Copernicus Marine Service

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MERCATOR OCEAN INTERNATIONAL

The future of Ocean Forecasting

The Copernicus Marine Perspective

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2021 2030 United Nations Decade of Ocean Science for Sustainable Development

Copernicus Marine Service

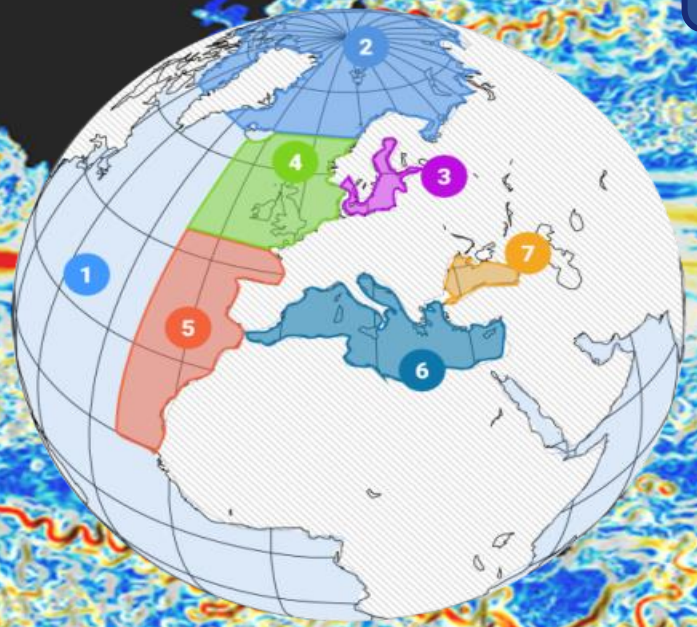
The EU Copernicus Marine Service

Global & Regional Ocean Monitoring and Forecasting

MULTI-YEAR
10 to 45 years

REAL-TIME
Daily, hourly

FORECAST
2 to 10 days



ESSENTIAL OCEAN VARIABLES

BLUE OCEAN	WHITE OCEAN	GREEN OCEAN
Physics	Sea Ice	Biogeochemistry

OBSERVATIONS
In-situ & Satellites

NUMERICAL MODELS
& data assimilation

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

marine.copernicus.eu

Free and Open


MyOcean
by Copernicus Marine Service

Copernicus Marine Service

Help Center & FAQ

Have a question about our services? Find everything gathered in one intuitive place online.

CONSISTENT PRODUCT QUALITY INFORMATION
Internationally agreed validation metrics
(Ocean Predict programme)

Validation in support of service desk

Planned evolution

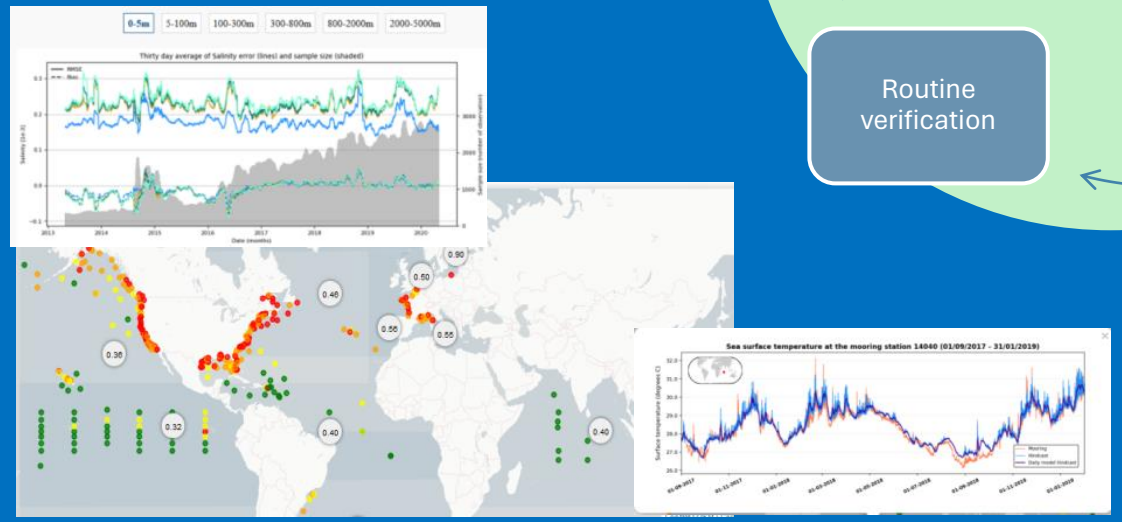
Pre operational qualification

Routine verification

Delayed time verification

Coordination & cross-cutting activities

Product quality dashboard



Marine Data Store

- Description
- Notifications
- Data access
- Contacts

DOCUMENTATION

- Quality Information Document
- User Manual
- Licence
- How to cite

DOI

10.48670/moi-00235

Peer reviewed publications

Ocean Science

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Special issue | The Copernicus Marine Environment Monitoring Service (CMEMS): scientific advances

around

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

A user and policy driven service with a large uptake from all sectors

CHAPTER 1
Copernicus Marine Users

The Copernicus Marine community continues to grow, reaching nearly 66 000 users by the end of 2023. The increase in the number of visits is significant and indicates growing interest in the new content disseminated on the website.

A / Overview of Copernicus Marine subscribers

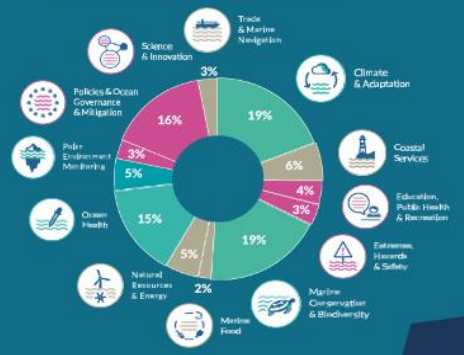
65 952 Subscribers

+25.9% growth rate vs 2022

Number of countries in 2023
235

Number of organisations
8 236

Distribution of the subscribers by Blue Markets in 2023



B / Copernicus Marine Community on marine.copernicus.eu

+ 42% growth rate vs 2022

Website traffic
987 835 visits

7.4 Actions per visit

Average visit duration
5:58 min returning visitor
3:06 min new visitor

1 593 457 unique pageviews

Copernicus Marine and the UN Decade of Ocean Science

Aligning efforts towards the ocean we want

- Copernicus Marine contributes to almost all outcomes of the UN Decade with a focus on the predicted ocean and accessible ocean outcomes

- Similarly Copernicus Marine answers to almost all its challenges with a focus on challenges 6 (marine hasards), 7 (ocean observing system) and 8 (digital representation of the ocean)

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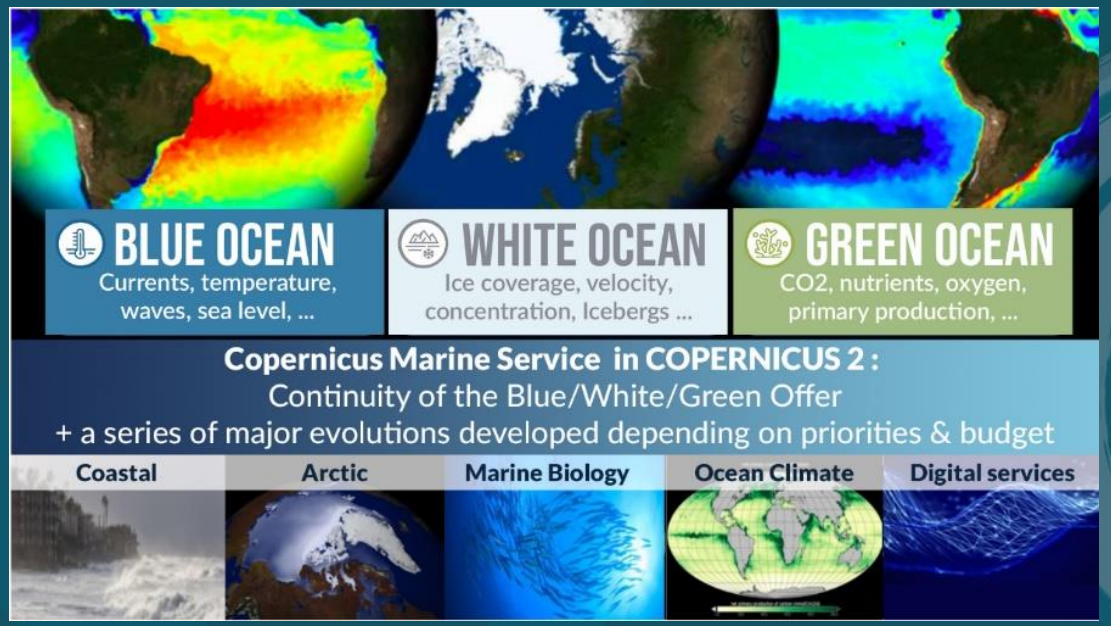
Copernicus Marine evolution plans to address UN decade challenges and its predicted ocean outcome

Prepare the **implementation of the next generation of ocean and sea ice monitoring and forecasting systems**

Driven by user and policy needs, observation, science & technology advances



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Advancing ocean prediction capabilities

Copernicus Marine Service Evolution activities: 3 Streams defined to support Copernicus Marine R&D activities, with different time horizons, players and objectives

Operations

R&D

- **Tier 1** (1yr)
- **Tier 2** (2yrs)
- **Tier 3** (>3yrs)

2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027

Copernicus 2 — Phase 1 | Phase 2

TAC/MFC R&D

R&D calls + TAC/MFC

SE Call 1 | SE Call 2

Horizon-EU

IMMERSE

ACCIBERG, NECCTON, EDITO Model Lab, FOCCUS…

SEAMLESS

+ many H2020/ HORIZON, ESA, EUMETSAT, national R&D projects

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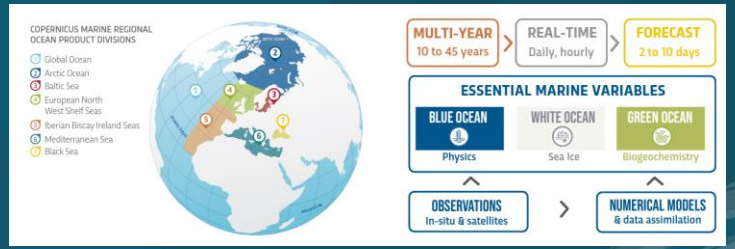
Copernicus Marine 2025-2028 evolution plans / ocean forecasting

- Integration of new satellite missions (e.g. Sentinels, SWOT) and in-situ data (e.g. BGC Argo), improved coupling, improved data assimilation, higher resolution, increased use of AI (e.g. calibrated forecasts, bias corrections)
- Addition of an ensemble forecasting service line to improve forecasts and error characterization
- Observation impact assessment (regular reporting) to be consolidated
- New service line for the coastal modelling/prediction to be implemented with EU member states
- Advancing modelling/prediction for biology (higher trophic levels) through the NECCTON HE project.
- Climate projection: coastal/regional downscaling, biogeochemistry and higher trophic level (R&D)

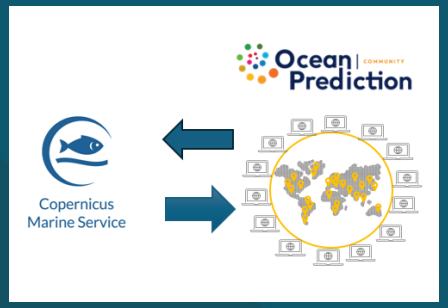
Copernicus Marine and the OceanPrediction DCC

Advanced and well-organized network of modelling and forecasting centers (global and regional) for the blue/green/white ocean. Operational interfaces and harmonization with coastal systems from EU member states.



Common and rigorous procedures to manage evolutions, for product harmonization, adoption of standards (formats, validation) and to organize the feedbacks for the observing system evolution.

International cooperation as part of the Ocean Predict programme and its task teams and UN Decade programmes and projects (e.g. ForeSea, CoastPredict, Ditto, ObsCode, Marine Life 2030, Synops).



Copernicus Marine can serve as an exemplar for the implementation of a worldwide system as part of the OceanPredict DCC and, in return, is organized to implement international recommendations/guidance from the DCC

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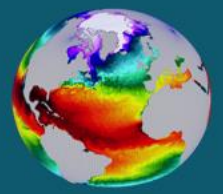
2024 OCEAN DECADE CONFERENCE

Connecting the world around Ocean Prediction:

A vision for the Decade and Beyond

As part of the Ocean Decade Week (8-12 April 2024)



Copernicus Marine and the UN Decade

- Copernicus Marine is a major asset to contribute to the UN Decade 2030 vision and its “predicted ocean” outcome
- A powerful European network that benefits to and from international collaboration
- Fully committed to contribute to the development of a worldwide ocean prediction system as part of the OceanPrediction DCC

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