



BONUS BIO-C3/INSPIRE/COCOA/BAMBI 2016 Summer School

Modelling Biodiversity for Sustainable Use of Baltic Sea Living Resources

The diversity of life is key to the provision of key ecosystem goods and services which are used by society and for maintaining the foodwebs which provide and support these goods and services. However this diversity is increasingly challenged and threatened by continuing socio-economic activities and development, including direct exploitation, eutrophication, climate change, and the introduction of non-native species. Presently, our knowledge of how biodiversity is impacted by such perturbations is limited and often not reliable enough to provide strong guidance for marine policy makers, resource managers and spatial planners. Both new understanding of biodiversity and new approaches for quantifying its variations are needed to help apply biodiversity knowledge in policies that can support long-term sustainable use of ecosystems and their goods and services.

This course will use the Baltic Sea as a case study system to learn how biodiversity affects the functioning of ecosystems and foodwebs, and how they provide goods and services to society. The Baltic Sea has relatively few marine species compared to other marine areas due especially to its low salinity. Yet it provides many of the same services and goods as other systems. Why is this possible, will this situation continue in the future and is the Baltic Sea more vulnerable to human impacts than other systems? This course will provide new biodiversity understanding and quantitative tools that can help students address such questions.

Students can expect to:

- learn ways to model variations in biodiversity due to both natural and anthropogenic drivers;
- demonstrate how variations in biodiversity affect species interactions in foodwebs and the provision of ecosystem services and products, and
- quantify how such natural and man-made perturbations affect both taxonomic and functional descriptors of biodiversity for major taxonomic groups in the Baltic Sea (e. g., fish, benthos, plankton).

The course will have an emphasis on quantitative and functional approaches to biodiversity. The course is jointly planned and organised by the four BONUS projects BIO-C3, INSPIRE, COCOA and BAMBI. Questions about course content can be sent to Prof. Dr. Brian MacKenzie, DTU Aqua, brm@aqu.dtu.dk.

Time and Place

- **August 21– 27, 2016, Søminnestationen, Holbæk, Denmark** (<http://www.soeminstationen.dk>). The location is approximately 90 minutes outside of Copenhagen, Denmark. **Teaching will be conducted on August 22-26.** Please do not plan to travel on August 22 or 26, as these will be full teaching days.

Participants

- Recommended participation for **BIO-C3, INSPIRE, COCOA, and BAMBI PhD students and postdocs**, Master students depending on availability of spaces.
- **8 places** for PhDs/Postdocs from outside BONUS interested in the summer school topic.

Registration – now open!

Please **submit your application** to Heidi Andreasen, course logistical coordinator, e-mail: hea@aqu.dtu.dk, latest June 5, 2016. A description of application documents which must be submitted is given below.

More information:

Lecturers

Experts from the BONUS projects will present a series of lectures and exercises that will cover quantitative and functional approaches to biodiversity estimation and understanding. Confirmed lecturers are listed below and others will be announced in the coming weeks:

Dr. Thorsten Blenckner/Dr. Susa Niiranen, Stockholm Resilience Center, Stockholm University, Sweden – biodiversity impacts on food webs and trophic interactions

Dr. Riina Klais, Estonian Marine Institute, University of Tartu, Estonia – phytoplankton biodiversity variations in time and space

Dr. Martin Lindegren, DTU Aqua, Denmark – functional and taxonomic variations in fish biodiversity

Dr. Brian MacKenzie, DTU Aqua, Denmark – climate-hydrographic impacts on biodiversity and species interactions

Dr. Stefan Neuenfeldt, DTU Aqua, Denmark - biodiversity impacts on food web interactions and growth in upper trophic levels

Dr. Henn Ojaveer, Estonian Marine Institute, University of Tartu, Estonia – feeding ecology of planktivorous fish, diversity and ecosystem impacts of non-native species

Dr. Letizia Tedesco, Finnish Environmental Institute, Helsinki, Finland - biodiversity modelling of lower trophic levels and impacts on biogeochemical processes

Benjamin Weigel, M.Sc., Åbo Akademi University, Finland – biodiversity of benthos.

Others to be announced in May.

Program

The summer school will consist of lectures, group work/short practicals, and discussions, equivalent with 2 ECTS. A detailed program will be posted in mid-May.

Costs

Accommodations and food during the summer school, and local transport from Copenhagen to Søminestationen will be covered by the BONUS projects; participants/projects will have to pay their travel to and from Copenhagen.

Travel

- You can travel to Copenhagen, Denmark from where we will organize a joint group transfer to Søminestationen in the afternoon of August 21, return to Copenhagen on the morning of August 27. Alternatively, join us directly at the Søminestationen on August 21.
 - Nearest airport is Kastrup, with direct flights from many locations around the Baltic. There is a convenient train from Kastrup airport to Holbæk (<http://www.dsb.dk/salg/netbutikken/resultat?6>).
- Transport from Holbæk to the Søminestationen is by Taxi

Applications (deadline June 5, 2016)

Send applications by e-mail to Heidi Andreasen (hea@aqu.dtu.dk). Applications should *include the following documents assembled into 1 pdf file*:

- A short (max. half page) summary of your research interests/project.
- A paragraph on what you hope to learn and take away from the summer school.
- Your current CV (2 pages max.), including statement of your programming, modelling and data analytical skills and which programming languages you know (e. g., R, Excel, Matlab, Python). This will help us design group work.
- For applicants outside of BIO-C3/INSPIRE/COCOA/BAMBI: a half page motivation letter detailing why you are interested to participate in relation to your research goals.
- Everybody will have to prepare an A0 poster on their research projects, for an evening poster session discussing own research and possible interactions/collaborations between the participating young scientists (due at time of summer school only).
- BONUS BIO-C3, INSPIRE, COCOA, BAMBI: PhDs and postdocs will be accepted to the summer school after registering with the above information. MSc students can also apply, participation will be confirmed based on availability of spaces by **June 15, 2016**.
- External participants: we will decide on your application based on the motivation letter and the fit of your research interests with the summer school topics, and will confirm participation by **June 15, 2015**.