

Research activities

The North Sea's coastline is an interesting research region at the interface between land and sea. In particular with regard to potential impacts of climate change and sea level rise and the development of adaptation strategies. The two research projects RELEEZE and SALTSA focus on nature and coastal protection and groundwater salinisation.



RELEEZE

RELEase from coastal squEEZE: Understanding and preventing critical tipping points under future sea level rise

Future sea level rise may alter the sedimentation dynamic that currently feeds the tidal system of the Wadden Sea. If reaching a critical tipping-point, this development might result in the loss of unique Wadden Sea fauna and flora, as well as its buffering function for coastal protection. Together with scientists and affected stakeholders, RELEEZE aims to create better understanding of this critical tipping point and simultaneously develop adaptation options.

Research focus

- Better understanding of the social-ecological tipping point
- Identification of management options for barrier islands and the mainland coast
- Analysis of social, cultural, psychological, economic, regulatory and political conditions and drivers of coastal and nature protection
- Actor and stakeholder analyses
- Transdisciplinary co-design of the research

Selected Publication

Von Gleich, A./Siebenhüner, B. (Eds.) (2015): *Regionale Klimaanpassung im Küstenraum*. Marburg: Metropolis.

SALTSA

Groundwater salinisation following sea level rise as a societal challenge of climate adaptation –

The case of North-Western Germany

Groundwater salinisation is a phenomenon that is progressing slow and a problem which has been overseen for a long time by society and decision makers. It is crucial to understand the vulnerability of groundwater systems and to understand the primary factors that determine the magnitude of system response to develop effective management and adaptation strategies in coastal zones.

Research focus

- Identification of the response of the coastal aquifers to sea level rise
- Numerical 3-dimensional variable density-dependent groundwater modelling of the present situation
- Investigation of socio-economic consequences
- Development and modelling of future scenarios
- Development of adaptation measures and policy recommendations



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Field of Activity

- Ecological Economics
- Social learning & collective learning processes
- International Environmental Policies
- Ecosystem Services
- Transdisciplinary and participative Methods
- Climate Change & Biodiversity
- Sustainable Land Use and City Development
- Sustainability Reporting

Regular Courses

- International Sustainability Management
- Environmental and Sustainability Policies
- Corporate Ecological Policies
- Ecological Economics
- International Environmental Governance
- Practical Projects in Sustainability Economics and Management
- Colloquium for Bachelor-, Master- and PhD-Students
- Cases in Coastal Zone Management