



Carbon Plankton Dynamics

This VLab provides a **service to analyse** the relative contribution of the **drivers in phytoplankton dynamics** in the Belgium part of the North Sea and the northern Adriatic Sea. **The Nutrient-Phytoplankton-Zooplankton-Detritus (NPZD)** model is built using data containing phytoplankton and zooplankton abundances, nutrients (nitrogen, silica and phosphor), and carbon data (dissolved inorganic carbon, air-sea carbon flux). This model helps to understand **the spatio-temporal variations** of plankton dynamics and to determine whether they act as a carbon sink or source.

Partners Involved



Data Sources

EMODnet Biology/EurOBIS, EMODnet Chemistry, SOCAT, ICOS-Carbon portal.

Main Target Users

Blue-Cloud Hackathon and Training Academy participants, Blue-Cloud Task Forces, Researchers, Policy makers/EU initiatives.

Blue-Cloud Added Value

The collaborative and open science tools used in the Blue-Cloud VRE platform allow their re-use by other researchers, so it can be applied to fit their own research and/or to respond to other research questions, such as **"How do marine ecosystem respond to changing environmental conditions, such as ocean acidification and warming?"** or **"What is the role of biogenic reefs in carbon sequestration and its implications for climate change migration?"**

UN SDGs addressed



Steven Pint VLIZ

Disruptions in phytoplankton communities will have a cascading effect throughout the food web, impacting both ecological and commercially significant fish species. In our model, we incorporate carbon data because phytoplankton plays a pivotal role in the ocean's carbon cycle, acting as carbon sinks through photosynthesis.

**Access the
VLab Here!**

