

Team

Baltic TRANSCOAST

The German Baltic Sea Coast as Interface of Water and Matter Fluxes between Land and Sea

Baltic TRANSCOAST is a collaborative effort of 14 scientists of the University of Rostock and the Leibniz Institute for Baltic Sea Research who are organized jointly in the Department Maritime Systems of the Interdisciplinary Faculty of the University of Rostock.

Associated researchers, who provide excellence and competence to specific aspects of the planned research and strengthen the international collaboration. They come from the US, Canada, and Germany and stay in Rostock as so-called Mercator fellows (currently 6) to share their expertise. 13 PhD students are currently working on their theses (1st cohort from 2016 to 2018) and carry out joint research with up to 12 associated PhD students.

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University of Rostock &
Leibniz Institute for Baltic Sea Research

Baltic TRANSCOAST
DFG Research Training Group
GRK 2000

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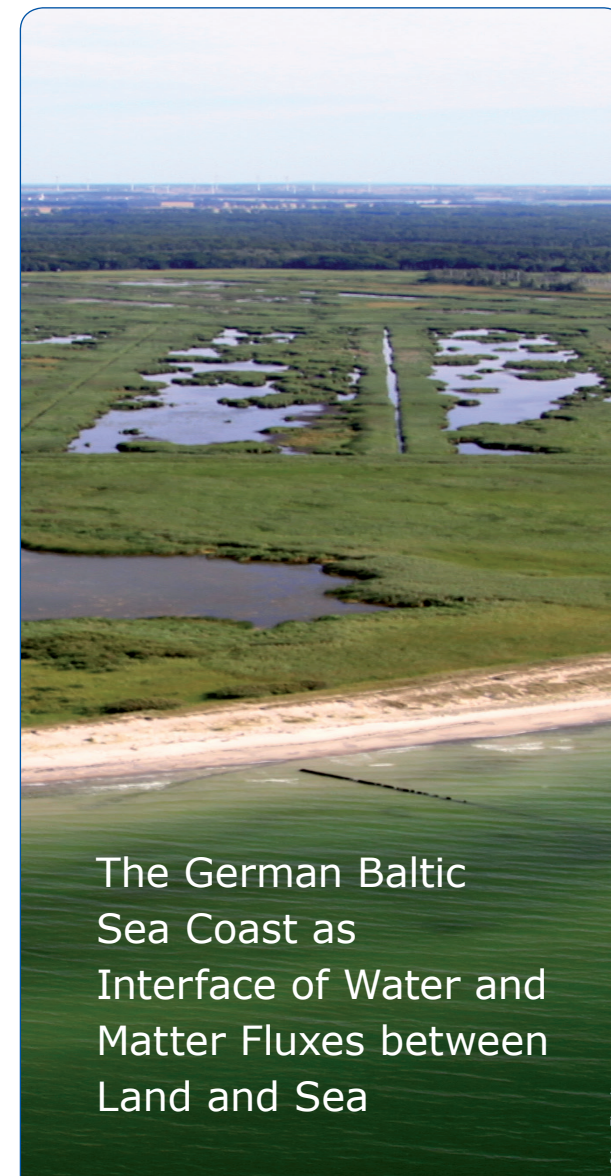
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Sea Coast as
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BALTIC TRANSCOAST
DFG RESEARCH
TRAINING GROUP
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Overview

Baltic TRANSCOAST

investigates the hydrodynamic, (bio)geochemical and biological processes at the interface between land and sea. A fundamental understanding of exchange processes along coastlines is essential for developing sustainable management strategies.



Baltic TRANSCOAST

studies the water and matter fluxes at the ecocline between low-lying peatland and the adjacent shallow sea, and how biota are influencing them.



Baltic TRANSCOAST

follows a comprehensive and innovative qualification programme for early career scientists to provide excellent education in marine and terrestrial sciences. The PhD students gain interdisciplinary expertise in coastal research.



Qualification

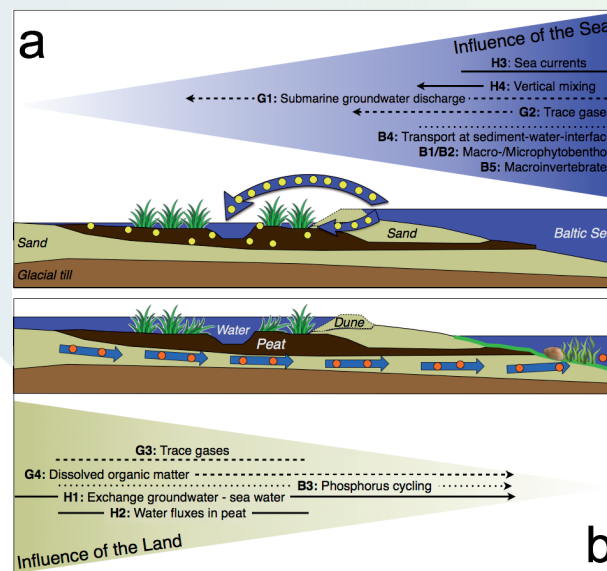
Baltic TRANSCOAST provides exciting opportunities for PhD students to become experts of coastal systems. We aim at providing the PhD candidates with a profound understanding of coastal processes, but also with soft skills such as leadership and team work. An intense scientific discourse among PhD students and their supervisors is fostered through seminars and retreats.

Many workshops are held as retreats and summer schools at Baltic partner institutions (in Sweden and Finland) or nearby



Rostock. The training programme of Baltic TRANSCOAST is designed in a way that the PhD students are gaining increasing responsibility for the content and organisation of the courses. At the monthly Baltic TRANSCOAST seminar the

students present their research and get lectures from national and international experts and have, thus, a great opportunity to discuss their challenges, findings, and conclusions in a transdisciplinary setting with leaders in their fields.



Research

Motivation

Coastal areas are among the most intensively modified and populated areas on our planet. Sea level rise is predicted in future. On the terrestrial side, higher amplitudes of (ground) water discharge are anticipated. The interaction between land and sea will therefore increase, especially along shallow coasts at low-lying land areas.

Research question

Overall, we want to foster our understanding of the processes that govern shallow coasts at low-lying land areas. We investigate how the terrestrial and marine zones influence each other. The research is organized around three research fields covering hydrodynamic, (bio)geochemical and biological processes.



Research fields

Hydrodynamic Processes (H topics)

We assess how the peatlands water balance, the current dynamics and hydraulic properties of the marine sediments, and the subsoil influence sea water intrusions into the peatland and/or submarine groundwater discharge into the Baltic Sea.

(Bio)Geochemical Processes (G topics)

We evaluate how (bio)geochemical transformation processes both in the marine and the terrestrial part of the coast are influenced by water and matter inputs from the respective other coastal domain.

Biological Processes (B topics)

We investigate how primary production and the composition of the micro- and macro-phytobenthos in the shallow Baltic Sea influence matter transformation processes.