

Blue-Cloud 2026

for FAIR Data management

Patricia Martin Cabrera

Data manager, VLIZ

January 2024

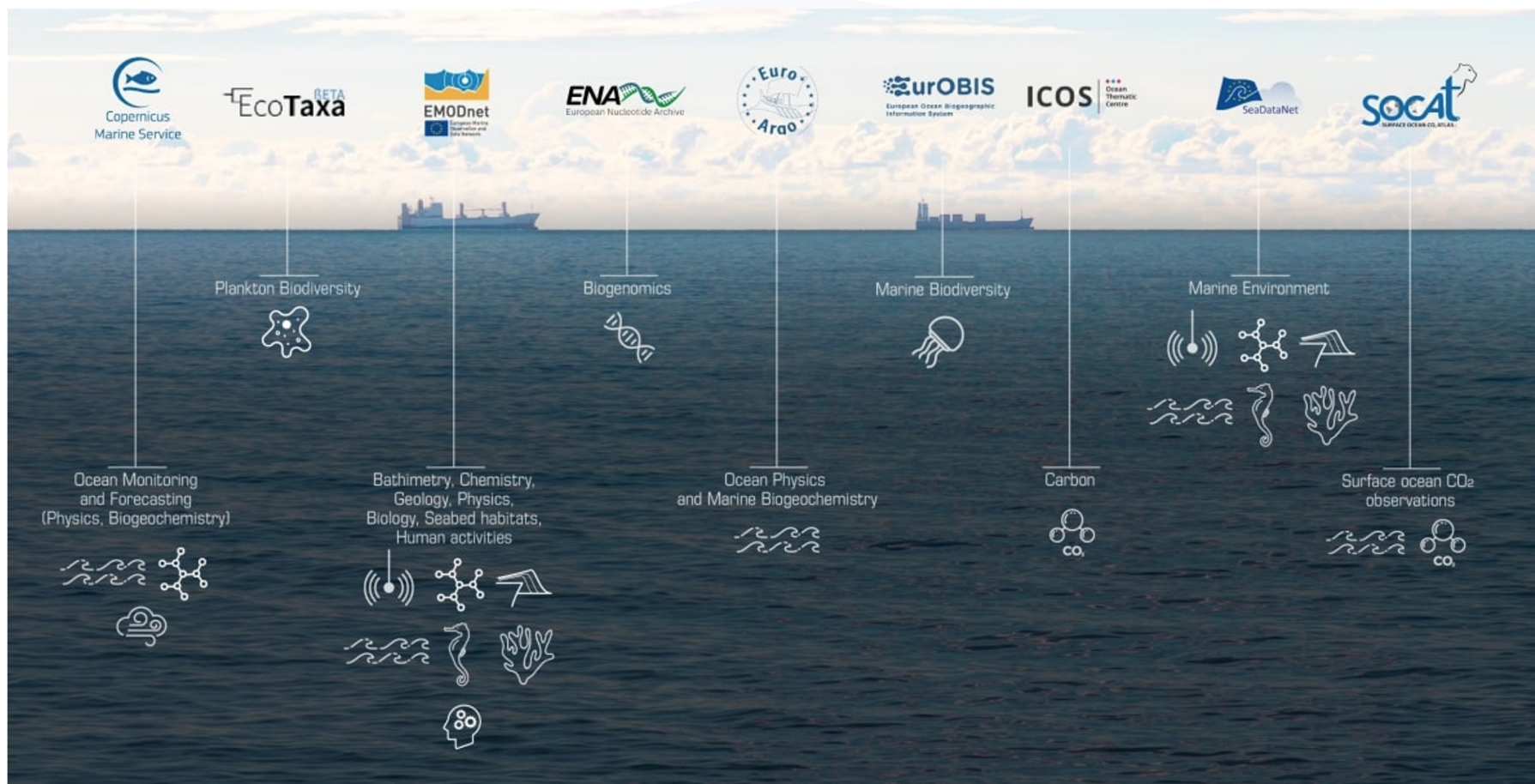


Funded by
the European Union

Federated Data Discovery & Access Service of datasets and data products from Blue Data Infrastructures

Why is this useful?

Lots of multidisciplinary data from the marine domain available on the web by many different repositories. But it is not always easy to know where to find them.



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What can you do?

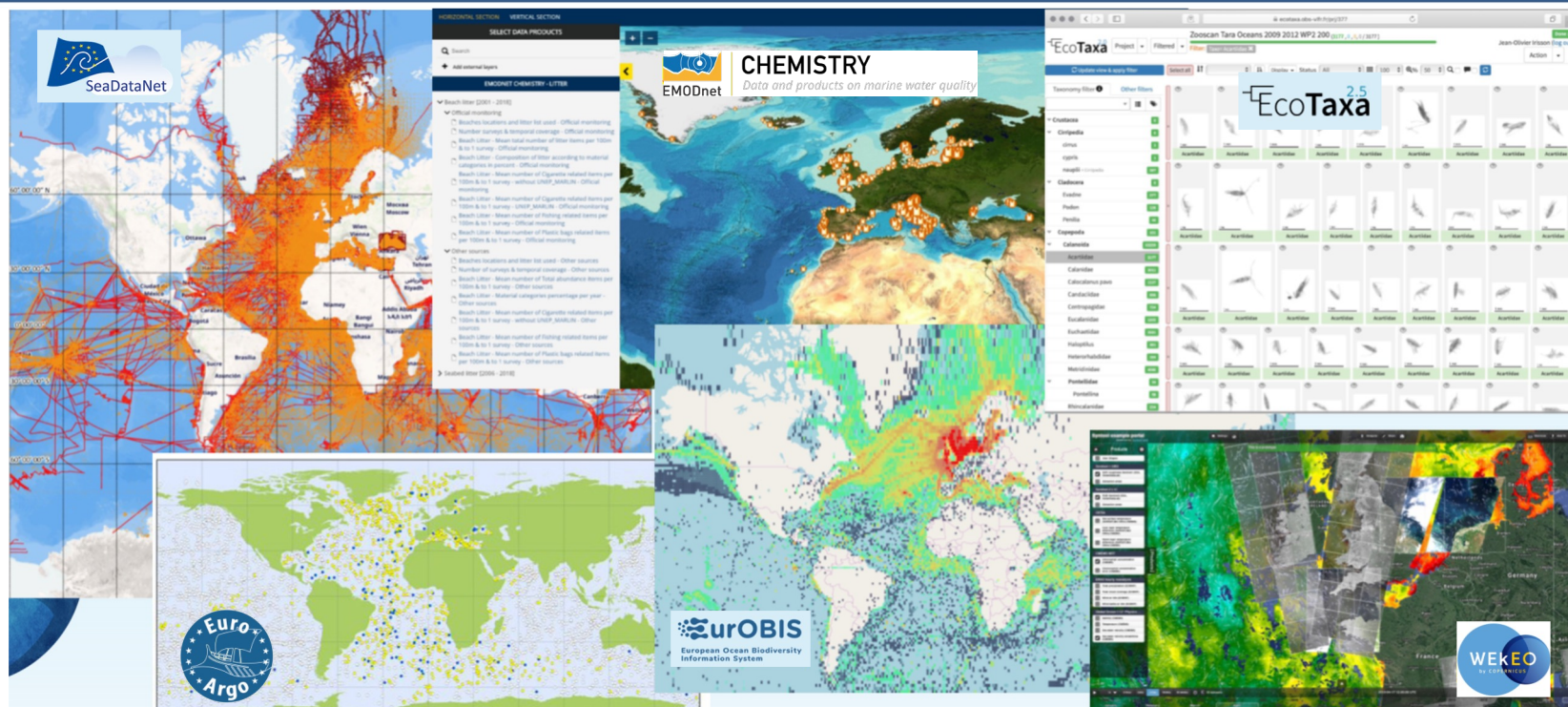
The Blue-Cloud DD&AS provides a federated search for discovering and downloading these datasets and data products.



EcoTaxa^{2.5}



Illustrations of data coverage



Concept of two-step search approach:

First step: identifying data collections and products with a free search, geographic and temporal criteria

Second step: drilling down within identified collections to get more specific data at granular level, using again free search, geographic and temporal criteria

Finally, users are facilitated by a shopping mechanism to download and store the retrieved data collections on their own machines or in a data pool as part of the Blue-Cloud VRE.

Blue-Cloud
Pushing innovative services for Marine Research & the Blue Economy

DATA DISCOVERY & ACCESS SERVICE

WELCOME: PATRICIA MARTIN CABRERA - DATASET BASKET 0

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DATA DISCOVERY & ACCESS SERVICE

WELCOME: PATRICIA MARTIN CABRERA - DATASET BASKET 1

EUROBIS
European Ocean Biodiversity Information System

Filter search

You searched for: [Reset all](#)

Images
plankton
131836
5840

Free search

Date search
From:
To:

Geographic search
North
West
East
South

SEARCH RESET

Keywords
Flow cytometry 1
EUROBIS 1

Organisation
Flanders Marine Institute (VLIZ) 1
Swedish Meteorological and Hydrol... 1

Push order #735 to VRE

Ordernumber: 735
Lastupdate: 2024-01-17 15:07:47.667
Inputdate: 2024-01-17 14:54:11.730
Organisation: Flanders Marine Institute
Contact name: Patricia Martin Cabrera
Country: BE

PUSH ORDER TO VRE

End date
20161016

<https://data.blue-cloud.org>

Federated Data Discovery & Access Service of datasets and data products from Blue Data Infrastructures

Why is this useful?

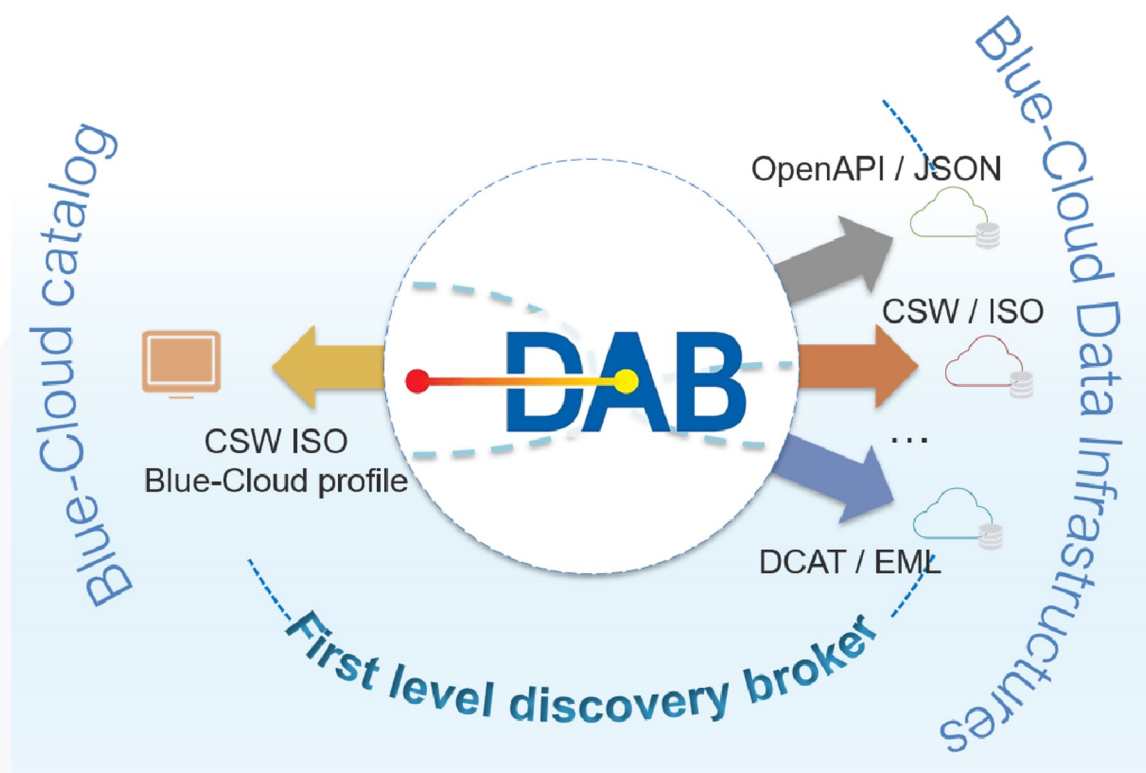
Lots of multidisciplinary data from the marine domain available on the web by many different repositories. But it is not always easy to know where to find them.

What can you do?

The Blue-Cloud DD&AS provides a federated search for discovering and downloading these datasets and data products.

How does it work?

Machine-to-machine interactions between components of the DD&AS and web services / APIs (following protocols such as CSW, OAI-PMH, ERDDAP), managed and operated by the Blue Data Infrastructures.



Metadata and Data Brokerage services interacting
Machine-to-Machine with web services and APIs as
 provided and operated by the Blue Data Infrastructures

- Each BDI is requested to adopt SeaDataNet standards:
 - BODC – SeaDataNet controlled vocabularies
 - EDMO (organizations)
 - EDMERP (projects – programmes)
 - CSR (Cruise Summary Reports)
- The controlled vocabularies must be included in their metadata in ‘triples’ for:

- literal description of term => example: sea level
- Term code => example:
<https://vocab.nerc.ac.uk/collection/P02/current/ASLV>
- Used vocabulary => example:
<https://vocab.nerc.ac.uk/collection/P02/current/>

NERC Environmental Data Service

The NERC Vocabulary Server (NVS) Service Status

NVS Home | Vocabularies | Thesauri | Search NVS | SPARQL | Other Tools | About NVS

Concept

Sea level

URI <http://vocab.nerc.ac.uk/collection/P02/current/ASLV/>

Within Vocab SeaDataNet Parameter Discovery Vocabulary

Alternative Labels [Sea_Level](#)

Definition Measurements and predictions of the displacement of the water column surface from a fixed, stable reference

Date 2007-06-19T11:32:16

Identifier SDN-P02:ASLV

Note accepted

Alternate Formats
Other formats for this page:
[RDF/XML](#) [Turtle](#) [JSON-LD](#)

Alternate Profiles
Other views of this page:
[Alternate Profiles ?](#)
[NVS.html view ?](#)

NERC Environmental Data Service

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Vocabulary

SeaDataNet Parameter Discovery Vocabulary

URI <http://vocab.nerc.ac.uk/collection/P02/current/>

Description Terms describing fine-grained related groups of measurement phenomena designed to be used in dataset discovery interfaces.

Creator SeaDataNet

Modified 2023-12-12

Version Info 127

Identifier P02

Register Manager British Oceanographic Data Centre

Register Owner SeaDataNet

See Also <https://github.com/nvs-vocabs/P02>

License <https://creativecommons.org/licenses/by/4.0/>

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[RDF/XML](#) [Turtle](#) [JSON-LD](#)

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Other views of this page:
[Alternate Profiles ?](#)

The common Blue-Cloud metadata elements are:

[INSPIRE Themes - European Commission \(europa.eu\)](https://inspire.ec.europa.eu/themes)

- IDENTIFIER: Blue-Cloud unique and persistent code for the metadata record
- TITLE: a characteristic, and often unique, name by which the collection is known
- ABSTRACT: a short description of the collection
- **KEYWORD: a commonly used word, formalized word or phrase used to describe the subject**
- BOUNDING_BOX: extent of the resource in the geographic space given as a bounding box
- TEMPORAL_EXTENT: time-period covered by the content of the collection
- **PARAMETER: name of the attribute described by the measurement value**
- **INSTRUMENT: measuring instrument used to acquire the data**
- **PLATFORM: platform from which the data were taken**
- **ORGANIZATION: organization associated with the collection**
- DATESTAMP: the latest update date of the metadata description
- REVISION_DATE: the latest update date of the data
- RESOURCE_LINKS: download links where available and useful



NERC Vocabulary Server



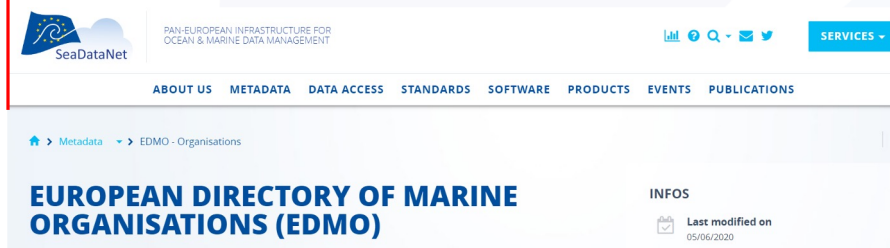
PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

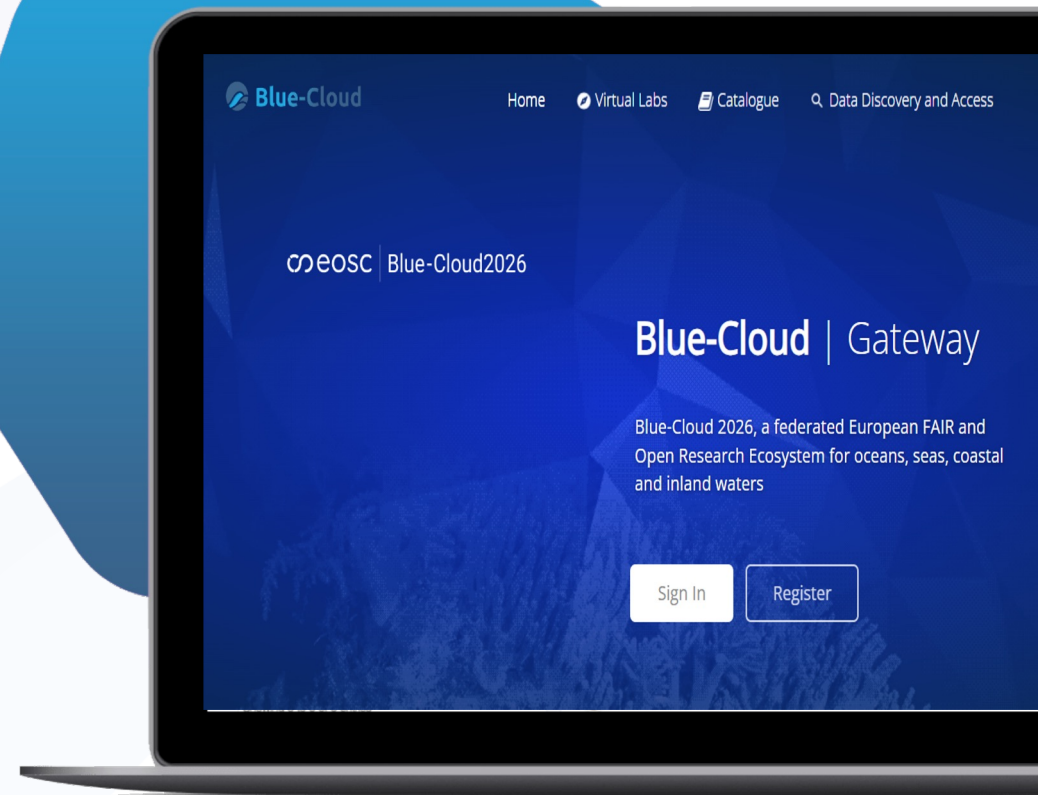
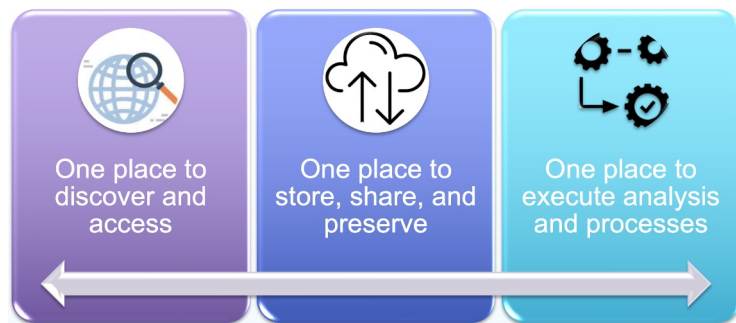
L05 (SEADATANET DEVICE CATEGORIES)



PAN-EUROPEAN INFRASTRUCTURE FOR OCEAN & MARINE DATA MANAGEMENT

L06 (SEAVOX PLATFORM CATEGORIES)





The Blue-Cloud VRE makes it possible to do more, supporting the entire (data-driven) research lifecycle



VLab tools

Highly Configurable
Jupyter Notebook env.

Rstudio Version 4+ env.

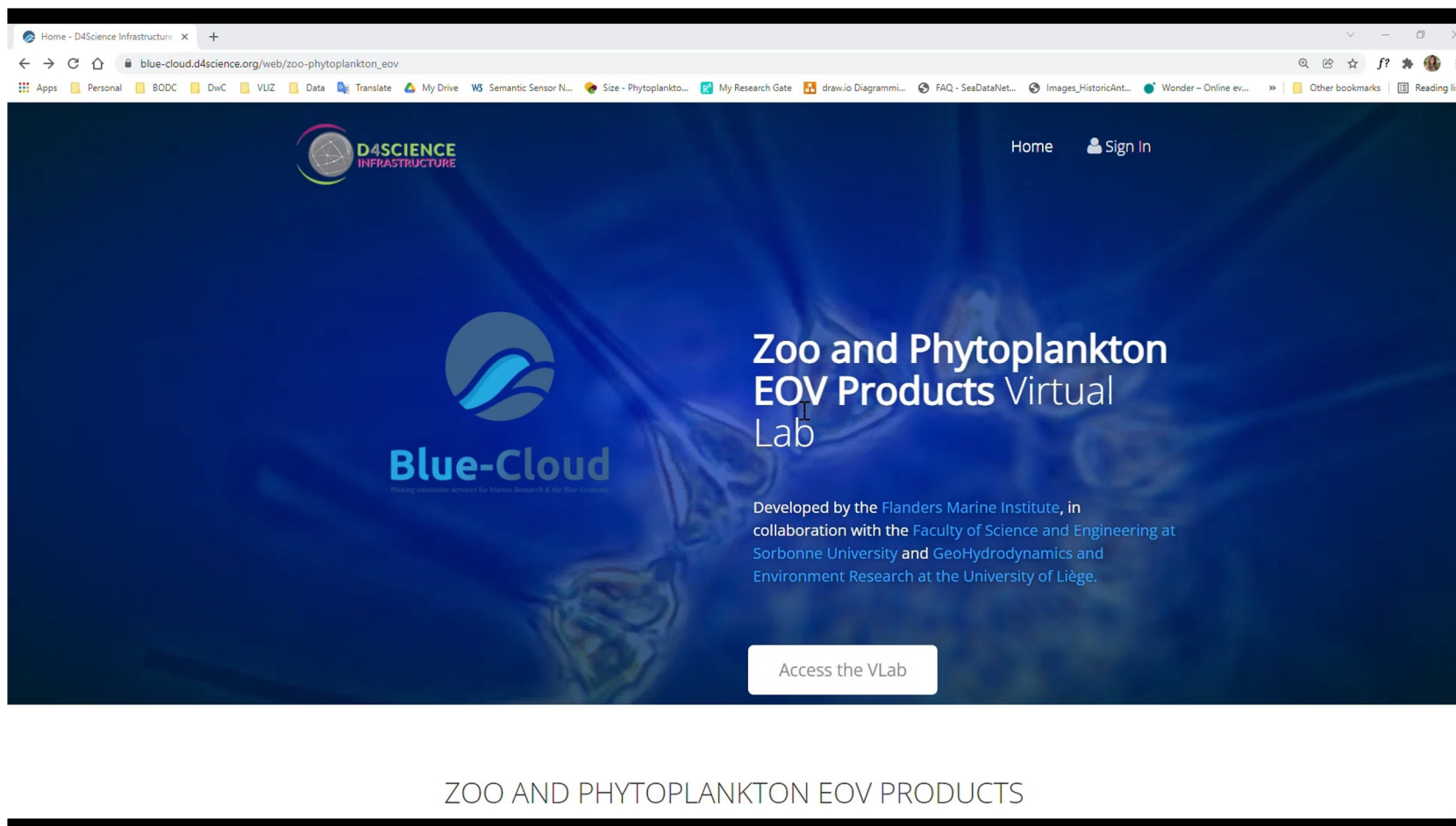
(R) Shiny Apps

Analytics Engine

Custom Service/Apps

The screenshot displays the Blue-Cloud Lab website interface. The top navigation bar includes links for Analytics, R Studio 4, Jupyterhub, Catalogue, Social Feed, Members, and How to. The main content area is titled 'Notes for the exploitation of this VLab' and describes the development and integration environment for R, Python, and other supported software languages. It lists key features: powered by a cluster of Dataverse servers, powered by a cluster of RStudio servers, and powered by Jupyterhub. Below this, there are four main sections: Jupyterhub, RStudio, Analytics Engine, and Catalogue. The Jupyterhub section describes its capabilities for computational environments and resources. The RStudio section describes its integrated development environment for R. The Analytics Engine section describes its capabilities for executing an array of analytics methods. The Catalogue section describes its list of datasets and products. On the right side, there is a sidebar with a 'Invite Members' section, an 'About' section with the Blue-Cloud Lab logo, and a table of recent items. The table has columns for Name, Owner, and Last modified. The items listed are JupyterLab, Blue-Cloud Internal Webinar on the use of the B..., BlueCloud.pl..., D4Science S4I Tutorial ppt, and Guidelines for deploying Virtual Labs in D4Sci... The sidebar also includes a 'Show' dropdown set to 5 items, a 'Go to shared workspace' link, and a 'View Managers' link.

<https://blue-cloud.d4science.org/group/blue-cloudlab/blue-cloudlab>




Home - D4Science Infrastructure x +

blue-cloud.d4science.org/web/zoo-phytoplankton_eov

Apps Personal BODC DvC VLIZ Data Translate My Drive WS Semantic Sensor N... Size - Phytoplankto... My Research Gate draw.io Diagrammi... FAQ - SeaDataNet... Images_HistoricAnt... Wonder - Online ev... Other bookmarks Reading list

D4SCIENCE INFRASTRUCTURE

Home Sign In


Blue-Cloud
Enabling tomorrow's research for Marine Research & V&E Blue Cloud

Zoo and Phytoplankton EOVS Products Virtual Lab

Developed by the [Flanders Marine Institute](#), in collaboration with the [Faculty of Science and Engineering at Sorbonne University](#) and [GeoHydrodynamics and Environment Research at the University of Liège](#).

Access the VLab

ZOO AND PHYTOPLANKTON EOVS PRODUCTS

Spatiotemporal analysis of plankton drivers in the Belgian part of the North Sea. Data, scripts and model output

Followers
2

[Unfollow](#)

Rating

Spatiotemporal analysis of plankton drivers in the Belgian part of the North Sea. Data, scripts and model output

This archive contains the data, scripts, model output and supplementary information to Otero et al. (2022). 'Spatiotemporal analysis of plankton drivers in the Belgian part of the North Sea. Data, scripts and model output'. This archive contains zooplankton and phytoplankton abundance data, water temperature profile data, and water quality descriptors such as nutrient and pigment concentrations provided by VLIZ in the framework of LifeWatch. Additional water temperature data of the Westhinder station was obtained from Flemish Banks Monitoring Network. All data relates to the Belgian part of the North Sea (2011-2017). The R scripts were written by Viviana Otero and Steven Pint.

zenodo

eosc Blue-Cloud2026 Blue-Cloud

Published October 18, 2021 | Version v1

[Dataset](#) [Open](#)

Data, scripts and model output to perform spatiotemporal analysis of plankton drivers in the Belgian part of the North Sea

Steven Pint¹ Viviana Otero¹

[Show affiliations](#)

Data managers: Patricia Martin-Cabrera¹ Lennert Schepers¹

Researchers: Klaas Deneudt¹ Maarten De Rijcke¹ Jonas Mortelmans¹

<https://doi.org/10.5281/zenodo.6794084>

Article

Pronounced Seasonal and Spatial Variability in Determinants of Phytoplankton Biomass Dynamics along a Near-Offshore Gradient in the Southern North Sea

Viviana Otero^{1,†}, Steven Pint^{1,*,†} , Klaas Deneudt¹, Maarten De Rijcke¹ , Jonas Mortelmans¹, Lennert Schepers¹ , Patricia Martin-Cabrera¹ , Koen Sabbe² , Wim Vyverman², Michiel Vandegehuchte¹ and Gert Everaert¹

Data Availability Statement: The results reported in this manuscript have been obtained by using a dedicated working environment: Zoo and Phytoplankton EOVS Products Virtual Laboratory operated by D4Science.org (https://blue-cloud.d4science.org/web/zoo-phytoplankton_eov, accessed on 15 March 2023). This working environment hosts the data and the software, thus making the process leading to the results repeatable according to open science practices. The processed data and scripts have also been published in the Blue-Cloud Catalogue (https://data.d4science.org/ctlg/Zoo-Phytoplankton_EOV/spatiotemporal_analysis_of_plankton_drivers_in_the_belgian_part_of_the_north_sea_data, accessed on 10 March 2023), as well as deposited in Zenodo (<https://doi.org/10.5281/zenodo.6794084>, accessed on 10 March 2023) under a Creative Commons CC-BY 4.0 license. This allows for the use of the data and code under the condition of providing the reference to the original source: Steven Pint and Viviana Otero (2021). Data, scripts, and model output to perform spatiotemporal analysis of the plankton drivers in the Belgian part of the North Sea (dataset). Zenodo: <https://doi.org/10.5281/zenodo.6794084>, accessed on 10 March 2023. The raw input data

that was obtained from LifeWatch can be accessed through <https://doi.org/10.14284/441> and <https://doi.org/10.14284/445>, accessed on 10 March 2023, or via <https://rshiny.lifewatch.be/>, accessed on 10 March 2023.

Acknowledgments: The production of this work has been supported by the Blue Cloud working

<https://doi.org/10.3390/jmse11081510>

Data Federation

interoperability, discovery,
access and sharing

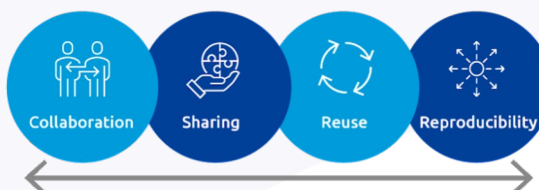


VRE

Blue-Cloud Core Services

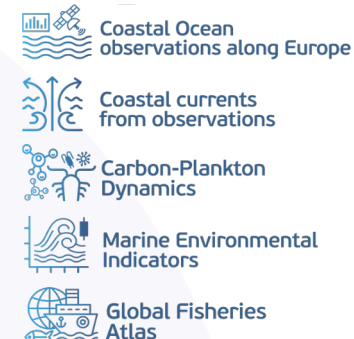
EOSC Core Services

eosc | Blue-Cloud2026



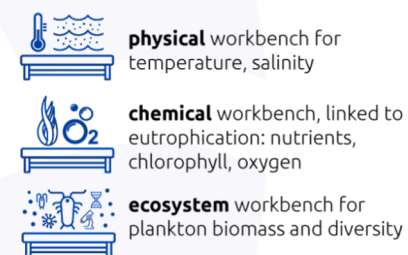
Virtual Laboratories

data preparation, data analysis
and publication



Data Workbenches

data extraction, data cleaning
data processing and deployment



Blue-Cloud is a federated European Ecosystem that facilitates:

- Discovery and access to multidisciplinary data sources
- Easier integration of data sources in a VRE
- Heavy computation analyses
- Integration of algorithms and methods
- Access to re-usable methodologies
- Work in a collaborative environment

Blue-Cloud services

Explore the Data Discovery and Access Service and get access to about 10 million datasets from leading European marine data infrastructures.

Exploit data and derived data products in the Virtual Labs, where you can execute methods and perform collaborative research tasks.

Browse the Catalogue featuring datasets and products resulting from the Blue-Cloud Virtual Laboratories and learn about methods used to generate them.

[Browse the Data Discovery Access Service](#)

[Login to the Blue-Cloud VLab](#)

[Access the Catalogue](#)

About Blue-Cloud 2026

[Poster](#)

[Rollup](#)

[Blue-Cloud Virtual Labs in support of Sustainable Development Goals](#)

[Flyer](#)

For dissemination & social media share

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[Youtube account](#)

[ZENODO account](#)

Blue-Cloud Readings

[Strategic Roadmap](#)

[Position Paper on EOSC](#)

[Interfacing Blue Cloud Data Discovery and Access with EOSC](#)

[Generic publications](#)

[Newsletters](#)

Blue-Cloud Services

[In EOSC Marketplace](#)

[Virtual Research Environment](#)

[Data Discovery Access](#)

[Data Catalogue](#)

[Training Academy](#)

Blue-Cloud Virtual Labs

[Zoo and Phytoplankton EOVS products](#)

[Plankton Genomics](#)

[Marine Environmental Indicators](#)

[Fish, a matter of scales](#)

[Aquaculture](#)

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