

BIOGEOSEA

Ocean Insights for the Future

Tracking the Pulse of the Ocean

BioGeoSea enhances biogeochemical Essential Ocean Variables, integrates observing systems, advances data products, improves models, and develops new ocean indicators. We deliver the knowledge and tools needed to protect the future of our blue planet by turning trusted data into insight that enables the development of solutions for sustainable ocean management.

3.5 years

Sep 2025 –
Feb 2029



16 partners

from 10 countries



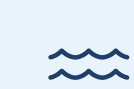
€ 5.8 M

budget



4 phenomena

analyzed



Vision

An integrated observing system that delivers the insight and knowledge we need about ocean biogeochemistry from and for society, the blue economy, science, and policy in a timely and transparent manner – enabling informed decisions.

Phenomena and BGC EOVs

Ocean Acidification	INORGANIC CARBON		
Deoxygenation	OXYGEN	NUTRIENTS	STABLE CARBON ISOTOPES
Biological Carbon Pump	PARTICULATE MATTER	DISSOLVED ORGANIC CARBON	NUTRIENTS
Greenhouse gas fluxes	INORGANIC CARBON	NITROUS OXIDE	

Key Objectives

- **Enhance monitoring** by advancing the maturity level of all ocean BGC EOVs and indicators.
- Integrate **multiple observing platforms** for enhanced monitoring, assessment, and projections of BGC EOVs.
- Enhance the representation of **key BGC processes** in ESMs.
- Advance **Scientific understanding** by linking biogeochemical, physical and biological components.
- Deliver **evidence-based solutions** for addressing emerging threats to Ocean Health.
- Strengthen **international cooperation** and promote European leadership in the ocean-climate-biodiversity science nexus.

Work Packages



Key Exploitable Results

- 01:** Updated BGC EOVS Specification Sheets – Co-developed with stakeholders and published on GOOS to improve global ocean monitoring.
- 02:** Guidelines for Ocean Observing & Data Standardization – Ensuring interoperability and consistency in ocean data collection.
- 03:** Multidisciplinary Ocean Indicators – Integrating BGC, physical, and biological EOVS to assess key ocean phenomena and inform policy.
- 04:** Enhanced Earth System Models – Improving projections of global BGC cycles to support climate policies and environmental management.
- 05:** High-Resolution BGC Data for Global Databases – Contributing to GO2DAT, MEMENTO, and CARIMED, and supporting marine debris monitoring.
- 06:** Policy Paper with Foresight Recommendations – Synthesizing findings to guide policymakers in tackling ocean health challenges.
- 07:** Freemium BioGeoSea Software – Providing free access to critical BGC indicators, with premium features for tailored forecasting.



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the European Union