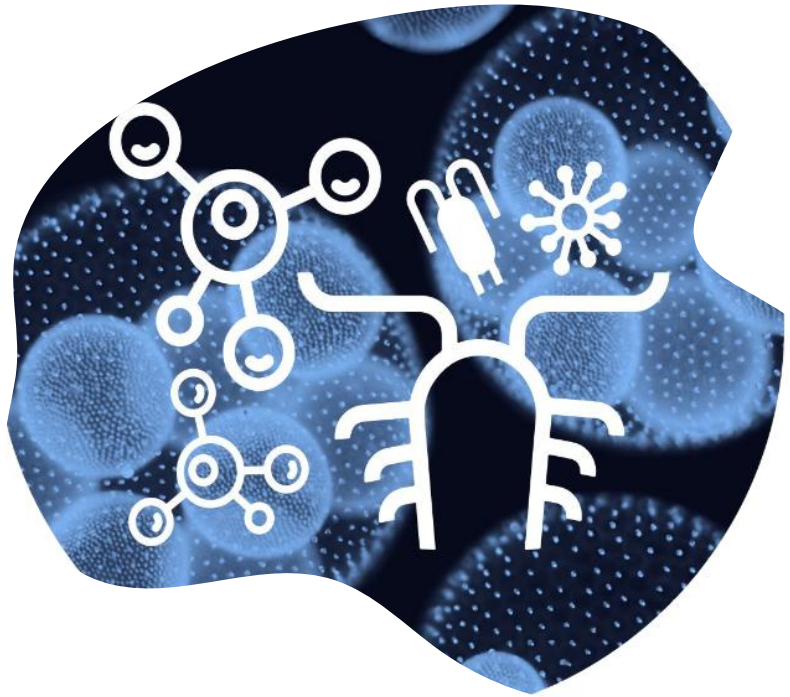
EUROPEAN UNION

EU MISSIONS
RESTORE OUR OCEAN & WATERS



Carbon-Plankton Dynamics Virtual Laboratory

A Virtual Laboratory to analyse the **relative contribution** of the drivers in **phytoplankton** dynamics in the Belgium Part of the **North Sea** and the northern **Adriatic Sea.**

This Virtual Laboratory contributes to the Mission by simulating how plankton communities absorb carbon and regulate marine ecosystems under changing climate conditions:

- **Modelling Marine Ecosystems**: Simulating interactions between nutrients, phytoplankton, zooplankton, and detritus, helping assess nutrient availability, productivity, and carbon cycling – key for ecosystem health and resilience.

- **Predicting Biomass**: Forecasting phytoplankton and zooplankton biomass based on environmental conditions, aiding biodiversity monitoring and climate impact assessments.

- **Enabling Data-Driven Decisions**: Using carbon units and integrating diverse datasets, the Virtual Lab provides actionable insights for pollution control, ecosystem restoration, and sustainable resource management.

- **Supporting the Digital Twin of the Ocean**: Contributing data and models to simulate and predict the effects of human activities and climate change, aligning with the Mission's digital transformation goal.

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