The Ocean carbon cycle plays a crucial role in regulating the global climate, taking up approximately 25% of CO_2 emitted into the atmosphere and storing massive quantities of carbon in the Ocean interior via a series of processes known as the biological carbon pump.

Recent work suggests a much higher level of complexity in the biological carbon pump functioning than previously thought, including important roles for higher trophic level organisms and a broad range of fish associated processes,

Looking to the future, humanity will become increasingly reliant on the Ocean for resources via fishing, mining, and energy extraction. The consequences of these activities: biomass removal via fishing suspended sediment generation via industrial processes disproportionately impact the higher Trophic levels, which are crucially important in the global carbon cycle but poorly understood. OceanICU aims to fill this knowledge gap.

Follow the latest OceanICU news

OceanICU is a five-year long Horizon EU funded project that seeks to gain a new understanding of the biological pump and its processes to provide fundamental knowledge and tools to help policy makers, regulators and Ocean industry stakeholders manage and understand the impact of their actions on Ocean carbon, ultimately leading to a better approach for addressing climate change in alignment with the EU Green Deal to reduce the net emissions of greenhouse gases to Zero by 2050. For more information visit ocean-icu.eu.

OceanICU
Understanding Ocean Carbon

Data from the project will be available at:

ICOS Integrated Carbon Observation System

EMODnet European Marine Observation and Data Network

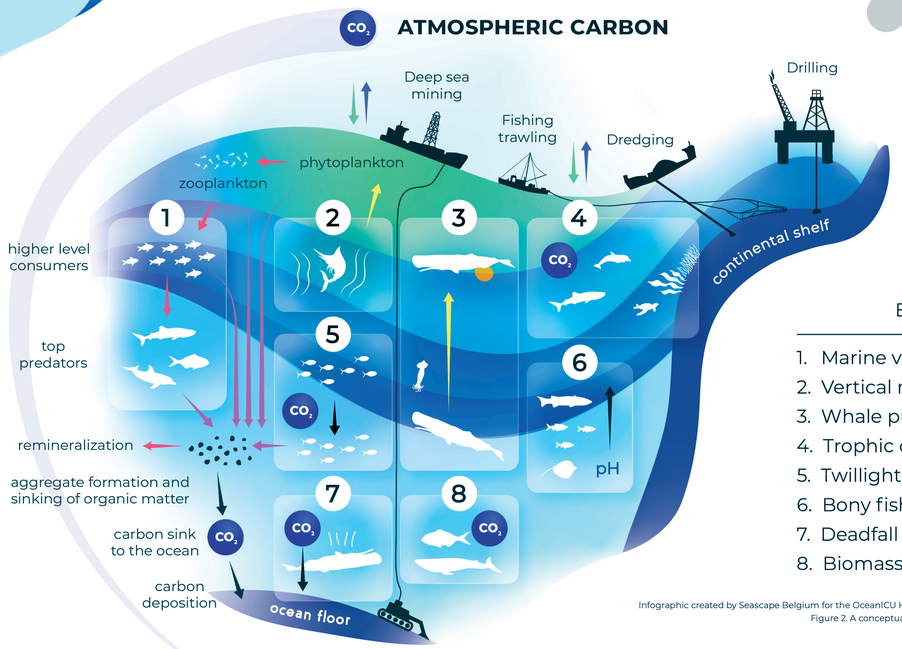
Expected outcomes

Enhanced Ocean exploration around the role of biological groups in the sequestration of carbon by the Ocean

Increased understanding and predictability and reduced uncertainty in the Ocean carbon cycle

Improved understanding of new models and tools promoted by OceanICU

Biological C pump processes considered in OceanICU



Infographic created by Seascape Belgium for the OceanICU Horizon Europe project, adapted from Lutz and Martin 2014, Figure 2. A conceptual diagram of marine vertebrate carbon services | Version 1.3

Collaborating and co-designing to develop the right tools

The OceanICU team is actively connecting with stakeholders in Policy, Industry and Civil Society to assess their current needs of the marine space and to identify key emerging threats and trajectories which may affect interactions with the Ocean carbon cycle.

These findings will be used in conjunction with OceanICU's scientific discoveries about the BCP, to define scenarios of interest and societal relevancethat will be used to inform Decision Support Tools, giving Policy Makers a more effective pathway to inform mitigation actions and influence business strategies benefitting from marine climate and extraction services, ultimately guiding International policy toward the EU Green Deal carbon neutral target by 2050.

Would you like to be part of the dialogue?

Please fill out our survey via the website

Creating educational pathways

OceanICU is engaging with young stakeholders from the wider society, ages 16 through 30, including students in secondary school, higher education students and young professionalsto develop their interest and understanding of Ocean carbon and the crucial role the carbon cycle plays in regulating the global climate. We will work together to ensure the OceanICU's project outputs are transformed into new educational resources and tools that meet the needs of teachers and educators, ultimately demonstrating an approach to connecting science to the wider society that can be replicated at a larger scale in the future.

Scan to see the 30 partners
highly experienced in the Ocean carbon field

The OceanICU consortium of 30 partners brings together expertise and methods from different climate science, Ocean biogeochemistry, biological Oceanography and marine ecology as well as the Ocean modelling community, social science, software development and data science from around Europe.

Co-funded by the European Union

UK Research and Innovation

This work was funded by the European Union under grant agreement no. 101083922 (OceanICU) and UK Research and Innovation (UKRI) under the UK government's Horizon Europe funding guarantee [grant number 10054454, 10063673, 10064020, 10059241, 10079684, 10059012, 10048179]. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.