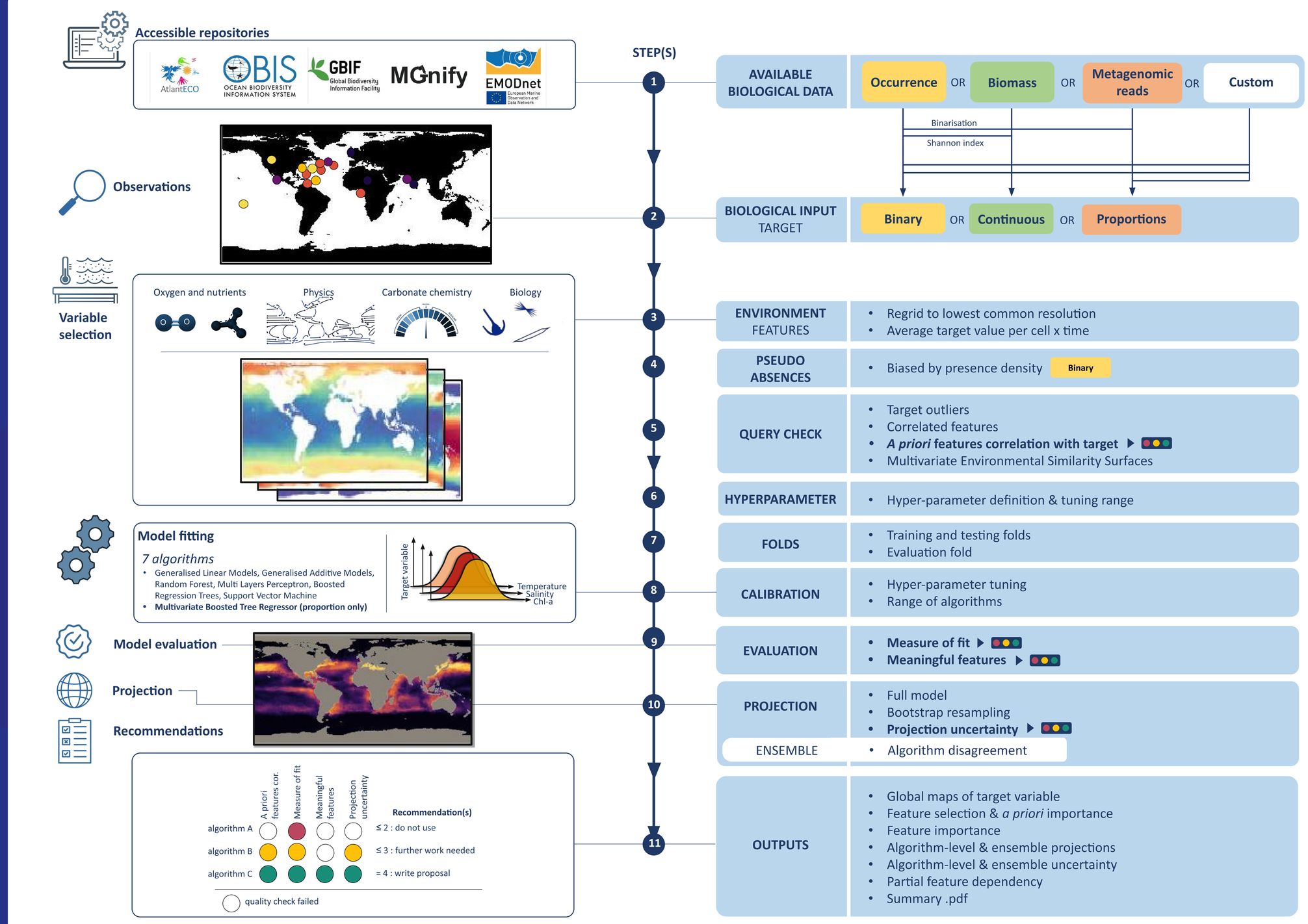
eosc | Blue-Cloud2026

CEPHALOPOD: a standardized and flexible framework for marine habitat modelling across data types and sources

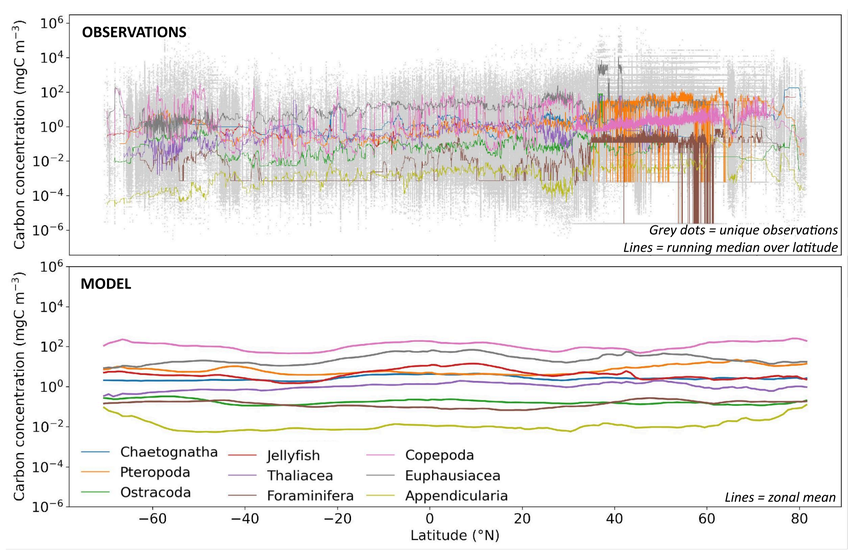
Alexandre Schickele[1]*, Corentin Clerc[1]*, Fabio Benedetti[1], Jean-Olivier Irisson[2], Matthias Münnich[1], Meike Vogt[1]
[1]ETH Zürich, Institute of Biogeochemistry and Pollutant, Zurich, Switzerland
[2]Sorbonne Université, CNRS, LOV, Villefranche-sur-Mer, France
*equally contributed to this poster

Abstract

Here, we introduce the Cloud-based Ensemble Pipeline for Habitat modelling Across Large-scale Ocean Plankton Observation Datasets (CEPHALOPOD). Through two example of applications, we illustrate the framework ability to extrapolate plankton distributions in space and time based on traditional net observations or omics datasets. CEPHALOPOD addresses to a broad spectrum of stakeholders, including researchers, policymakers, conservationists, and educational institutions.



Evaluate zooplankton global biomass and distribution



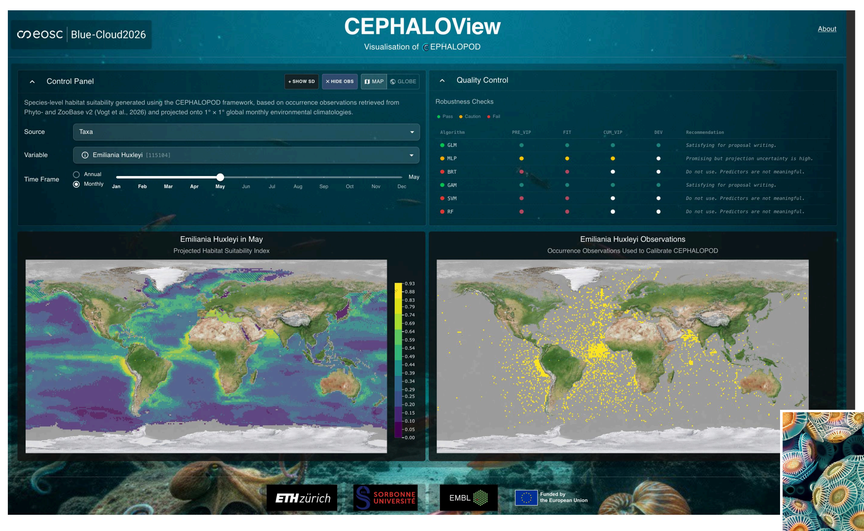
Pipeline input: biomass retrieved from traditional net zooplankton observations*

Pipeline ouput: extrapolated spatio temporal PFT-resolved plankton distribution

Applications: **Earth System Model evaluation** (PFT-specific), global **plankton ecology** (trophic pyramid, size spectrum, traits biogeography)

*Compilation of zooplankton observation from various methods (AtlanTECO-BASE). Zooplankton abundances (including observations from MAREDAT; Buitenhuis et al., 2013), the CPR surveys, BODC, COPEPOD, JeDI, KRILLBASE, Malaspina, Tara, among other efforts). 15,294,171 zooplankton abundance observations distributed in 10 plankton-functional types and 1,262 accepted taxonomic names. Conversion to biomasses based on a taxonomically resolved abundance to biomass conversion (unpublished).

Visualizing EOVs and EBVs with CEPHALOView



Emiliana Huxleyi

ACCESS CEPHALOView
https://tinyurl.com/cephaloview

LEARN MORE ABOUT THIS WORKBENCH

WATCH THE INTERVIEW!

Matt

Alexandre

Funded by the European Union

@BlueCloudEU company/blue-cloud-org BlueCloudorg blue-cloud.org