

German Environment Agency



Federal Agency for  
Nature Conservation

**Umwelt**   
**Bundesamt**

**Baltic Stakeholder Conference 26./27. September 2022**

# **Blue Carbon in the Baltic Sea Region – Excerpts from HELCOM Workshop 2021**

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## What to expect in the next minutes

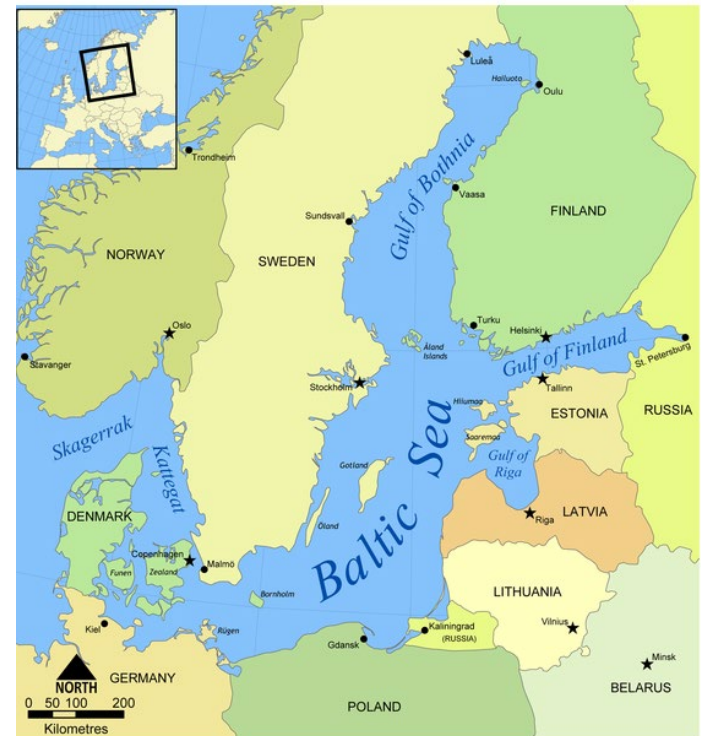
### BACKGROUND

### HELCOM BLUE CARBON WORKSHOP 2021

#### Projects and initiatives

#### Conditions for Blue Carbon in the Baltic Sea

### SUMMARY AND OUTLOOK

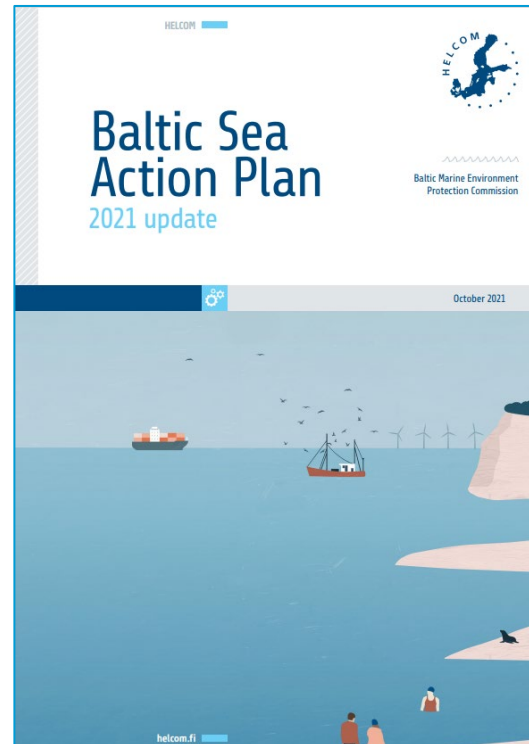


Source: [Baltic Sea map \(wikimedia.org\)](https://commons.wikimedia.org/wiki/File:Map_of_the_Baltic_Sea)

## Background

**Blue Carbon storage linking climate and marine (nature) protection**  
-> already in **2018 HELCOM Ministerial Declaration**

**Blue Carbon as a cross-cutting task in the updated Baltic Sea Action Plan (2021)**



Ministerial Declaration 2018, p.7, Paragraph 47:

„... to further adapt HELCOM’s policies and recommendations 1) in line with existing objectives of protection of the marine environment and sustainable use of marine resources, also under changing climate, and 2) to **maximise the capacity of the Baltic Sea ecosystems to contribute to mitigation of climate change through blue carbon storage.**“

Baltic Sea Action Plan (BSAP) 2021, Horizontal Topic 4 - Action: “Promote research that increases understanding of the role of the Baltic Sea land-sea system in the carbon cycle and identifies how **mitigation by natural blue carbon processes** can be maximised and implement suitable measures. Increased understanding should be utilised to enable consideration of additional management measures.”

## Background

### German HELCOM Chairmanship 2020-2022

#### Focus amongst others:

#### "Climate change and the Baltic Sea - understanding and responding"

- Integration of climate change and adaptation into HELCOM processes and measures
- "Blue Carbon" promoted as an emerging field of action
- Communication on interactions between climate action and marine protection
- Showcase ecologically sustainable adaption to advancing climate change effects along the Baltic coasts

Excerpt from the [Issues Paper for Germany's HELCOM Chairmanship](#):

„... Climate change is one of the most pressing environmental problems worldwide. The **impacts of climate change** have long been felt in the Baltic Sea and its coasts. Over the past two years, HELCOM has made major progress in tackling these problems.

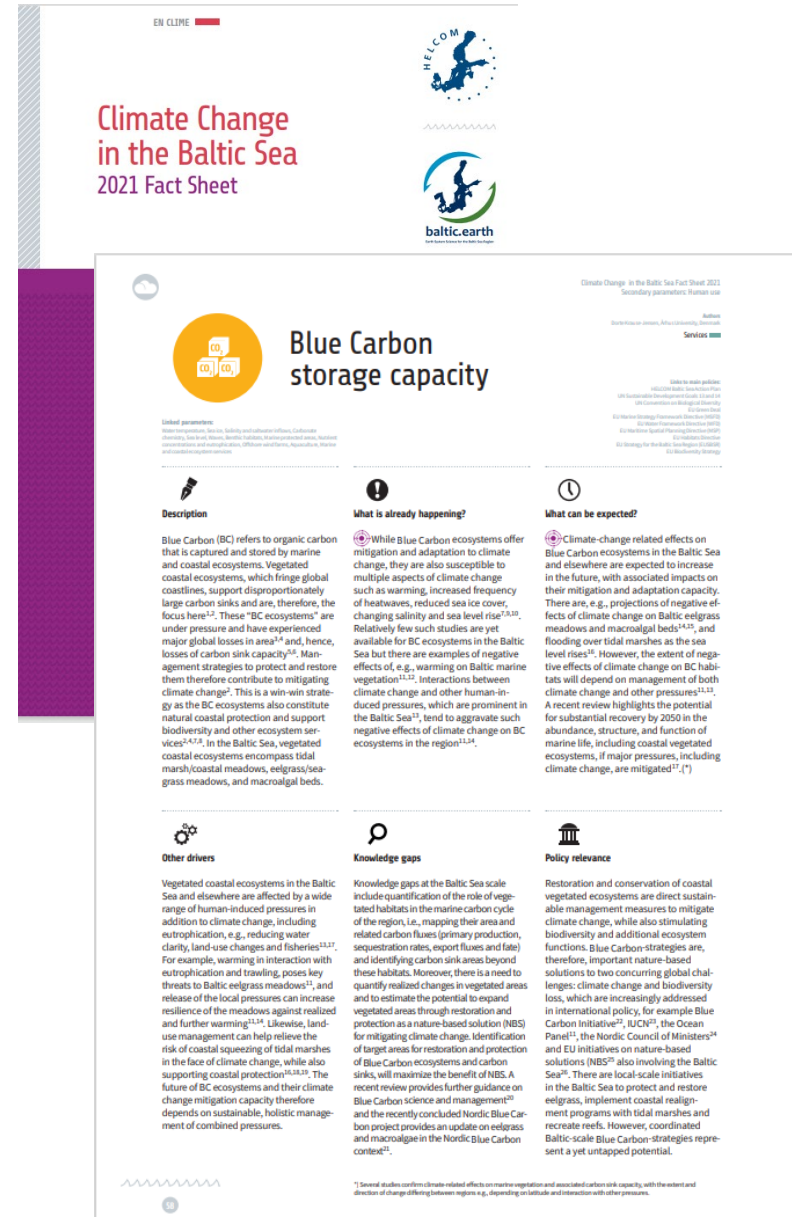
- We want to continue resolutely along our jointly chosen path of considering climate aspects in all of HELCOM's activities.
- We want to **further sound out the potential and relevance of blue carbon as natural carbon sinks in the Baltic Sea**, and assess possible options for action.
- We see an important role for HELCOM in explaining the interactions between climate action and marine protection, including for climate policy, to a wide audience.
- The project "Baltic Sea Coast Strategy 2100" is a good example of how the countries bordering the Baltic Sea can prepare in an ecologically sustainable way for possible impacts such as a rise in sea levels and an increase in extreme weather events."

## Background

### Blue Carbon storage capacity -> described in „Climate Change in the Baltic Sea 2021 Fact Sheet“

- Focus on vegetated coastal ecosystems
- Susceptible to multiple aspects of climate change
- Future BC capacity depends on holistic management of combined pressures
- Baltic-scale Blue Carbon strategy as an option

Source: HELCOM (2021) [Baltic Sea Climate Change Fact Sheet](#)



# HELCOM Blue Carbon Workshop 2021

**Hosted by Germany in November 2021  
together with HELCOM**

- Topic: “Blue Carbon Potential in the Baltic Sea region”
- Aim: Harmonize the perception of the term “Blue Carbon” and discuss scientific and political conditions for Blue Carbon in the Baltic Sea Region
- Lively exchange between about 40 experts from the Baltic Sea region
- Workshop report on the [HELCOM-Workshop website](#)



Baltic Marine Environment Protection Commission

Workshop on Blue Carbon Potential in the Baltic Sea region  
Online meeting, 17-18 November 2021

BLUE CARBON WS

## Report of the HELCOM Workshop on Blue Carbon Potential in the Baltic Sea region

### Introduction

0.1 The HELCOM Workshop on Blue Carbon Potential in the Baltic Sea region took place online on 17-18 November 2021. The list of participants is contained in Annex 1.

0.2 The Workshop was moderated by Mr. Ulrich Claussen from the German Environment Agency, UBA, and Mr. Jochen Krause, Federal Agency for Nature Conservation, BfN.

0.3 Ms. Petra Kääriä, Ms. Susanna Kaasinen and Mr. Dominik Littfass acted as secretaries of the workshop.

### Agenda Item 1 Opening of the workshop

#### Welcome messages

1.1 Mr. Ulrich Claussen kicked-off the Workshop and welcomed the participants, mentioning that the workshop had its origins in the priorities of the current German chairmanship of HELCOM, and that the outcomes of the workshop will be considered in future HELCOM work. He also highlighted the role of blue carbon for climate change mitigation in the Baltic Sea region.

1.2 Ms. Lilian Busse, HELCOM Chair and UBA Vice President, recalled that exploring the potential of Blue Carbon in the Baltic Sea was one of the priorities of the German chairmanship of HELCOM. She mentioned the Blue Carbon related actions contained in the updated [Baltic Sea Action Plan \(BSAP\)](#), further stressing that climate change action needs to go hand in hand with work on other topics such as eutrophication and marine protected areas. Furthermore, she highlighted the role played by blue carbon at the recently held UN COP 26, mentioning that the issue was addressed in various sessions and side events that emphasized the role of oceans and seas in carbon sequestration as a nature-based mitigation solution.

1.3 Ms. Britta Kniefelkamp, BfN Head of Directorate “Marine Nature Conservation”, emphasized the particular role blue carbon can play in combining two of the most pressing issues we are facing today, namely climate change and biodiversity loss. She highlighted the potential of seagrass meadows, marshes, and peatlands in particular and of healthy oceans and seas in general for binding CO<sub>2</sub>, and therefore having positive effects on society and supporting our efforts on climate change.

1.4 Mr. Rüdiger Stempel, HELCOM Executive Secretary, pointed out that climate change is already tangibly affecting the Baltic Sea and that, besides increasing the overall resilience of climate change to the Baltic Sea, mitigation measures are also needed, further highlighting that blue carbon measures are contained in the recently updated Baltic Sea Action Plan. In a reference to [a video that went viral at COP26](#), he further emphasized the dire need for urgent action on climate change.

#### Keynote presentations

1.5 Ms. Dorte Krause-Jensen, Aarhus University, Denmark, gave a keynote presentation on “Vegetated coastal ecosystems, blue carbon and nature-based solutions in the Baltic area and beyond” ([Presentation 1](#)). In her presentation, she pointed out the role of marine vegetation such as marine and blue forests as natural or nature-based solutions to the coupled crises of climate change and biodiversity loss,

Source: [HELCOM Blue Carbon Workshop Report \(2021\)](#)

## HELCOM Blue Carbon Workshop 2021

### Blue Carbon projects in the Baltic Sea area (excerpt from several projects compiled)

#### - PROJECTS AND INITIATIVES

#### - CONDITIONS FOR BLUE CARBON IN THE BALTIC SEA REGION

- **INTEGRAL** - Integrated carbon TracE Gas monitoRing for the bALtic sea
- **Sea4soCiety** - Searching for solutions for Carbon sequestration in coastal ecosystems
- **Oceanic Outwelling** - Resolving the missing carbon sink in blue carbon ecosystems
- **SeaStore** - Seaweed restoration
- **CoastClim** - Centre for Coastal Ecosystem and Climate Research

Source: HELCOM Blue Carbon Workshop Report (2021)

# HELCOM Blue Carbon Workshop 2021

- PROJECTS AND INITIATIVES
- CONDITIONS FOR BLUE CARBON IN THE BALTIC SEA REGION



**SeaStore**  
Diversity Enhancement Through  
Seagrass Restoration

RESEARCH FOCUS AREAS

### From the microbiome to public support

Restoring seagrass meadows means providing a tremendously important service not just for the ocean, but for all humanity. Yet the success of restoration efforts depends on a complex interplay of factors, all of which are being investigated in the joint project SeaStore.



**CO<sub>2</sub> Reservoirs**

Seagrasses remove the greenhouse gas carbon dioxide from seawater and store the carbon underground – at a higher rate than any forest on land.



**Biodiversity**

Seagrasses offer a habitat for thousands of species and help ensure that millions of people around the globe have enough fish to eat.



**Coastal Protection**

Seagrasses offer effective coastal protection. They slow waves, hold together sand and sediments, and prevent erosion far beyond their own borders.

Source: adapted from SeaStore website <https://www.seegrasswiesen.de/en/seagrass-research-project/mission/>



## HELCOM Blue Carbon Workshop 2021



Research group

### Centre for Coastal Ecosystem and Climate Change Research (CoastClim)

[Stockholm University](#) < [Research](#) < [Research groups](#)

The Centre for Coastal Ecosystem and Climate Change Research (CoastClim) is a multidisciplinary strategic partnership and research infrastructure project between Stockholm University and the University of Helsinki. The research within CoastClim evaluates the links between coastal biodiversity, carbon cycling, and climate feedbacks.

#### - PROJECTS AND INITIATIVES

#### - CONDITIONS FOR BLUE CARBON IN THE BALTIC SEA REGION

Sources: Website of [CoastClim](#); Website of [Stockholm University \(su.se\)](#)

## HELCOM Blue Carbon Workshop 2021

### IDENTIFIED BARRIERS TO CONSERVATION AND RESTORATION OF BLUE CARBON HABITATS

#### - PROJECTS AND INITIATIVES

#### - CONDITIONS FOR BLUE CARBON IN THE BALTIC SEA REGION

- Lack of **consensus on blue carbon perception/definition**
- Insufficient **management**; competing/economic interests for **coastal land use** (e.g. tourism, dikes) or **at sea** where fishing activities may disturb sediments and seagrass beds
- Limited **coordination and integration between sectors**, but also between **blue carbon projects**
- Little support from **stakeholders outside academia**; lack of **funding**
- Lack of **political will** and adequate **national legislation**
- Effects of **climate change** for blue carbon habitats
- Lack of **research** and available data
- Lack of **knowledge** and **knowledge transfer**

Source: HELCOM Blue Carbon Workshop Report (2021)

## HELCOM Blue Carbon Workshop 2021

### PROPOSED SOLUTIONS FOR THE CONSERVATION AND RESTORATION OF BLUE CARBON HABITATS

#### - PROJECTS AND INITIATIVES

#### - CONDITIONS FOR BLUE CARBON IN THE BALTIC SEA REGION

- Better understanding and **consensus on blue carbon habitats**
- Full and rapid **implementation of the Baltic Sea Action Plan** (BSAP); more binding liability
- Point out **costs of inaction** (business as usual) and **benefits of investing** to policy makers and companies; support by **sustainable finance sector**
- Promotion of relevant **research**; better linking of existing data; large-scale **mapping**; reprocessing of historical data
- Provision of **case studies**; assessment of the **viability/ risks/ limits** of blue carbon habitats
- **improved communication with stakeholders**; involvement of HELCOM working or expert groups; **information campaigns**

Source: HELCOM Blue Carbon Workshop Report (2021)

## Summary

- Definition of the term “Blue Carbon” not yet completed but sufficient to work with!
- Projects and initiatives in the Baltic Sea region are ready to support implementation
- Options for blue carbon habitats need to be locally examined and improved; transboundary or regional cooperation can provide assistance
- Focusing on blue carbon or similar nature-based solutions should not be an excuse to not reduce greenhouse gas emissions at source

Excerpt from the workshop report 2021, p. 6, paragraph 5.1:

“...

“Blue Carbon” is one form of marine-based carbon dioxide removal (CDR).

“Blue Carbon” in the Baltic Sea region is the net organic and inorganic carbon sequestered and stored in coastal\*, brackish and marine ecosystems\*\*. For climate change mitigation long term [carbon] storage needs to be achieved.

**In the Baltic Sea region, “Blue Carbon” includes coastal, brackish, and marine ecosystems, e.g., saltmarshes, seagrass beds, macroalgae and sediments.**

Inclusion of peatlands interacting with the coastal zone of the Baltic Sea is under discussion. New knowledge may add marine organisms, e.g., fish [to the definition].

The possibility to sequester and store carbon should not hamper efforts to avoid and reduce climate-driving (greenhouse gas) emissions.”

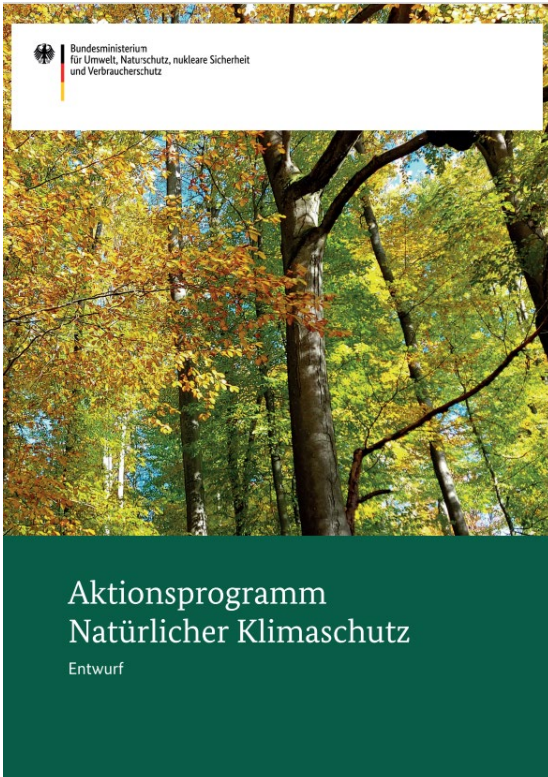
# Outlook – Blue carbon a hot topic in Germany

**Selection of German and international research projects**



	<u>Seagrass meadows</u>	<u>Salt marshes</u>	<u>Sediments</u>	<u>Macroalgae</u>	<u>Dissolved carbon pools</u>
<u>North Sea</u>	  	 			
<u>Baltic Sea</u>					

Source: Presentation of BfN-[DEFINE-Project](#) (AWI/BfN), 2022



**German Action Programme on Natural Climate Protection of the Ministry of the Environment (currently in draft version) as great opportunity to foster integrative activities for "Blue Carbon" habitats**

Source: [Aktionsprogramm Natürlicher Klimaschutz](#)

## Take Home Messages

Nature-based climate mitigation is to be strengthened in the Baltic Sea Region – implementing BSAP as one important step.

Stakeholders from all relevant sectors are needed to increase broader knowledge and build up comprehensive protection of valuable Blue Carbon habitats.

Germany has taken up the issue of Blue Carbon and will continue to support the development of sustainable measures.



*What  
will be  
your  
contribution?*

# Thank you for your attention!

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and

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