

## GC34A-03 Prospects of the New Science and Outreach Network Baltic Earth with Results of the Second Climate Change Assessment for the Baltic Sea Region (BACC II)

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The Baltic Sea region in Northern Europe spans different climate and population zones, from a temperate, highly populated, industrialized south with intensive agriculture to a boreal, rural north. It represents an old cultural landscape, and the Baltic Sea itself is among the most intensively studied sea areas of the world.

Baltic Earth is the new Earth system research network for the Baltic Sea region. It is the successor to BALTEX, which was terminated in June 2013 after 20 years and two successful phases. Baltic Earth stands for the vision to achieve an improved Earth system understanding of the Baltic Sea region. This means that the research disciplines of BALTEX continue to be relevant, i.e. atmospheric and climate sciences, hydrology, oceanography and biogeochemistry, but a more holistic view of the Earth system encompassing processes in the atmosphere, on land and in the sea as well as in the anthroposphere shall gain in importance in Baltic Earth.

Specific grand research challenges have been formulated, representing interdisciplinary research questions to be tackled in the coming years. A major means will be scientific assessments of particular research topics by expert groups, similar to the BACC approach, which shall help to identify knowledge gaps and develop research strategies. A major outcome of Baltic Earth will be the update of the BALTEX Assessment of Climate Change for the Baltic Sea Basin (BACC II).

This new study after 5 years finds the results of BACC I still valid. Climate change can be detected at the regional scale but attribution is still weak. The effect of changing atmospheric aerosol loads and land use change is largely unknown so far and needs further attention in the coming years. For the observed changes in biogeochemical and ecological systems, multiple drivers are at work of which climate change is one. Their relative importance still needs to be evaluated.

When addressing climate change impacts on e.g. forestry, agriculture, urban complexes and the marine and terrestrial environment in the Baltic Sea basin, a broad perspective is needed which considers not only climate change but also other significant factors such as emission changes, demographic, economic as well as land-use changes.





# Baltic Earth

## Earth System Science for the Baltic Sea Region

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