eosc | Blue-Cloud 2026

Blue-Cloud 2026 harnesses Europe's aquatic expertise to create the marine science extension to the European Open Science Cloud.

The project expands services, integrates tools, and bolsters data access over 42 months, supporting the EU Blue Economy and environmental aims, in line with the EU Green Deal and UN Goals.

Scan the QR Code
to visit our website
blue-cloud.org

Core services

Data Discovery & Access Service (DD&AS)

An easy and FAIR service for discovering and retrieving multi-disciplinary data sets and data products managed and provided by leading Blue Data Infrastructures.
The federation facilitates sharing of datasets as input for analytical and visualisation services and applications, that are hosted and further developed in the Blue-Cloud Virtual Research Environment.

Virtual Research Environment (VRE)

An Open Science platform for collaborative marine research, using a wide variety of datasets and analytical tools, complemented by generic services such as sub-setting, pre-processing, harmonising, publishing and visualisation.
The VRE hosts different Virtual Labs and is going to include thematic Workbenches, which users can access with existing credentials in EOSC, the European Open Science Cloud. Multi-disciplinary datasets retrieved from the Blue-Cloud DD&AS can be exploited in the VRE. All methods and services in the Catalogue are exchanged with the EOSC Portal Catalogue & Marketplace.

Thematic Virtual Labs

Carbon-Plankton Dynamics
This model will use carbon units to study nutrient availability, productivity, organic matter, and interactions in marine regions beyond MIRAMARE.

Global Fisheries Atlas
Expanding operational fisheries VLabs in Blue-Cloud, enabling global access to fisheries data.
Experience enhanced knowledge management and spatial data interoperability for impactful research and insights.

Coastal currents from observations
Improve integration and accuracy of ocean surface current data with Blue-Cloud 2026.
Generate integrated maps using HF radar, drifter, and satellite altimetry data.

Integration of coastal ocean observations along Europe
Integrate diverse ocean data for enhanced knowledge base. Blue-Cloud 2026 combines JERICO-RI data, advanced visualisations, and expanded functionalities for valuable coastal insights.

Marine Environmental Indicators
This VLab enables monitoring, assessment, and decision-making for marine areas.
Exploit diverse data sources in a unique analysis service for online computation of indicators.

Essential Ocean Variables Workbenches

A number of data-intensive Workbenches for selected Essential Ocean Variables (EOVs) are being developed and tested in Blue-Cloud 2026. Ocean and data scientists will implement efficient workflows that allow them to harmonise, validate and qualify large and various in situ data sources, exploiting the blue analytical services available in the Blue-Cloud Virtual Research Environment.
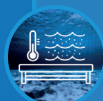
Physics: temperature & salinity

This Workbench will implement a cloud-based workflow to generate harmonised, validated and customisable EOV data collections for temperature and salinity, integrating datasets released from different EU and non-EU data infrastructures for the test region of the Mediterranean Sea. The optimised workflow will allow users and big data infrastructures to rapidly/systematically derive and upgrade integrated data collections and generate different datasets as e.g. gridded climatologies.

Eutrophication: chlorophyll, nutrients, oxygen

This Workbench will define and implement an efficient production workflow to merge, aggregate and harmonise multi-source datasets managed by Copernicus Marine Service, EMODnet Chemistry and the World Ocean Database, together with key EU RIs and build highly qualified EOV datasets for eutrophication variables: chlorophyll, nutrients, oxygen. Tested for the North East Atlantic, the aim is to further extend it to the global ocean during the last year of the project.

Ecosystem-level EOVs

This Workbench will improve the availability, quality and interoperability of large collections of plankton observations based on traditional counts, quantitative imaging and genomic methods available from the EMODnet/EurOBIS and ELIXIR data infrastructures. It will develop a generic modelling workflow to generate high-quality interpolated maps of the global distribution of these plankton entities. It will generate ecosystem-level EOVs following clear QA/QC steps and according to best practices in habitat modelling.

Blue-Cloud Training Academy

Unlock the potential of Open Science and FAIR data principles for marine research

Comprehensive lessons and materials that guide you in utilising Blue-Cloud services for Open Science in marine research. The Academy also hosts dedicated courses to foster the uptake of Open Science practices and explore the challenges and solutions in applying the FAIR foundational components, standard and practices towards data interoperability to achieve FAIRification in the marine data community.

Discover how to harness the power of our platform and embrace Open Science practices in the ocean science domain. Join us on this educational journey - check the Academy and sign up for the upcoming training opportunity

In partnership with

GOOS · IODE International Oceanographic Data and Information Exchange · unesco Intergovernmental Oceanographic Commission · EuroGOOS European Global Ocean Observing System

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Blue-Cloud 2026 Consortium

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