



# BALTIC SEA

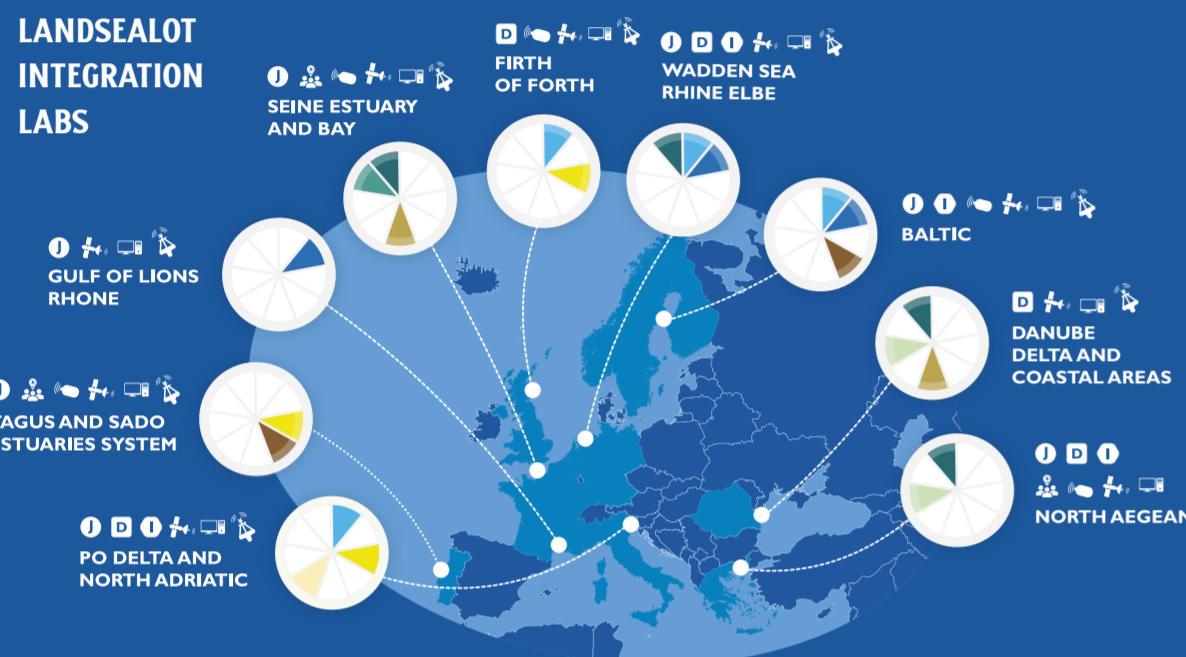
LandSeaLot Integration Lab

Where terrestrial & marine habitats meet

## What is an "Integration Lab"?

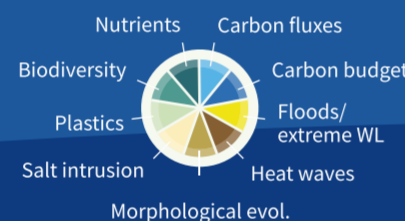
LandSeaLot Integration Labs are dynamic testing sites for developing and refining a Common Observation Strategy across land-sea interface areas in Europe. They serve as centres to test new methods and technologies, following a community-based approach to a fit-for-purpose observation of river mouths, estuaries and deltas.

### LANDSEALOT INTEGRATION LABS



#### LEGEND

- JERICO-RI
- DANUBIUS-RI
- ICOS-ERIC
- Citizen science
- Low-cost sensors
- Earth observation
- Numerical modelling
- In situ observation



## About LandSeaLot

LandSeaLot is a Horizon Europe project that seeks to integrate and enhance existing coastal observation efforts - including in situ, satellite, modelling and citizen science - to better study the land-sea interface area.

Visit [landsealot.eu](http://landsealot.eu).

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## Communities in action

LandSeaLot is proud to be in conversation with relevant, local organisations. Your experience living, working, or making observations anywhere in the Baltic Sea is gold. With your input, we can jointly develop new capabilities and achieve great things together.

## Subscribe to the newsletter and reach out if you would like to:



scan QR code

- Help identify observation needs for this area;
- Inform the development of new, science-based data products & information;
- Onboard citizens and local communities in increasing observations.

Contact [hello@landsealot.eu](mailto:hello@landsealot.eu)

The Baltic Sea is a semi-enclosed sea basin covering an area of approximately 398,000 km<sup>2</sup>, bordered by eight EU member states: Denmark, Germany, Poland, Lithuania, Latvia, Estonia, Finland, and Sweden and Russia. It is the youngest sea on the planet, nearly enclosed with near-arctic conditions and brackish water. This shallow sea has an average depth of 53 metres, with 86% of the seafloor lying at less than 100 metres. It supports a unique ecosystem, serving as a crucial breeding and nursery ground for various fish and invertebrate species.

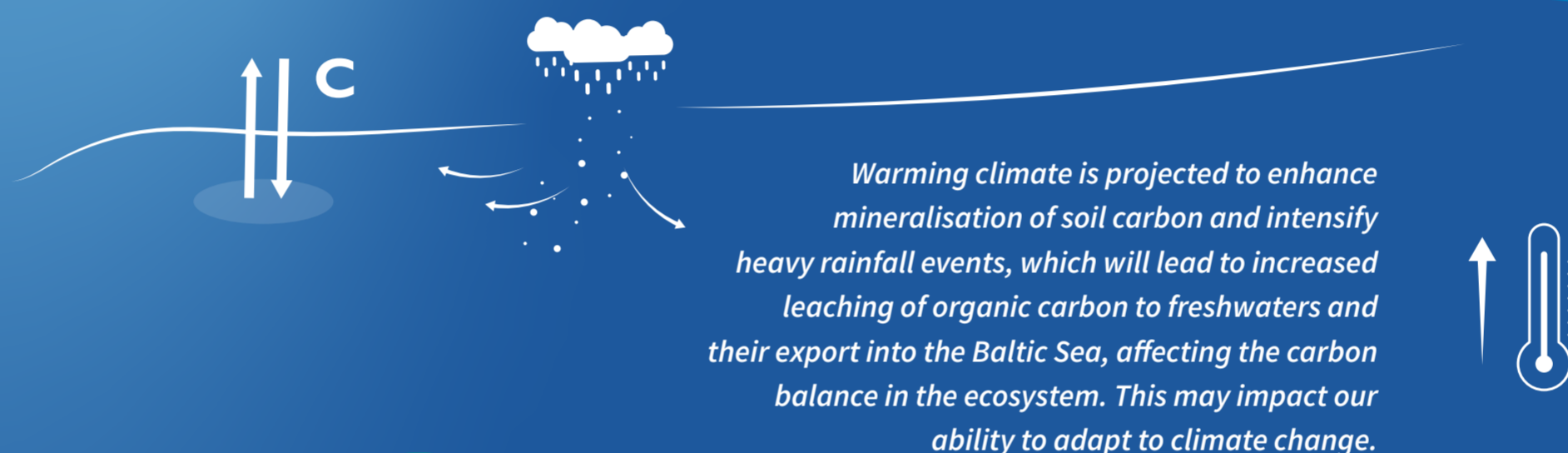
The Baltic Sea is under pressure from several types of human activities taking place on land: agriculture in particular, but also municipalities, industries and forestry substantially contribute to the pollution loads. Sea-based activities like aquaculture, shipping, fishing and tourism also play a role. These pressures, coupled with the effects of climate change, highlight the need for a balanced approach to protect the fragile ecosystem and cultural heritage of the area.

Sources: The European Maritime Spatial Planning Platform; [https://oceans-and-fisheries.ec.europa.eu/ocean/sea-basins/baltic-sea\\_en](https://oceans-and-fisheries.ec.europa.eu/ocean/sea-basins/baltic-sea_en); Greenwood & Hughes 2022

## Baltic Sea



## Societal relevance of key research topics at the Baltic Sea



### CARBON FLUXES, CARBON BUDGET

### KEY RESEARCH TOPICS

### HEAT WAVES

## Empower researchers to advance knowledge

+ Collaborative research communities



## Create opportunities for citizen scientists & innovators

+ Tech-ready citizen sentinels



## Support local authorities & sustainable development

+ Inspiration for future decision support products



## Inform & implement policies to protect society & nature

+ Enhanced availability of integrated observation data



Water Framework Directive  
Marine Strategy Framework Directive  
Urban Waste Water Treatment Directive  
Integrated Coastal Zone Management  
Sustainable Development Goals (SDGs) 2, 3, 6, 13, 14, 15

## What will scientists & local communities be testing in this LandSeaLot Integration Lab?

- Demonstrate how combining advanced Earth Observation (EO) technology with different numerical models (e.g. VEMALA and COHERENS), and automated and manual *in situ* observations, lead to better tracking of carbon movement from river to coastal areas;
- Carry out isotope analysis to better understand carbon exchanges and flows;
- Merge satellite data on sea surface temperatures with low-cost temperature sensors and chemical measurements to assess the impact of rising temperature on harmful cyanobacteria blooms and carbon breakdown in real time;
- Build stronger links amongst European research infrastructures.

# LET'S OBSERVE TOGETHER!

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