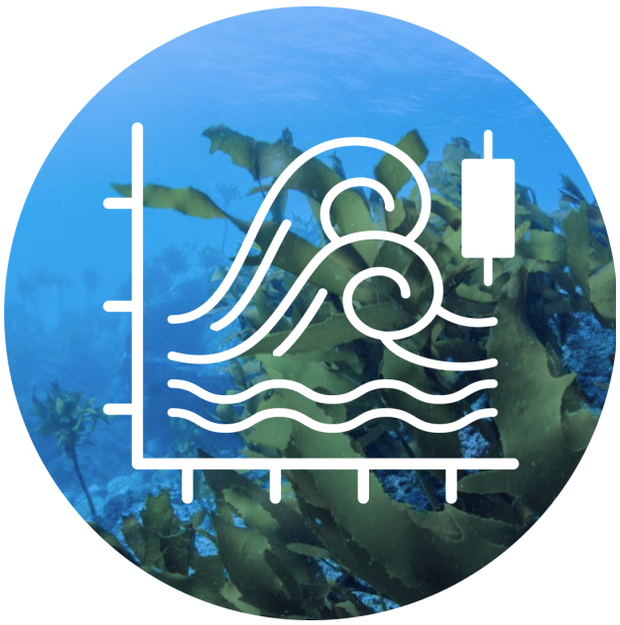
eosc | Blue-Cloud2026

Virtual Labs



Marine Environmental Indicators

The VLab provides support to analyse the quality of the marine environment, and inform decision makers about the good environmental status in a changing climate.

Partners:

Data sources through Blue-Cloud:
Copernicus Marine Service, Copernicus Climate Service, EuroARGO, EMODnet

Main target users:
Environmental protection agencies and international stakeholders involved in environment management

Services introduction:
The VLab offers a web user interface and several scientific-based algorithms, that can be used to obtain environmental indicators and added-value data applying big data analysis and machine learning methods on multi-source data sets.

UN SDGs addressed

13 CLIMATE ACTION

14 LIFE BELOW WATER

SERVICES

MEI Generator
The Marine Environmntal Indicators Generator service is a web graphical interface for the exploitation of multiple data sources with multiple algorithms, that allows the user to generate and display value-added environmental data from generic marine data.

Ocean Patterns & Ocean Regimes Indicators
Ocean Patterns and Ocean Regimes indicators are based on machine learning methods. They consist in applying an unsupervised classification to profiles or time-series. Data are automatically gathered into clusters, depending on their vertical or temporal structure. When analysing the different clusters, spatial or temporal coherence can be revealed.

Storm Severity Index (SSI)
The SSI service calculates maps and time series of exceptional atmospheric wind or storm circumstances. Individual storms (Event SSI) and specific areas (Area SSI) can be calculated for a given time period and time step (for time series). Wind speed threshold data are used to relate the storm severity to specific impact (e.g. sea circulation, coastal damage).

Simple Access to Carbon Data
The service provides information on how to use ERDDAP servers to access and retrieve subsets of inorganic carbon data in their preferred format, removing the need to download large file(s) that the user may not be interested in.

This is a step forward for the exploitation of marine big data originated from many international initiatives, and to provide scientific support for preserving a healthy ocean

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Test the VLab now!