



**There is carbon on the shelf!  
Quantifying and valuing coastal and shelf sea  
carbon for policy making and management  
purposes**

**Silke Kröger**

**The Future Oceans<sub>2</sub> IMBeR Open Science Conference**

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# Blue carbon and shelf sea sediments; estimating stocks in the surface layer

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Quantifying and valuing carbon flows and stores in coastal and shelf ecosystems in the UK

Tiziana Luisetti<sup>a,\*</sup>, R. Kerry Turner<sup>b</sup>, Julian E. Andrews<sup>b</sup>, Timothy D. Jickells<sup>b</sup>, Silke Kröger<sup>a</sup>, Markus Diesing<sup>a,c</sup>, Lucille Paltriguera<sup>a,d</sup>, Martin T. Johnson<sup>a,b</sup>, Eleanor R. Parker<sup>a</sup>, Dorothee C.E. Bakker<sup>b</sup>, Keith Weston<sup>a</sup>

<sup>a</sup> Centre for Environment, Fisheries, and Aquaculture Science (Cefas), Pakefield Road, Lowestoft, Suffolk NR33 0HT, UK

<sup>b</sup> University of East Anglia, Norwich Research Park, Norwich NR4 7TJ, UK

<sup>c</sup> Geological Survey of Norway, Postal Box 6315 Torgarden, 7491 Trondheim, Norway

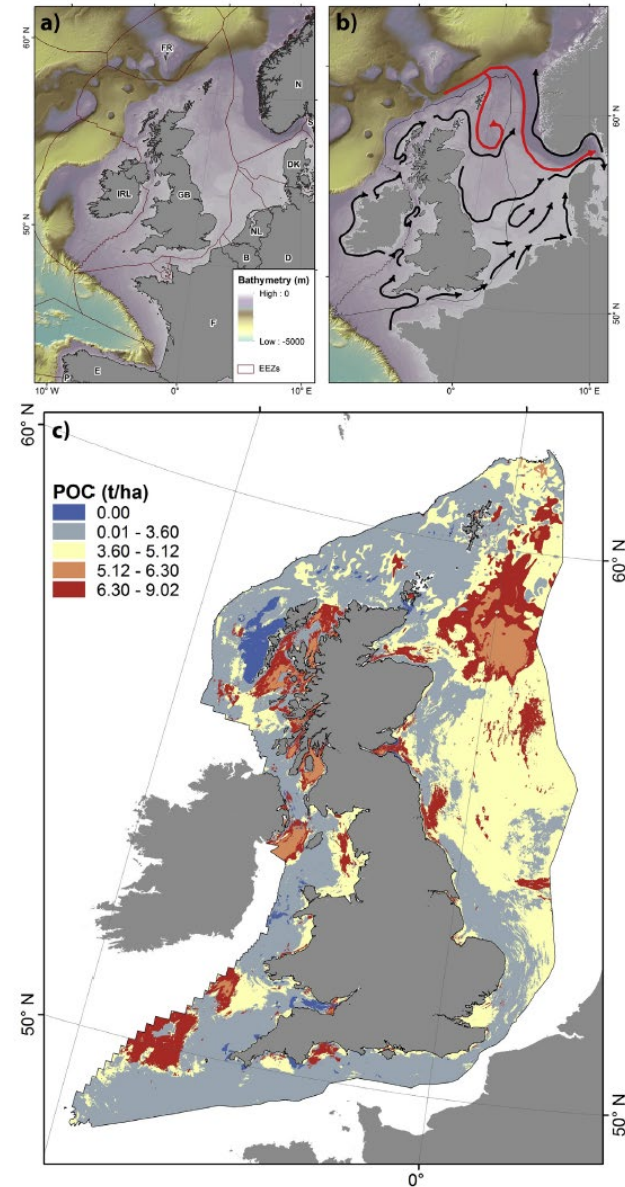
<sup>d</sup> Yorkshire Water, Western Way, Bradford BD6 2SZ, UK



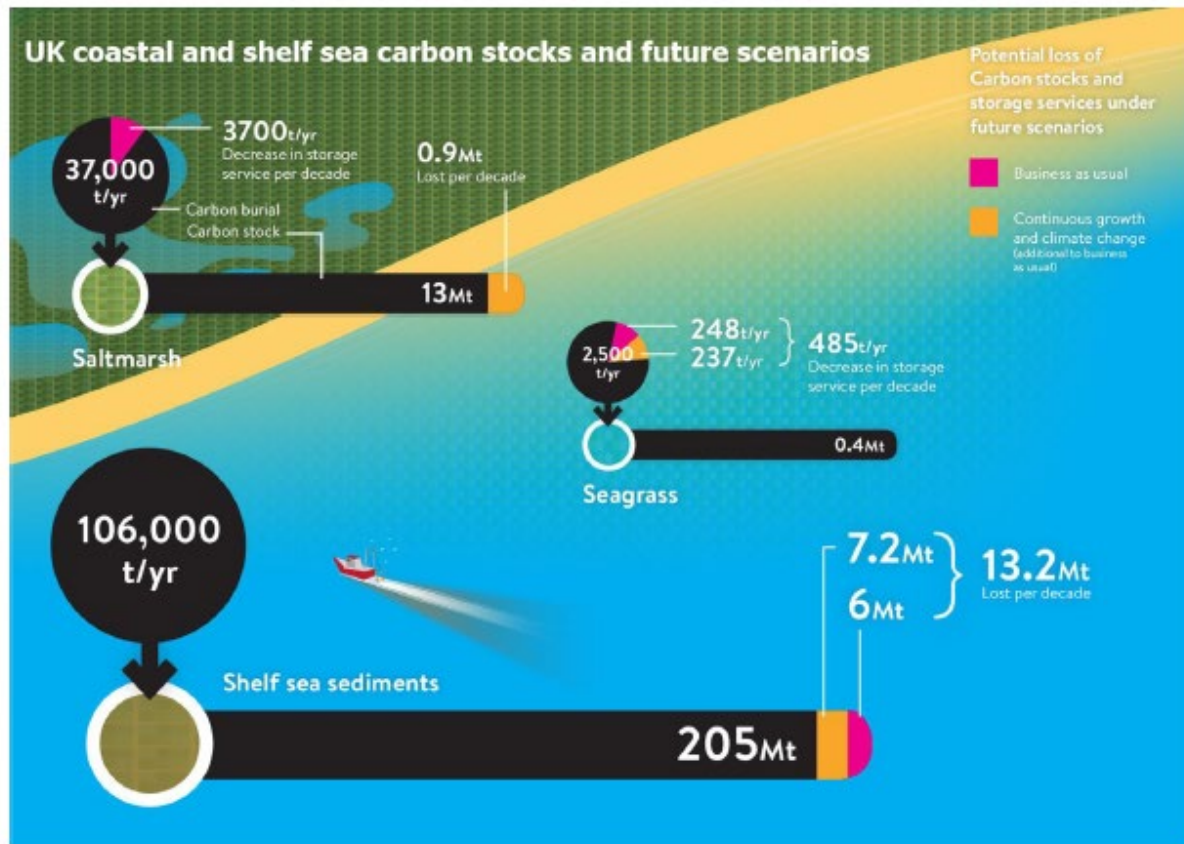
**c** Particulate organic carbon (POC) concentration and stocks of the upper 10 cm of the sediment column in t/ha

**b** Generalised water circulation patterns

**a** EEZs



# UK's coastal and shelf sea C stocks and potential loss of C stocks and storage services under future scenarios



## Scenarios:

Business as usual  
Continuous growth and climate change

## Ecosystems:

Saltmarshes  
Seagrasses  
Shelf sea sediments

# Key Points

- Offshore shelf sea sediments are a manageable carbon store as important as forests.
- Offshore shelf sea sediments are currently not protected by international agreements.
- With scenario analysis (25-years) we estimate damage costs up to US\$12.5 billion.
- Uncertainties: estimates of UK shelf sediment sedimentation rates and trawling impact.
- The main challenge: protect marine habitats whilst maintaining food security.