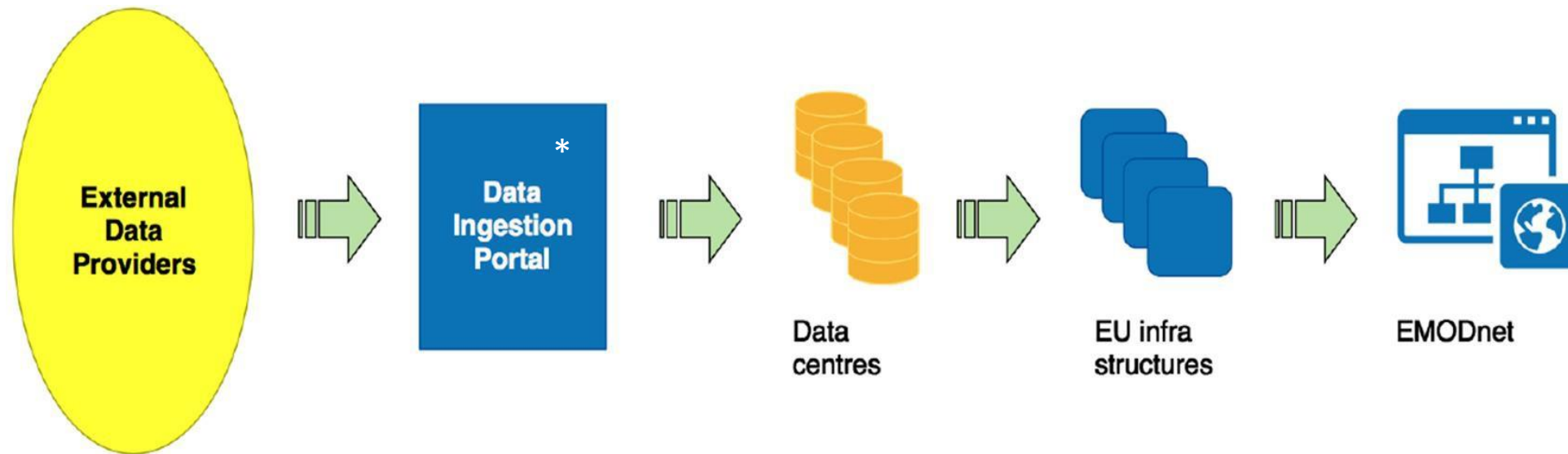


SEABED HABITATS



Data Ingestion process

Use is made of standards, best practices, and existing marine data management infrastructures, data centres and pathways towards the EMODnet



Workflow from submission to elaborating and processing for publishing in EMODnet

* Migration to Central Portal, 2024

Interreg



Co-funded by
the European Union



NEXT Black Sea Basin
NEXT Black Sea Basin

