



Minutes of the  
12<sup>th</sup> Meeting  
of the Baltic Earth  
Science Steering Group

held at

**TalTech**  
**Tallinn University of Technology**  
**Tallinn, Estonia**

**28 November 2018**

*Edited by*  
***Marcus Reckermann***

## Participants at the 12<sup>th</sup> Baltic Earth Science Steering Group meeting (alphabetically):

Last name	First name	Affiliation	Function
Andrusaitis	Andris	BONUS EEIG, Helsinki, Finland	BESAB observer
Berger	Franz	German Westher Service, Lindenberg, Germany	BESSG member
Dailiniende	Inga	Klaipeda University, Lithuania	BESSG member
Danilovich	Irina	Institute for Nature Management NAS of Belarus	BESSG member
Elken	Jüri	TalTech, Tallinn, Estonia	BESAB Chair
Gröger	Matthias	Swedish Meteorological and Hydrological Institute, Norrköping, Sweden	BESSG member
Haldin	Jannica	HELCOM Secretariat, Helsinki, Finland	BESAB member
Hoikkala	Laura	HELCOM Secretariat, Helsinki, Finland	Guest
Käyhkö	Jukka	University of Turku, Finland	Guest
Kjellström	Erik	Swedish Meteorological and Hydrological Institute, Norrköping, Sweden	Guest
Kulinski	Karol	Institute of Oceanology PAN, Sopot, Poland	BESSG member
Lehmann	Andreas	GEOMAR, Kiel, Germany	BESSG member
Lips	Urmas	TalTech, Tallinn, Estonia	BESSG member
Meier	Markus	Leibniz-Institute for Baltic Sea Research, Warnemünde, Germany	BESSG Chair
Myrberg	Kai	Finnish Environment Institute SYKE, Helsinki, Finland	BESSG member
Parnell	Kevin	TalTech, Tallinn, Estonia	Guest
Post	Piia	University of Tartu, Estonia	BESSG member
Reckermann	Marcus	International Baltic Earth Secretariat at Helmholtz-Zentrum Geesthacht, Germany	IBES, BESSG member
Rehder	Gregor	Leibniz-Institute for Baltic Sea Research, Warnemünde, Germany	BESSG member
Rutgersson	Anna	Uppsala University, Sweden	BESSG member
Soomere	Tarmo	TalTech, Tallinn, Estonia	BESSG member
Stendel	Martin	Danish Meteorological Institute	BESSG member
Zhuravlev	Sergej	State Hydrological Institute, St. Petersburg, Russia	BESSG member

## Summary of Decisions and Action Items

**Decision 1:** Baltic Earth Assessment Reports (BEARs) will be produced; lead authors have been identified which recruit contributing authors.

**Decision 2:** A BACC III report on regional climate change in the Baltic Sea region and its impacts will be one of the BEAR reports. It shall be organized as an update to the BACC II book with a short summary of the BACC II findings and new information.

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- Decision 3: Baltic Earth intends to send experts to the EN Clime network of HELCOM. Here, experts in the different fields of climate and climate impact research will help HELCOM produce a climate change fact sheet, which will be distilled from the BACC I, II and III material and associated material, and reviewed by the EN Clime. In this way, a sound scientific quality of the statements in the fact sheets is warranted.
- Decision 4: The BEAR reports including BACC III shall be published as a special issue in a suited journal as open access. Page numbers rely on the journal but a minimum of 10 pages per report is envisaged; this may be much more, depending on the topic and material (e.g. BACC III)
- Decision 5: A Baltic Earth Workshop on “Hydrology of the Baltic Sea region” will be co-organized by Baltic Earth and the State Hydrological Institute (SHI) in St. Petersburg, Russia, connected to the 100 years birthday of the SHI. Proposed time window for the 2-3 day workshop is 7-10 October 2019.
- Decision 6: The 3<sup>rd</sup> Baltic Earth Conference will be in June 2020, in Poland. Exact venue will be fixed in early 2019.
- Decision 7: BESSG Meeting #13 will take place in combination with the Baltic Sea Science Congress in Stockholm, 19-23 August 2019. The specific time and venue will be communicated in due time.
- Action Item 1: **To conveners** to Baltic Earth sessions at EGU 2019, to announce and advertise these sessions.
- Action Item 2: **To all** to advertise and consider participation and represent Baltic Earth at the BSSC 2019 and show the Baltic Earth logo on slides/posters wherever appropriate
- Action Item 3: **Markus Meier** and **Marcus Reckermann** to prepare the summer school: prepare website, content and agenda, announcement, fix application deadline, by February.
- Action Item 4: **Piia Post** with support of **Marcus Reckermann/Secretariat**, to prepare the workshop on Remote Sensing
- Action Item 5: **Marcus Reckermann** and **Markus Meier**, all to stimulate the Baltic Earth Young Scientists to organize a Baltic Earth Session at Youmares, with logistical assistance from the Secretariat
- Action Item 6: **Sergey Zhuravlev**, **Valery Vuglinsky** with **Marcus Reckermann** and **Markus Meier** to prepare the Baltic Earth Workshop on “Hydrology of the Baltic Sea region” (tentative title) in St. Petersburg, in early October 2019.
- Action Item 7: **Marcus Reckermann/Secretariat** with **Karol Kulinski** to assess possible venues and prices for the conferences; **to all** to find a topic/title/motto for the conference
- Action item 8: **Markus Meier** and **Marcus Reckermann** to suggest a common structure for BEARs which is loose enough to accommodate all the different subjects but also provides a common comparable structure to warrant a level of consistency among the papers.
- Action Item 9: BACC III lead author **Markus Meier** and **Jannica Haldin** (HELCOM) to identify and approach potential experts for membership in the EN clime.
- Action Item 10: **To all BEAR Authors** to have a first draft of the BEARs ready by June 2019.
- Action Item 11: **Marcus Reckermann** and **Markus Meier** to investigate possible publication options for BEARs, negotiate with publishers and then decide on the best option.

## Introduction

The 12<sup>th</sup> Baltic Earth Science Steering Group Meeting was a full-day meeting, attached to the Baltic Earth Workshop on “Multiple Drivers of Earth system changes in the Baltic Sea region”, 26-27 November in Tallinn, Estonia. Local host of the BESSG meeting was Urmas Lips of Tallinn University of Technology (TalTech), who are also co-organizers of the workshop. The meeting took place at Department of Marine Systems of TalTech. The Baltic Earth Senior Advisory Board was invited to this meeting. Guest at the meeting were Laura Hoikkala (HELCOM), Jukka Käyhkö (University of Turku), Erik Kjellström (SMHI) and Kevin Parnell (TalTech). Main topic of the meeting was the organisation of Baltic Earth Assessment Reports and, connected with this, BACC III and the associated HELCOM collaboration. For this purpose, Jannica Haldin of HELCOM gave a presentation.

## TOP 1: Organizational Issues

### 1.1 Approval of the agenda

The agenda was approved.

### 1.2 Approval of the previous 11<sup>th</sup> Baltic Earth SSG meeting minutes

The previous meeting minutes were approved.

### 1.3 Review of previous 11<sup>th</sup> Baltic Earth SSG meeting action items

The action items of the previous meeting were shortly recapitulated. All have been completed except the one on preparing the Baltic Earth Workshop on “Hydrology of the Baltic Sea region” in late 2019 in St. Petersburg, which is in progress.

### 1.4 Membership issues:

#### BESSG memberships

**Urmas Lips**, Professor and head of Department of Marine Systems at Tallinn University of Technology was approved as new BESSG member. He is internationally involved in HELCOM, BOOS and EuroGOOS. One of his research interest involves the interplay between meteorological and hydrophysical processes on the one hand, and biological and biogeochemical processes on the other hand. The BESSG warmly welcomed Urmas to the group.

**Karol Kulinski**, research department head at the Institute of Oceanology PAN in Sopot, Poland, was proposed by Markus Meier and Marcus Reckermann as new BESSG vice chair. Karol is a candidate to follow Anna Rutgersson who had announced her withdrawal from this task. Approval of Karol in this position is planned at the next BESSG meeting (#13) in Stockholm, August 2019.

## TOP 2: Upcoming Baltic Earth and related Events

### 2.1 1<sup>st</sup> Baltic Earth Winter School, Warnemünde, Germany, 22 - 27 March 2019

For the first time, a winter school will take place in Warnemünde, Germany. Topic of the Winter School is “Analysis of Climate Variability”. The School is open to undergraduate (preferable) and graduate students in marine sciences and associated fields. See <https://baltic.earth/winterschool2019>. The school is organized by Markus Meier/IOW. Application deadline: 15 December 2019.

### 2.2 Baltic Earth Sessions at EGU General Assembly, Vienna, Austria, 7-12 April 2019

Abstract submission deadline is 10 January 2019.

#### **“Climate and other drivers of change: Interlinkages, ramifications and impacts in coastal regions” CL2.17.2/BG3.24/HS11.23/NH5.17/OS2.21**

This session is closely related to Baltic Earth Grand Challenge 6 and the topic of the “Multiple Drivers” workshop which took place in Tallinn, Estonia, 26-27 November (<https://baltic.earth/multipledrivers2018/>). The main difference is that with this session, we attract scientists from other coastal regions in the world, to share their research around this topic. See <https://meetingorganizer.copernicus.org/EGU2019/session/33083>

#### **“Open session on coastal and shelf seas” OS2.1**

Contributions are invited on innovative observational, theoretical and modelling studies concerning physical processes in coastal and shelf seas. A sub-session is envisaged on the Baltic Sea, with emphasis on the Baltic Earth programme, focusing on sea-level variability, salinity dynamics and water budget, biogeochemical feedbacks, extreme events and anthropogenically induced changes. See <https://meetingorganizer.copernicus.org/EGU2019/session/30214>

**Action Item 1:** To conveners to Baltic Earth sessions at EGU 2019, to announce and advertise these sessions.

### 2.3 IOCCP-BONUS Integral Summer School/Training Course, Kristineberg, Sweden, 10-21 June 2019

The Baltic Earth project BONUS Integral will co-organize an international summer school together with the International Ocean Carbon Coordination Project. The 11-day summer school, which is titled “Instrumenting our ocean for better observation: A training course on a suite of biogeochemical sensors” will take place in the Sven Lovén Center for Marine Sciences, Kristineberg, Sweden, 10-21 June 2019. Application will be open by mid-December 2018. More information at <http://www.ioccp.org/index.php/more/451-training-course-on-a-suite-of-biogeochemical-sensors-10-21-june-2019-kristineberg-sweden>

### 2.4 Baltic Sea Science Congress (BSSC), Stockholm, Sweden, 19-22 August 2019

#### **“Making connections for the future”**

There will be no dedicated Baltic Earth session at the Congress but many Baltic Earth scientists will be present and present their research; we encourage presenters to show the Baltic Earth logo. The 13<sup>th</sup> Baltic Earth Science Steering Group Meeting will be a side event of the BSSC 2019. <https://www.su.se/ostersjocentrum/english/baltic-sea-science-congress-2019>

**Action Item 2:** To all to advertise and consider participation and represent Baltic Earth at the BSSC 2019 and show the Baltic Earth logo on slides/posters wherever appropriate

**2.5 5<sup>th</sup> Baltic Earth Summer School, Askö, Sweden, 26 August – 2 September 2019**

For the fifth time, this summer school will take place on Askö in the Swedish archipelago. The School is open to undergraduate (preferable) and graduate students in marine sciences and associated fields and will focus on past and future changes in climate of the Baltic Sea region. See <https://baltic.earth/summerschool2019> (website not yet implemented). Announcement to be circulated in early 2019, deadline to be communicated.

**Action Item 3:** Markus Meier and Marcus Reckermann to prepare the summer school: prepare website, content and agenda, announcement, fix application deadline, by February.

**2.6 Summer School on Remote Sensing (tentative time window: Beginning September 2019)**

A summer school on Remote Sensing/Earth Observation is envisaged at the University of Tartu, Estonia. Further information will be provided later.

**Action Item 4:** Piia Post with support of Marcus Reckermann/Secretariat, to prepare The Workshop on Remote Sensing

**2.7 Possible contributions to Youmares Conference 2019, Bremen, Germany, 24-27 September 2019**

Youmares is a network organizing international meetings of young marine researchers and experts, which originated in Germany in 2010 (<https://www.youmares.org/about/>). Youmares has organized so far 9 conferences for an international community of young marine researchers, at different locations and with different topics. The Baltic Earth Secretariat was approached by one of the organizers asking to contribute to the next conference, which is scheduled for 24-27 September 2019 in Bremen, Germany.

It was suggested to involve the Baltic Earth Young Scientists (BEYS) group in this respect. A possibility could be a dedicated session on Baltic Earth topics, which is convened by BEYS.

**Action Item 5:** Marcus Reckermann and Markus Meier, all to stimulate the Baltic Earth Young Scientists to organize a Baltic Earth Session at Youmares, with logistical assistance from the Secretariat

**2.8 Baltic Earth Workshop on “Hydrology of the Baltic Sea region”, St. Petersburg, Russia, 7-10 October 2019 (tentative dates)**

A Baltic Earth Workshop on Hydrology will be organized in early October 2019, associated with the 100yr birthday celebrations at the State Hydrological Institute in St. Petersburg. Sergey Zhuravlov and Valery Vuglinski will be the local hosts and organizers. Scope, topics, programme and format shall be discussed in early 2019.

**Action Item 6:** Sergey Zhuravlev, Valery Vuglinsky with Marcus Reckermann and Markus Meier to prepare the Baltic Earth Workshop on “Hydrology of the Baltic Sea region” (tentative title) in St. Petersburg, in early October 2019.

## 2.9 3<sup>rd</sup> Baltic Earth Conference, Poland, 8-12 June 2020 (tentative dates)

There were two suggestions for the organization the 3<sup>rd</sup> Baltic Earth Conference in 2020: Russia, St. Petersburg and Sopot, Poland. As there will be a large workshop on “Hydrology in the Baltic Sea region”, which should attract many scientists from hydrology and the related fields to come to St. Petersburg for a 2-3 day workshop, the option to have the conference in 2020 in Poland, was favoured. St. Petersburg/Russia will be already now fixed as venue of the 4<sup>th</sup> Baltic Earth Conference in 2020.

As usually, we would opt for the week before mid-summer, which is 8-12 June in 2020. This, as well as the venue, needs to be decided on in early 2019.

**Action Item 7:** Marcus Reckermann/Secretariat with Karol Kulinski to assess possible venues and prices for the conferences; to all to find a topic/title/motto for the conference

## TOP 3: Future Baltic Earth Assessment activities

This topic was a main subject of discussion for this meeting. The BEAR activities and the collaboration with HELCOM concerning BACC III and EN Clime were discussed and approval for some activities was sought.

Background information on BEAR and BACC III and the collaboration with HELCOM concerning the production of specific climate change fact sheets, had been distributed to BESSG and is also available here: [https://www.baltic.earth/organisation/bessg\\_material/BESSG\\_11\\_Minutes\\_Final.pdf](https://www.baltic.earth/organisation/bessg_material/BESSG_11_Minutes_Final.pdf) and the “Draft structure and process of HELCOM climate change work and collaboration with Baltic Earth”, formulated by Jannica Haldin (HELCOM) with inputs by Markus Meier (Baltic Earth). This document was formulated for approval by the HELCOM Heads of Delegation (HoD). It was approved by the HELCOM HoD on 5 December 2018 and is attached to these minutes (Annex 1).

### 3.1 Baltic Earth Assessment Reports (BEARs)

The scope of the BEARs was discussed, and first authors were asked to give a short overview over the envisaged content and structure. Generally, the structure should be the same as far as applicable, with consented knowledge and research gaps.

It was discussed that potential overlaps between the different reports may exist and that they should be avoided as far as possible, while acknowledging that a certain amount of overlap and repetition may be unavoidable and even desirable to a certain degree. Still, cross-checking as early as possible in the writing process should avoid duplicate work on the one side and contradictions on certain issues, on the other side. Inconsistencies and contradicting statements should be avoided between the different reports; these issues

should be discussed and the dissenting views openly stated, noting that it is currently not possible to provide a consent on that issue.

Then the discussion evolved around the question whether #6 (Multiple drivers) should be first or last in sequence, because it represents a cross-cutting issue which may be good to prepare the ground for the other reports. Then on the other hand, it was argued that the different reports represent singular, potentially stand-alone reports for which the sequence in the collection is not relevant. The subject remained open as there is currently no need to decide now.

It was argued that the reports should have the status of “position papers”, but on the other hand should be as neutral as possible, stating the consent (and dissent, if necessary) of the currently available scientific information provided by the peer reviewed literature, following the BACC approach.

The question of a common structure of the reports was not discussed in particular and remains open. Still, this is regarded as very important as authors will need to be aware of a common structure at the commencement of their writing.

Grand Challenge 6 (Multiple Drivers) was regarded as special case, partly synthesizing the other topics; it stands out from the other reports which are mostly monothematic.

**Action item 8:** Markus Meier and Marcus Reckermann to suggest a common structure for BEARs which is loose enough to accommodate all the different subjects but also provides a common comparable structure to warrant a level of consistency among the papers.

Andris Andrusaitis gave a brief overview over the upcoming BONUS Synthesis reports and the projected road towards a joint North-Baltic Sea research programme following BONUS.

### **3.2 BACC III and HELCOM collaboration**

Jannica Haldin gave a presentation on HELCOM plans and the envisaged collaboration with Baltic Earth concerning the production of climate change fact sheets for the Baltic Sea region.

HELCOM will install a network of climate scientists (“EN Clime”) which are to advise HELCOM in the production of the fact sheets and subsequently in the update to the Baltic Sea Action Plan. HELCOM has invited Baltic Earth to this expert network, recognizing the high level of competence in the community, following the production of two BACC books. The envisaged EN Clime is to a large extent expected to consist of Baltic Earth scientists.

The work to update the new knowledge after the cut-off date for BACC II (2012) will be solely the task of the scientific community. Baltic Earth scientists will lead this effort, which will culminate in the BACC III report, which will be one of the BEARs. BACC I, BACC II and the newly established BACC III reports will be the scientific basis on which HELCOM will organize the production of the fact sheets. These will be produced by HELCOM staff and experts for scientific outreach and visualization on that basis, and will be reviewed by the members of the EN Clime to warrant scientifically sound statements in the fact sheets.

It was mentioned that the additional workload for scientists who share their expertise at no further compensation in their free time, is worth mentioning and a concern for some. This

concerns are taken seriously but it was argued that the workload to participate as expert in the EN Clime is manageable, as it concerns the production of just one fact sheet (albeit of multiple pages), and it will be the goal to share the expertise and workload among many experts. In addition, it was also argued that the scientific community needs to help policy makers and HELCCOM as the interface between the scientists and policy makers, to find the best management solutions based on the best available scientific information, which only scientists are able to assess. Still, there is no obligation to contribute to this activity.

On 5 December, the HELCOM HoD approved the recommendations for HELCOM climate work, which is essentially the collaboration between HELCOM and Baltic Earth as drafted here and in Annex 1. The first telephone meeting of the EN Climate is scheduled for 29 January 2019. Further details will be provided by Jannica Haldin to confirmed members of EN Clime. Specifically, the first task of the group will be to assess and update the list of topics for the fact sheets as some are too broad and undefined for a precise scientific assessment (e.g. “weather”; “seabed”)

**Action Item 9:** BACC III lead author Markus Meier and Jannica Haldin (HELCOM) to identify and approach potential experts for membership in the EN clime.

The time line is such that the first draft of the BEAR reports including BACC III shall be available for internal review and cross-reading in June 2019. Ultimately, the reports should be finalized for submission and external reviews by the end of 2019, with an anticipated publication date sometime in 2020.

**Action Item 10:** To all BEAR Authors to have a first draft of the BEARs ready by June 2019.

The journal in which BEARs will be published is still not yet decided on. It is the task of the secretariat and the chairman to investigate, negotiate and decide this.

**Action Item 11:** Marcus Reckermann and Markus Meier to investigate possible publication options for BEARs, negotiate with publishers and then decide on the best option.

## **TOP 4: Miscellaneous**

BESSG Meeting #13 will take place in combination with the Baltic Sea Science Congress in Stockholm, 19-23 August 2019. The specific time and venue will be communicated in due time.

### **Draft**

Marcus Reckermann, 7 Dec 2018

### **Approved**

Markus Meier, 25 Jan 2019