

An international conference at  
Ingeniørhuset, Kalvebod Brygge 31-33, 1780 Copenhagen V. Denmark  
9-10 September 2009



# Linking Science and Management in the Baltic Sea Ecoregion

**IDAmiljø, The Danish Society of Engineers, IDA  
and the Baltic Nest Institute**



## **Background for conference**

The Baltic Sea Ecoregion covers a catchment area of 1.6 million km<sup>2</sup>, a surface area of the Baltic Sea of 0,37 million km<sup>2</sup> and a total population of 85 million people. The Baltic Sea is a complex ecosystem with strong natural gradients from the Kattegat to the Bothnian Bay close to the Arctic Circle, and with 14 different countries discharging into the Baltic Sea and therefore influencing the water quality.

## **The Baltic Ecoregion**

Environmental conditions in the Baltic Sea have already deteriorated significantly over the last century with extensive algae blooms and dead zones. The threats to the Baltic Sea include extensive inputs of nutrients and toxicants, overfishing, and global warming. Restoration of the Baltic Sea ecosystem requires a harmonized management approach across all countries and inter-governmental stewardship, but also a sound scientific basis for choosing the economically most optimal solutions ensuring sufficient measures are in place to achieve acceptable environmental conditions.

## **Management perspectives**

Governance of the Baltic Sea Ecoregion is a multidisciplinary research and management challenge. Politically, the primary target concerns fluxes and flows of nutrients throughout land, air, freshwater, and marine ecosystems. To meet this challenge, cost-effective analyses and models have to be developed and integrated with the natural science models to produce reliable strategies to combat eutrophication and to evaluate the effects of various initiatives in the agricultural sector and fishery management options on cod, herring, and sprat in the Baltic Sea Ecoregion.

The entire process urgently calls for a common language for communication between scientists and managers, and a consensus about scales, problems, and causes is needed. As an example, The Baltic Nest Institute (BNI) hosts the NEST model, a decision support system aimed at facilitating adaptive management of environmental concern in the Baltic Sea Ecoregion. The 6 modules in the NEST model has provided the scientific foundation for the Baltic Sea Action Plan presented by the Helsinki commission for the protection of the Baltic Sea (HELCOM) and approved by all the countries around the Baltic Sea. Further progress is, however, needed to improve existing models and develop and link new tools and models. A general strengthening of the linkage between ecology and economy must be carried out to provide reliable scenarios and science-based management options for political decisions.

The main stakeholder for the NEST decision support system is HELCOM, but integrated management of ecosystems addresses a much broader group of end-users. National, regional, and local authorities as well as consultancies and research institutes are involved in the preparation of operative management strategies (water plans) according to e.g. the Marine Strategy Directive (MSD), the Water Framework Directive (WFD), the Habitats Directive (HD), the Common Fisheries Policy (CFP), and the Baltic Sea Action Plan (BSAP) under HELCOM. These strategies include environmental targets and measures to maintain and/or improve them. Integrated management is a key issue to facilitate political decisions that are balanced, transparent, and cost-effective. State of the art progress within science and management will be presented and discussed during the Conference.

## Programme

### Time Wednesday 9 September 2009

- 12.00 - 13.00 Registration sandwiches
- 13.00 - 14.45 Plenary session – political challenges, management needs, and science-based management for the Baltic Sea Ecoregion
- 14.45 - 15.30 Coffee break
- 15.30 - 18.30 Parallel sessions (The Catchment area, Atmospheric transport and deposition, Modelling and management of fish stocks, Modelling marine ecosystems, Linking economic and ecological models)
- 19.00 Dinner

### Time Thursday 10 September 2009

- 9.00 - 12.00 2 parallel sessions (S1-The Catchment area, S2-Atmospheric transport and deposition, S3-Modelling and management of fish stocks, S4-Modelling marine ecosystems, S5-Linking economic and ecological models)
- 12.00 - 13.00 Lunch
- 13.00 - 15.00 Final session, plenum, conclusions and paneldebate

The conference begins with a common opening session 9 September followed by 2 parallel sessions in the afternoon and the following morning.

After lunch the 10th September, a plenum session will end the conference.

### Wednesday 9 September

#### Opening sessions

- 13.00 - 13.15 Welcome – Steen Gade, Chairman of The Environmental and Regional Planning Committee, The Danish Parliament
- 13.15 - 13.45 HELCOM – science-based management needs - Anne Christine Brusen-dorff, HELCOM
- 13.45 - 14.15 EEA – The needs for EU science based management – Ronan Uhel, Head of Programme, Natural Systems and Vulnerability, EEA
- 14.15 - 14.45 Environmental management - The European Dimension – Peter Gammeltoft – Head of Water Unit, DG ENV, European Commission
- 14.45 - 15.30 Coffee break
- 15.30 - 18.30 2 Sessions

### Thursday 10 September

- 9.00 – 12.00 2 sessions
- 12.00 – 13.00 Lunch
- 13.00 – 15.00 Plenum session

Congress hall

### **The Catchment area**

*Chairman Christoph Humborg, Baltic Nest Institute, Sweden*

- Challenges
- Catchment Simulation Models
- Simulating management and climate change scenarios
- Drainage basin modelling
- From farm to regional scales

Room 4

### **Atmospheric transports and deposition**

*Chairman Lars Moseholm, National Environmental Research Institute, Denmark*

- Atmospheric transport models
- Deposition of nutrients
- Transport of toxicants

Congress hall

### **Modelling fish stock, fisheries and ecosystem interactions**

*Chairman Fritz Köster, DTU-AQUA, Denmark*

- Linking fishery and environmental science
- Ecological modelling of fish stocks
- Management of fish stocks

Room 4

### **Modelling marine ecosystems**

*Chairman Fredrik Wulff, Baltic Nest Institute, Sweden*

- Science-based management
- Modelling nutrient dynamics in the Baltic Sea Ecoregion
- Improving the environmental quality by nutrient reductions - N and/or P?
- Linking ecology to economy

Room 4

### **Economic and ecological modelling**

*Chairman Tomasz Zyllicz, Warsaw, Ecological Economic Center, Poland*

- The use of Common Agricultural Policy Regional IMPACT (CAPRI)
- Cost-minimization models
- Linking ecological and economic models
- Modelling market changes and Common Agricultural Policy (CAP)

## Objectives

This meeting targets managers, scientists and other stakeholders with interests in environmental managements of ecosystems. The purpose of the meeting is to present and discuss state of the art science-based management from regulating land-use in the catchment areas, consequences for the water borne and atmospheric emissions to effects for fishery, environmental quality and economy for the entire Baltic Sea Ecoregion.

## Proceedings

The conclusions from the final plenary session and the panel debate will be summarized in a conference document. The document will be send around to all participants for comments and a revised version will subsequently be send to HELCOM, EEA and to the relevant ministries in the countries around the Baltic Sea Ecoregion.

## Time and place

The meeting will be held 9-10. September 2009 at Ingeniørhuset, Kalvebod Brygge 31-33, Copenhagen V.

## Posters

Participants are invited to present results at a poster exhibition. There are a limited number of (about 25) posters available (size 1 x 2 m). Registration of posters should be made together with the general registration, and they will be given after first come, first served principle.

**Program Committee:** Bo Riemann, NERI, Denmark  
Christoph Humborg, BNI, Sweden  
Fredrik Wulff, BNI, Sweden  
Thomasz Zylich, EEC, Poland  
Fritz Köster, DTU-Aqua, Denmark  
Kaisa Kononen, BONUS EEIG, Finland



## **Registration**

Registration to the Science and Management Conference 2009 can be made by telephone (+45 3318 4818) or via IDA's website [www.ida.dk/idamiljoe](http://www.ida.dk/idamiljoe)

Since there is limited space, participant registration will be after the first come, first served principle.

Deadline for registration is Tuesday 1 September 2009.

The conference number is: 90422

### **Registration fee**

Members of IDAmiljø 2,900 Dkr  
Members of IDA 3,100 Dkr  
Seniors and students 2,500 Dkr  
Others 3,300 Dkr

The fee covers all meeting material, meals, and coffee breaks. Accommodation is not included.

