

7th Study Conference on BALTEX
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This abstract is intended for

- Oral presentation X
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This abstract fits best into the topic (see the conference website for more information):

- Improved understanding of energy and water cycles under changing conditions
- Analysis of climate variability and change, and provision of regional climate projections over the Baltic Sea basin for the 21st century X
- Provision of improved tools for water management, with an emphasis on extreme hydrological events and long-term changes
- Biogeochemical cycles in the Baltic Sea basin and transport processes within the regional Earth system under anthropogenic influence

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The second BACC assessment: a preliminary summary of key finding

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1. BALTEX Assessment of Climate Change for the Baltic Sea basin - BACC

The BACC effort was launched in 2004 for establishing which scientifically legitimized knowledge about climate change and its impacts is available for the Baltic Sea catchment. For the first report, concluded and published as a book (Figure 1) in 2008, approximately 80 scientists from 12 countries have documented and assessed the published knowledge in 2008 in BACC (BACC, 2008; Reckermann et al., 2008).

The assessment has been accepted by the intergovernmental HELCOM commission as a basis for its future deliberations (HELCOM, 2007).

In 2009 the second assessment report (BACC II) has been launched; the report is expected to be concluded in 2013; the printed book will become available in 2014.

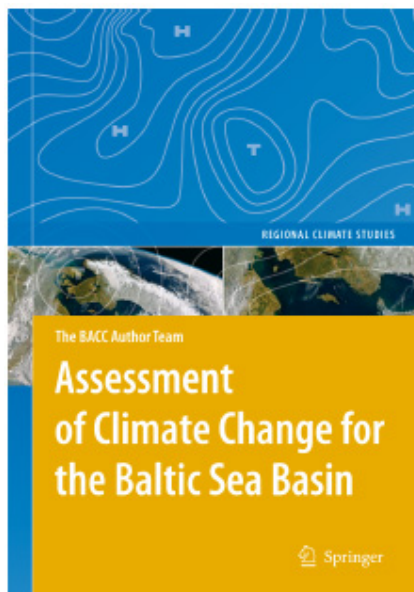


Figure 1. Cover of BACC book from 2008. The book is by now no longer under copyright, and can be downloaded from http://www.academia.edu/2266407/BACC_Assessment_of_Climate_Change_in_the_Baltic_Sea_Basin

2. Principles of BACC procedure

- The assessment is a synthesis of material drawn comprehensively from the available scientifically legitimate literature (e.g. peer reviewed literature, conference proceedings, reports of scientific institutes).
- Influence or funding from groups with a political, economical or ideological agenda is not be allowed; however, questions from such groups are welcome.
- If a consensus view cannot be found in the above defined literature, this is clearly stated and the differing views are documented. The assessment thus encompasses the knowledge about what scientists agree

on but also identify cases of disagreement or knowledge gaps.

- The assessment is evaluated by independent scientific reviewers.

3. BACC I results from 2008 in short

- Presently a warming is going on in the Baltic Sea region, and will continue throughout the 21st century.
- BACC considers it plausible that this warming is at least partly related to anthropogenic factors.
- So far, and in the next few decades, the signal is limited to temperature and directly related variables, such as ice conditions.
- Later, changes in the water cycle are expected to become obvious.
- This regional warming will have a variety of effects on terrestrial and marine ecosystems – some predictable such as the changes in the phenology others so far hardly predictable.

4. Preliminary list of key consensus findings

- New assessment finds results of BACC I are valid
- Significant detail and additional material has been found and assessed. Some contested issues have been reconciled (e.g. sea surface temperature trends)
- Ability to run multi-model ensembles seems a major addition; first signs of detection studies, but attribution still weak
- Regional climate models still suffer from partly severe biases; the effect of certain drivers (aerosols, land use change) on regional climate statistics cannot be described by these models.
- Homogeneity is still a problem and sometimes not taken seriously enough
- The issue of multiple drivers on ecosystems and socio-economy is recognized, but more efforts to deal with are needed
- In many cases, the relative importance of different drivers, not only climate change, needs to be evaluated.

References

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- Reckermann, M., H.-J. Isemer and H. von Storch, 2008: Climate Change Assessment for the Baltic Sea Basin. EOS Trans. Amer. Geophys. U., 161-162