

Role of Blue Carbon in the ANK (Federal Action Plan for nature-based solutions for climate and biodiversity)

Claudia Morys, Federal Agency for Nature Conservation, "Marine Protected Areas in the EEZ"

NABU-Workshop on best practices (online): restoration in the German Wadden Sea for climate, coast and nature, 15th June 2023

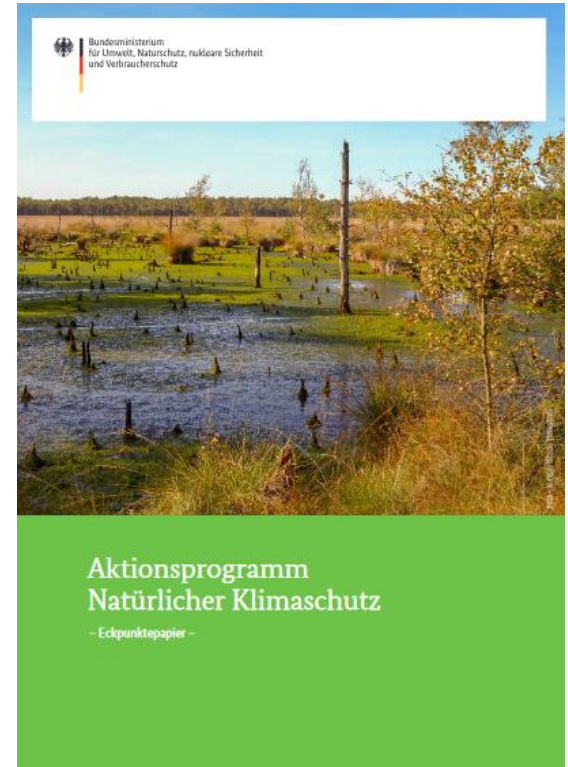




- Coalition agreement: programme on CO₂ storage capacity
- Key issue paper: March 2022
- Fast Track call: July 2022
- Public participation: autumn 2022
- Cabinet decision: March 2023
- Participation of the counties

- Intact ecosystems are a natural defense against climate change.
- Many intact ecosystems remove carbon dioxide from the atmosphere and store it in the long term.

„The Federal Action Plan will protect, strengthen and restore ecosystems. The plan links climate action with nature conservation and ensures that degraded ecosystems regain their health, their resilience and their biodiversity through a variety of measures.“



10 fields of action

1. Wetlands

2. Rivers, lakes, meadows

★ Coasts and seas

4. Wilderness and protected areas

5. Forests

6. Soils as carbon storages

7. Urban and traffic areas

★ Data collection, monitoring, modeling and reporting

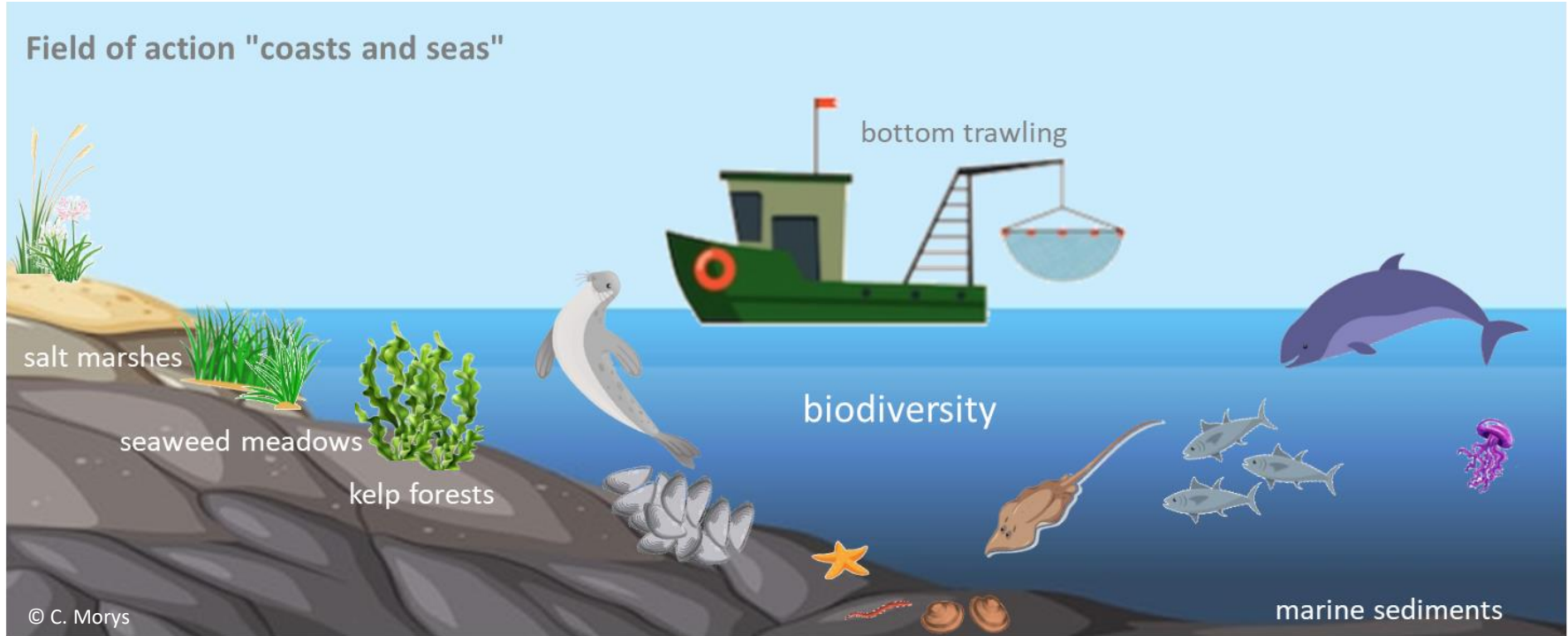
9. Research

10. Cooperation within EU and internationally

- 69 measures in total
- 4 billion euros until 2026 for implementation (117 million euros for “coasts and seas”)



Coasts and seas



Data collection, monitoring, modeling and reporting

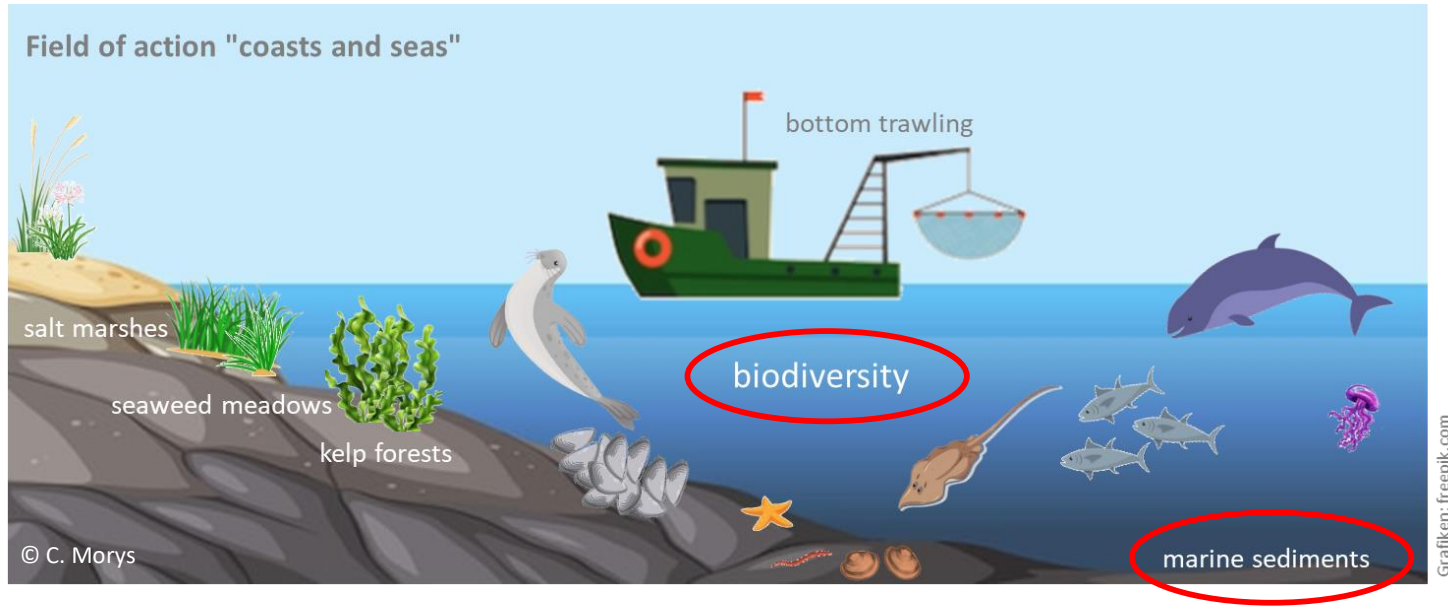


New generation:

- CO₂ + CH₄ sensors (atmosphere and water column)
- Sediment samples during maintenance (90 d)

Coasts and seas

- Counties are mainly responsible for implementing measures: salt marsh, seagrass and kelp



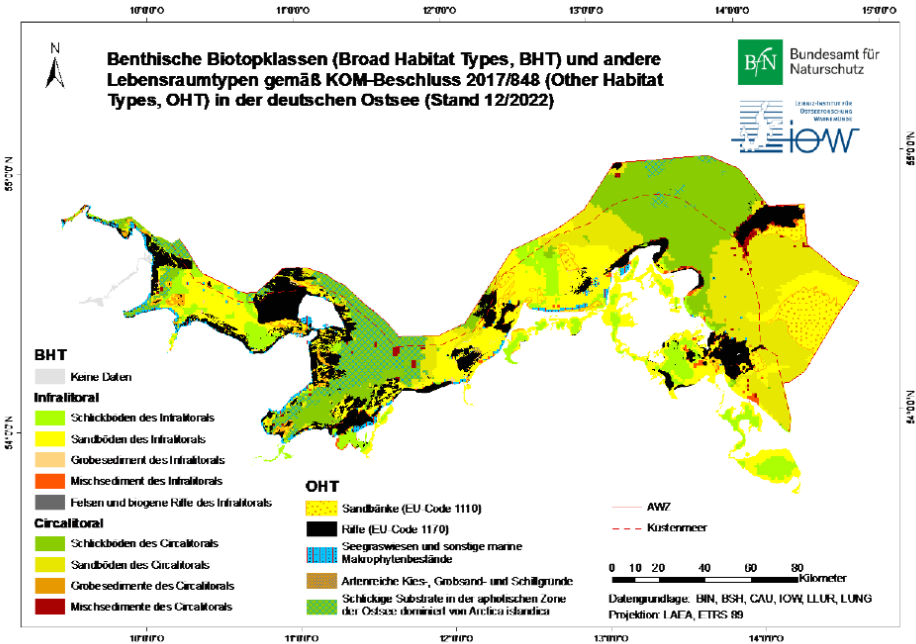
Carbon storage capacity of marine sediments in the German Baltic Sea



- Largest carbon sinks on earth
- Yet no study on Blue Carbon potential in sediments of the Baltic Sea
- Yet only poor budgets

Aims:

1. Development and standardization of methods for evaluating natural C-storage potential of marine sediments
2. Mapping and evaluation of natural C-storage potential in the various sediment biotopes in the German Baltic Sea
3. Distribution map of C-rich sediments highlighting potential climate protection zones



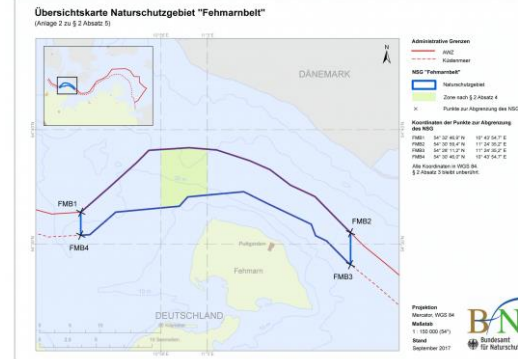
Distribution of various sediment types in the German Baltic Sea.
© BfN/K. Heinicke

Role of *Arctica islandica* for carbon storage and biodiversity in the Baltic Sea

- „climate-archive“ (Schöne et al., 2005; Schöne 2013)
- Yet unknown role within C-cycle
- Yet unknown genetic independency of the population in the German MPA "Fehmarn-Belt"

Aims:

1. Clarification of the role as a carbon sink or source and the importance for its associated biotopes
2. Investigation of the effects of climate change on the population and reproduction
3. Estimation of the value regarding biodiversity (species/biotope)



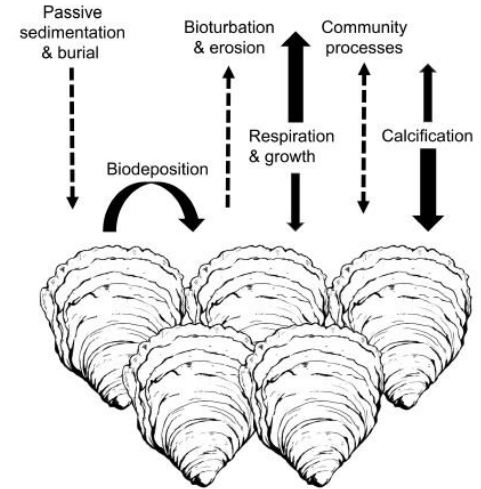
MPA "Fehmarnbelt", 22nd September 2017. © BfN

Blue Carbon potential of biogenic reefs in the German Baltic Sea

- Biogenic reefs with important ecosystems services, such as increasing biodiversity
- Yet Blue Carbon potential of biogenic reefs is discussed controversially
- Yet only poor budgets

Aims:

1. Clarify the role as a carbon sink or source and identify factors for this assignment
2. Calculation of C- budgets
3. Scaling to historic, present und future population desities

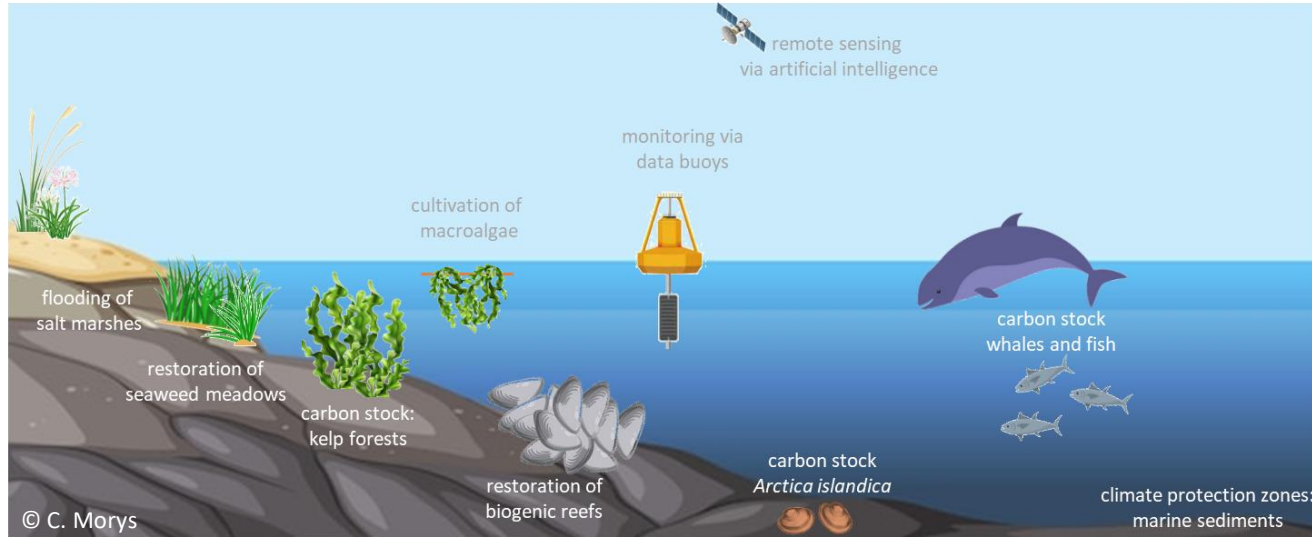


Concept of C-budget in biogenic reefs, European Oyster as an example, Lee et al. 2021

Nature never stops working for people.
 From microscopic organisms to mammals.



Summary and future steps



BC potential addressed by the Action Plan:

- Salt marshes
- Seagrass meadows
- Kelp forests
- Sediments
- Biogenic reefs
- *Arctica islandica*

Other potential nbs:

- Carbon stock of fish and whales, other species?

Thank you for your attention!

