

#MarineData4Americas

The Copernicus Marine Service



Copernicus
Marine Service



PROGRAMME OF THE
EUROPEAN UNION



MERCATOR
OCEAN
INTERNATIONAL



noLogin

FULL, FREE AND OPEN
ACCESS TO DATA



-  ATMOSPHERE MONITORING
-  MARINE ENVIRONMENT MONITORING
-  LAND MONITORING
-  CLIMATE CHANGE
-  EMERGENCY MANAGEMENT
-  SECURITY

 **opernicus**
Europe's eyes on Earth

One single access point

<http://marine.copernicus.eu/>

The screenshot shows the homepage of the Copernicus Marine Service. At the top, there is a navigation bar with links for Resources, News, Events, Contact, and Register, along with a search bar. Below this is the Copernicus logo and the Copernicus Marine Service logo. The main header features the text 'Copernicus Marine Service' and a sub-header: 'Providing free and open marine data and services to enable marine policy implementation, support Blue growth and scientific innovation.' A 'Access Data' link is prominently displayed. Below this, there are four main service categories: DATA (OCEAN PRODUCTS), EXPERTISE (OCEAN STATE REPORT), TRENDS (OCEAN MONITORING INDICATORS), and EXPLORATION (OCEAN VISUALISATION). Each category has a brief description. At the bottom, there is a 'Quick Links' section with four items: User corner, Policy tools, Services, and User learning services, each with an icon and a short description.

Online catalogue
marine.copernicus.eu

Nearly 300 scientifically
qualified products &
Ocean monitoring
indicators

User driven

Common format
(Netcdf)

Open and Free

Copernicus Marine Service Offer



BLUE OCEAN

Currents, temperature,
waves, sea level, ...



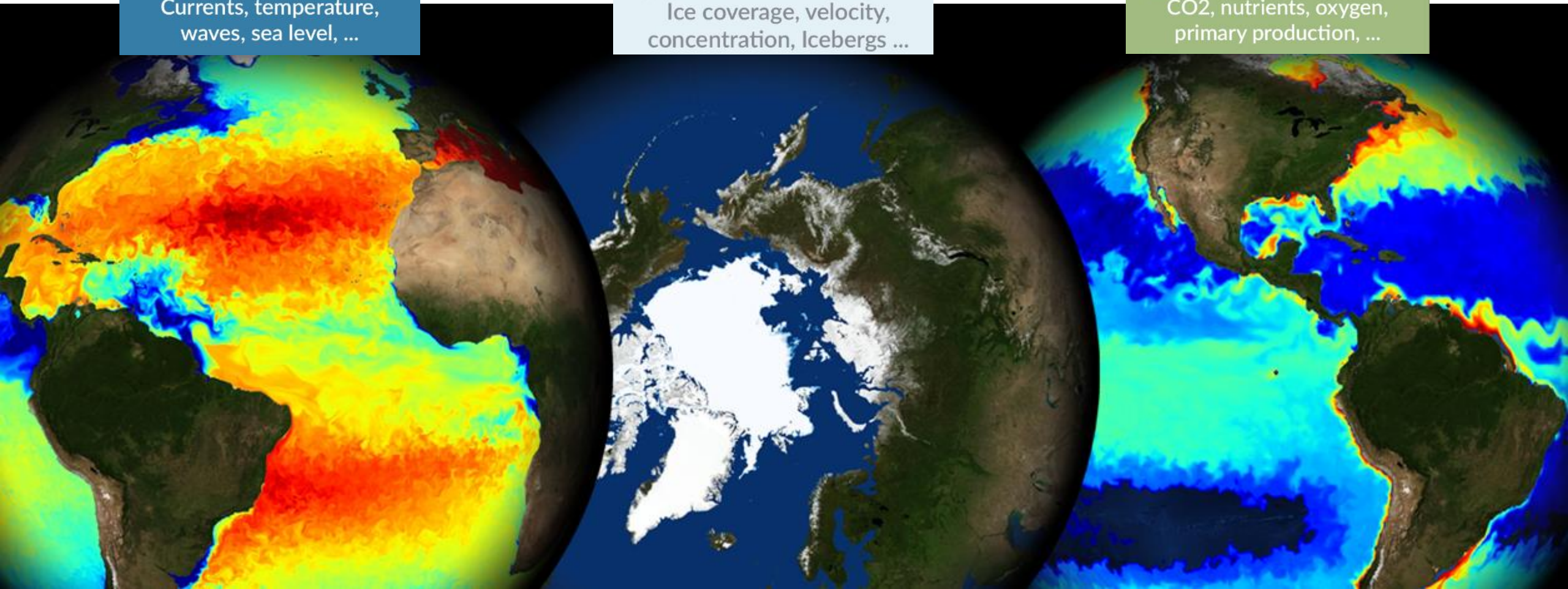
WHITE OCEAN

Ice coverage, velocity,
concentration, Icebergs ...

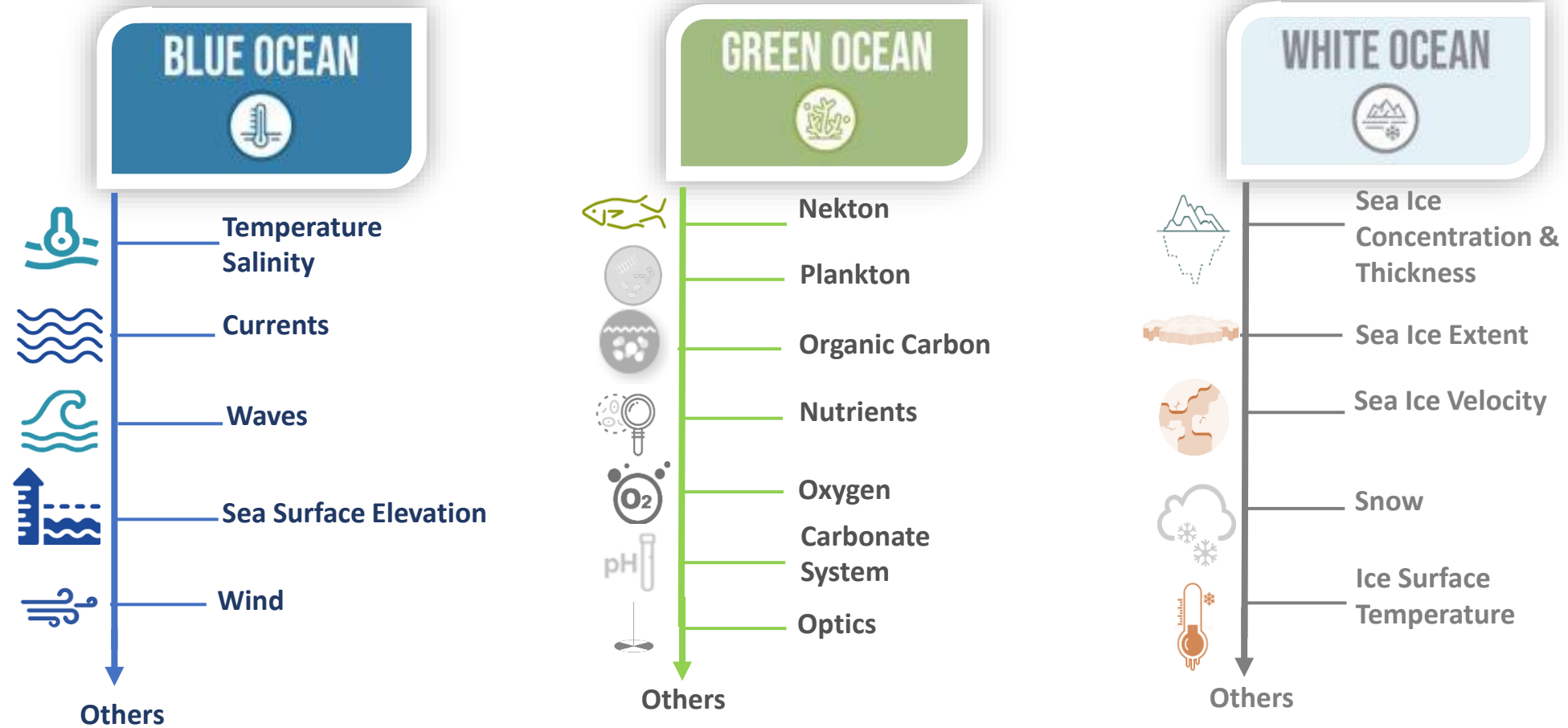


GREEN OCEAN

CO₂, nutrients, oxygen,
primary production, ...



Copernicus Marine Service Offer



Copernicus Marine Service Portfolio

DATA SOURCES

MODEL DATA

INSITU DATA

SATELLITE DATA

TEMPORAL COVERAGE

Multi-Year
~30 years

REAL-TIME
Daily, hourly, 15'

FORECAST
10 days

GEOGRAPHICAL COVERAGE

- 1 Global
- 2 Arctic
- 3 Baltic
- 4 NWS
- 5 IBI
- 6 Med Sea
- 7 Black Sea



Ocean Monitoring Indicators

Ocean Monitoring Indicators

The gateway to essential ocean variables to monitor the health of the ocean.

Home > Access data > Ocean Monitoring Indicators

Ocean Monitoring Indicators (OMIs) are free downloadable trends and datasets covering the past quarter of a century. These are key variables used to track the vital signs of the ocean and changes in line with climate change.

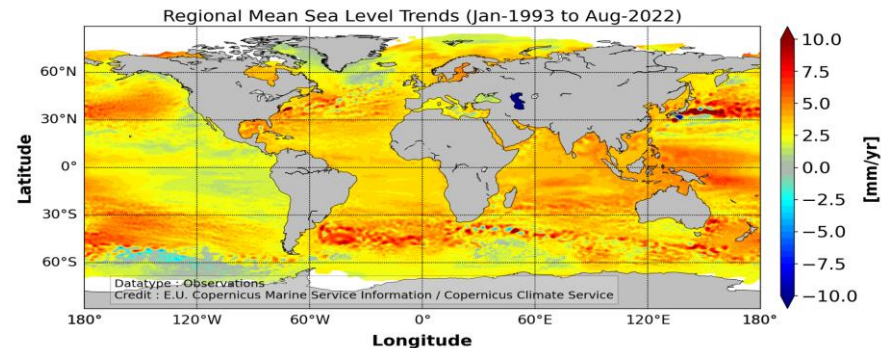
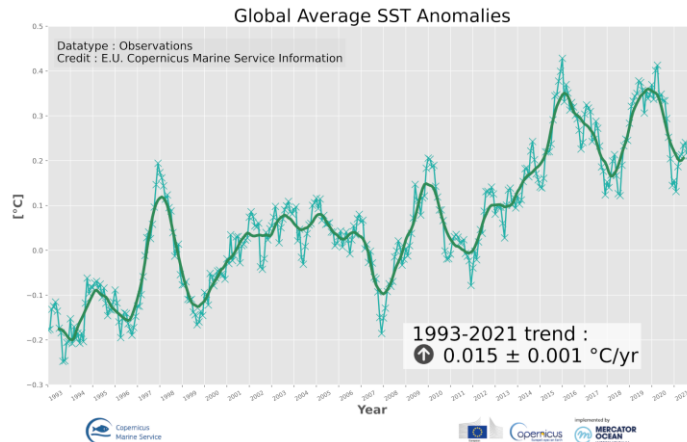
For in-depth explanations on some of these indicators, visit the [Ocean Climate Portal](#).

Search: [magnifying glass icon]

Region selection: [All regions] [Arctic Ocean] [Atlantic-European North West Shelf-Ocean] [Antarctic Ocean] [Atlantic-Iberian Biscay Irish-Ocean] [Baltic Sea] [Black Sea] [Global Ocean] [Mediterranean Sea]

Category selection: [Ocean Circulation] [Ocean Climate] [Ocean Variability & Extremes] [Ocean Health]

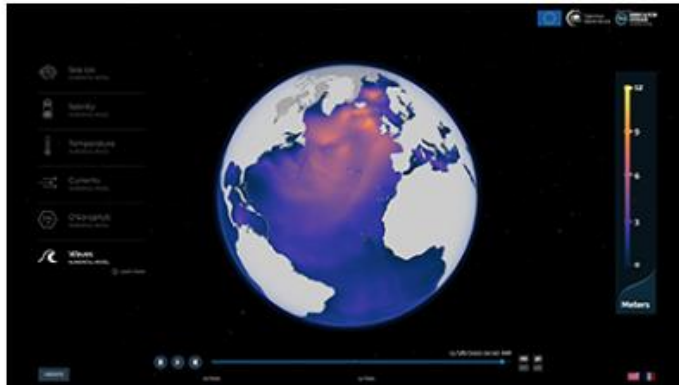
- Key variables to monitor the state of the Ocean
- Free and downloadable Ocean climate trends
- Covering the last 30 years



Data Visualization tools

MYOCEAN LEARN

(BEGINNER) GLOBE

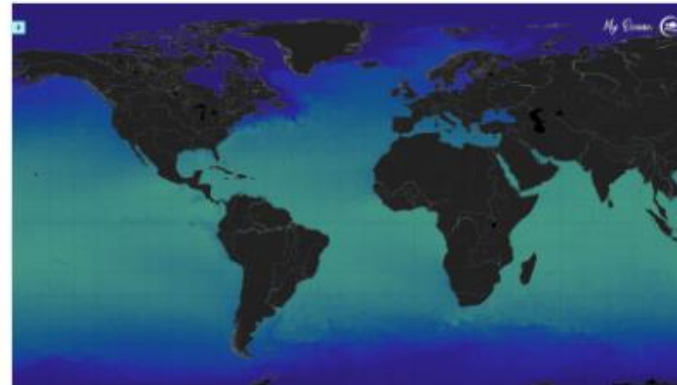


Understand key variables

[Explore MyOcean Learn](#)

MYOCEAN LIGHT

(INTERMEDIATE) PLANISPHERE

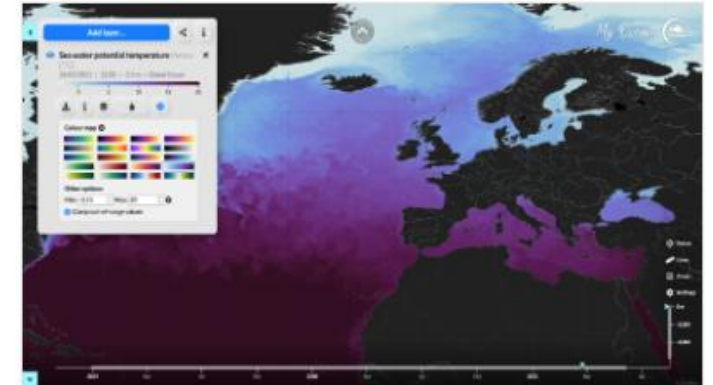


Access key variables

[Explore MyOcean Light](#)

MYOCEAN PRO

(EXPERT) PLANISPHERE



Access full catalogue

[Explore MyOcean Pro](#)

The Ocean State Report & Summary



ABOUT THE REPORT & SUMMARY | REPORT AT A GLANCE | OCEAN STATE: EUROPE | OCEAN STATE: AROUND THE WORLD | ABOUT US | CONTACT US

OCEAN STATE: EUROPE

AN OVERVIEW

The following section and accompanying map provide an overview of the events, trends, and anomalies discussed in the Ocean State Report 7. They highlight what was observed in the European seas up to and in 2023 and the effects these might represent for the state of the ocean and beyond.

BEYOND THE OQR 7

- EVENT
- TREND UP TO 2023
- IN 2023
- DECREASE
- INCREASE
- OCEAN HEAT CONTENT
- DISSOLVED OXYGEN
- SALINITY

NORTH EAST ATLANTIC
 Massive seasonal phytoplankton blooms and winter ice advection were observed from July to September 2023. Conversely, the spring equinox was a month (30 days) compared to the 20th century (20th, 2010) for the first time, indicating a shift in the timing of the spring ice melt.

SCOTTISH WATERS
 Unusual coccolithophore blooms observed during summer 2023, one in the Clyde Sea and one near the Orkney Islands.

ADRIATIC SEA
 A lower content of dissolved oxygen was observed in 2023 due to a negative anomaly of subsurface biological production that year and a sharp increase in salinity since 2010.

BALEARIC ISLANDS
 Record-low sea surface temperatures were classified as an ocean extreme due to the long-lasting and intense bloom (Ela) in November 2023.

MEDITERRANEAN SEA
 Marine heatwaves in the Mediterranean Sea during summer 2023 were record-breaking in terms of their intensity and duration.

HOW DOES THIS IMPACT THE OCEAN AND BEYOND?

SEA LEVEL
 Global sea levels are rising due to human-induced global warming. The warming of Earth's climate system causes both sea level rise and ice melt, such as glaciers and ice sheets in Greenland and Antarctica. Additionally, ocean waters are absorbing increasing heat, expanding and further contributing to the rise in sea levels. Human communities in close connection with the coast, especially low-lying and coastal areas, are particularly vulnerable to changes in sea level, posing risks to coastal infrastructure (e.g. ports, roads, and tourism facilities).

SEA SURFACE TEMPERATURE
 Long-term rising sea surface and subsurface temperatures and marine heatwaves can dangerously impact the survivability of species, such as coral, sea grasses, kelp, and fish, and cause mass mortality events and macro marine species migrations, leading to lower catch amounts and placing economic pressure on fishing industries.

SALINITY & FRESHWATER CONTENT
 Differences in salinity and freshwater levels in the ocean can alter ocean circulation, currents, and water cycles. A decrease in freshwater content or an increase in salinity could be an indicator for species that favour higher salinity conditions. Additionally, salinity and freshwater can affect the freezing point of seawater, leading to less sea ice and warmer ocean water temperatures.

EU Strategy on Adaptation to Climate Change
 UN Sustainable Development Goals

EU Marine Strategy Framework Directive
 UN Sustainable Development Goals

EU Strategy on Adaptation to Climate Change
 UN Sustainable Development Goals

TRENDS IN THE COPERNICUS OCEAN MONITORING INDICATORS

WIND GLOBAL CLIMATE INDICATORS

- Temperature and Energy
- Ocean and Water
- Coastlines

BLUE OCEAN

SEA SURFACE TEMPERATURE
 TRENDS FROM 1958-2022

Mediterranean Sea	+0.34	North West Shelf	+0.16	Baltic Sea	+0.48
Black Sea	+0.70	North West Shelf	+0.13	Black Sea	+0.18

SEA LEVEL
 TRENDS FROM 1993-2022

Mediterranean Sea	+2.5	North West Shelf	+3.1	Baltic Sea	+4.8
Black Sea	+1.4	North West Shelf	+3.9	Black Sea	+3.9

OCEAN HEAT CONTENT
 TRENDS FROM 1958-2022

Mediterranean Sea	+14	Black Sea	+10	North West Shelf	+0.41
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GREEN OCEAN

OXYGEN INVENTORY
 TRENDS FROM 1993-2022

Black Sea	-0.18
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WHITE OCEAN

15%

of the Baltic Sea was covered by ice in 2023. Sea ice extent in the Baltic Sea has shown a decreasing trend over the period 1950-2023, although the observed trend is not statistically significant.

Copernicus Marine Service

OCEAN STATE REPORT

SUMMARY

ISSUE 7

PROGRAMME OF THE EUROPEAN UNION

Copernicus

MERCATOR OCEAN INTERNATIONAL

Ocean Literacy

Ocean Explainers

Home > Ocean Explainers

Why is the Ocean Important? >

Operational Oceanography >

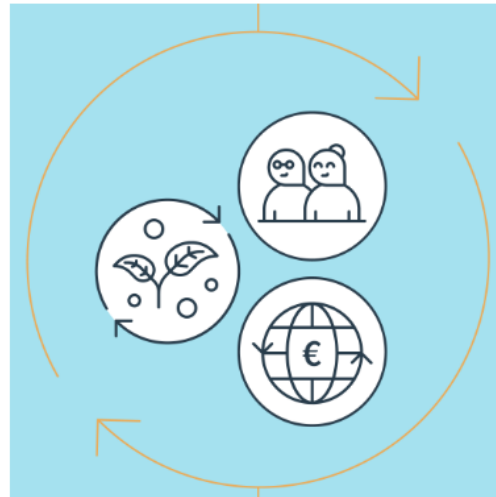
Phenomena & Threats >

Policies >

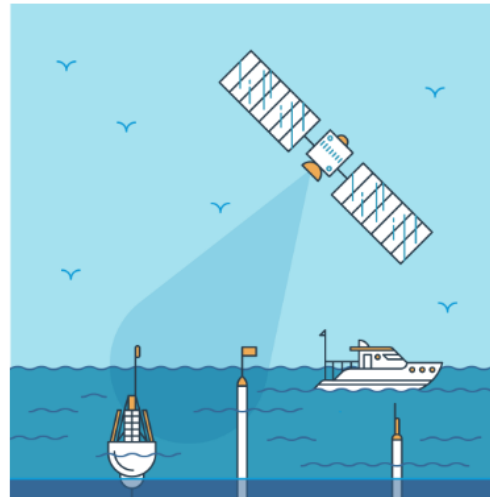
Glossary >

Introduction

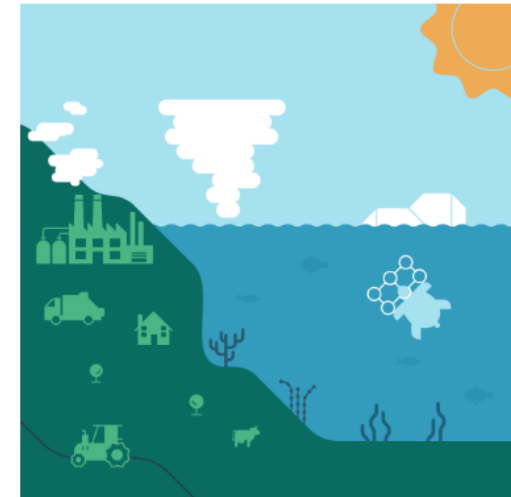
Why is the ocean important? What is operational oceanography? How is the ocean monitored? What is ocean acidification? What are the current policies that help safeguard the ocean? Find the answers to these and more questions in this section.



Why is the ocean important?



Operational Oceanography



Phenomena & Threats

- Ocean Explainers
- Ocean Climate Portal

Blue Markets

- 1 POLAR ENVIRONMENT MONITORING
- 2 CLIMATE & ADAPTATION
- 3 OCEAN HEALTH
- 4 MARINE CONSERVATION & BIODIVERSITY
- 5 SCIENCE & INNOVATION
- 6 POLICIES & OCEAN GOVERNANCE & MITIGATION
- 7 EDUCATION, PUBLIC HEALTH & RECREATION
- 8 EXTREMES, HAZARDS & SAFETY
- 9 MARINE FOOD
- 10 COASTAL SERVICES
- 11 TRADE & MARINE NAVIGATION
- 12 NATURAL RESOURCES & ENERGY



Use Cases



Use Cases

[Home](#) > [Services](#) > [Use Cases](#)

- User Engagement >
- Use Cases >
- Use Case Books >
- Use Cases by Topic >

→ Contribute to our vast collection of use cases. It's quick and free. [SUBMIT A USE CASE HERE.](#)

 [Subscribe to RSS feed](#)

Region: Country: Markets: Mobile Application Demo






Warning system for land-based pollution in the Romanian coastal area



CONNECT Tagus - water quality and extreme water levels in the Tagus Estuary



An Operational model for monitoring shallow waters in the Curonian Lagoon and the Southeast Baltic Sea coasts



Trends in hydrodynamic parameters in the southern North Sea



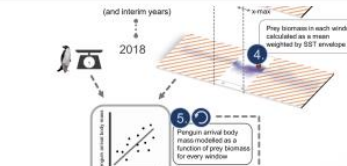
Disko Bay ocean and sea ice forecast for short term planning and decision-making



Ocean Plastic Alert & Tracking system : calculating drift using Copernicus Marine



The role of Copernicus Services in building the I-SEAMORE ecosystem



Modelled prey fields predict predator foraging success



- E-Learning Material
- Webinars and Training Workshops
- Participation at MOOCs, Courses, Hackathons
- Chat box / Help Centre & FAQ



Make waves with marine solutions!



