



Programme

BONUS SYMPOSIUM:

Science delivery for sustainable use
of the Baltic Sea living resources

Tallinn University Conference Center, Narva Rd. 29, Tallinn, Estonia

17-19 October 2017

Programme in-brief

Monday, 16. October

| | |
|-------------|---|
| 19:00-21:00 | Registration and Ice-breaker at Mare atrium in Tallinn University; Uus-Sadama 5 |
|-------------|---|

Tuesday, 17. October

| | |
|-------------|--|
| 8:15-9:00 | Registration |
| 9:00-9:30 | Opening |
| 9:30-10:15 | Keynote presentation by Herman Hummel (The Netherlands) |
| 10:15-10:45 | Session 1: Colonisation, acclimation and adaptation |
| 10:45-11:10 | Coffee break |
| 11:10-11:50 | Session 1 continues |
| 11:50-13:00 | Session 2: Spatial dynamics, species interactions and habitat connectivity |
| 12:50-14:00 | Lunch |
| 14:00-15:30 | Session 2 continues |
| 15:20-15:55 | Coffee break |
| 15:55-17:15 | Session 3: Ecosystem internal and external drivers of change |
| 17:15-17:30 | Information on special issue of ICES JMS |
| 18:00-20:00 | Poster session and BONUS GOHERR film (Mare atrium, Uus-Sadama 5) |

Wednesday, 18. October

| | |
|-------------|--|
| 8:30-9:00 | Registration for late arrivals |
| 9:00-9:45 | Keynote presentation by Adriaan Rijndorp (The Netherlands) |
| 9:45-10:45 | Session 3 continues |
| 10:45-11:10 | Coffee break |
| 11:10-12:10 | Session 3 continues |
| 12:10-13:00 | Session 4: Temporal dynamics in biodiversity |
| 13:00-14:00 | Lunch |
| 14:00-15:30 | Session 4 continues |
| 15:30-15:50 | Coffee break |
| 15:50-17:30 | Session 5: Ecosystem-based adaptive management |
| 18:30-21:30 | Symposium dinner (Tallinn Teachers' house; Town Hall square 14). |

Thursday, 19. October

| | |
|-------------|--|
| 8:30-9:00 | Registration for late arrivals |
| 9:00-9:45 | Keynote presentation by Jason Link (United States) |
| 9:45-10:45 | Stakeholder panel discussion |
| 10:45-11:00 | Coffee break |
| 11:00-13:00 | Stakeholder panel discussion continues |
| 13:00-14:00 | Lunch |
| 14:00-15:45 | Session 5 continues |
| 15:45-16:00 | Closing |

Oral sessions

Tuesday, 17th October

Chair: Jan Dierking

- 10:15 *Kunnis-Beres K et al.* Genotypic and phenotypic diversity of bacterioplankton in the Gulf of Finland (Baltic Sea)
- 10:25 *Christensen, AM et al.* Physiological responses and phenotypic plasticity of salinity tolerance in *Temora longicornis* in the Baltic Sea
- 10:35 *Heckwolf M et al.* Adaptive transgenerational plasticity in Baltic Sea sticklebacks
- 10:45 **COFFEE BREAK**
- 11:10 *Niemax J et al.* The influence of salinity on reproductive success of round goby *Neogobius melanostomus*: I. Egg development
- 11:20 *Nissling A et al.* Egg buoyancy of flounder, *Platichthys flesus*, in the Baltic Sea – adaptation to salinity and implications for egg survival
- 11:30 *Florin A-B et al.* Using genetics to identify management units of European flounder in the Baltic Sea
- 11:40 *Dierking J et al.* Stability of Eastern Baltic cod population structure and genetic diversity over a period with strong environmental fluctuations (1996-2016)

Chairs: Margit Eero and Axel Temming

- 11:50 *Hänselmann K et al.* Vertical migration patterns of *P. acuspes* in contrasting hydrographic conditions and predator densities in the Baltic Sea
- 12:00 *Makarchouk A et al.* Match-mismatch of the horizontal distribution of adult sprat and its eggs
- 12:10 *Günther C et al.* Another critical period: Physiological limits determine recruitment success during the post-larval stage of a temperate clupeid (*Sprattus sprattus* L.)
- 12:20 *Polte P et al.* Drivers and stressors of herring (*Clupea harengus*) early life stage mortality in inshore spawning areas of the Western Baltic Sea
- 12:30 *Hinrichsen H-H et al.* Survival and dispersal of eggs and larvae of central and eastern Baltic flounder (*Platichthys flesus*) by biophysical modelling
- 12:40 *Orio A et al.* Changes in horizontal and vertical distribution of Baltic cod and flounder as analysed using standardised fishery-independent data
- 12:50 **LUNCH**
- 14:00 *Stords G et al.* Some evident particularities of sprat – *Sprattus sprattus balticus* (Schneider) spatial distribution over the Gotland Deep in the Baltic sea
- 14:10 *Kulke R et al.* Consumption rates of sprat (*Sprattus sprattus*). A new look on an old story
- 14:20 *Neumann V et al.* Trophic interactions in the Baltic Sea: Clupeid predation on cod early life stages
- 14:30 *Mohm C et al.* Cod & Co. feeding ecology revisited: Baltic Sea commercial fish community assessed by stable isotope analysis

- 14:40 *Niiranen S et al.* Predator–prey size relationships in a low diversity marine system: The Eastern Baltic cod case study
- 14:50 *Horbowy J et al.* The method for estimating MSY reference points incorporating density dependence in growth and predation mortality
- 15:00 *Middelboe AL et al.* Fine-scale connectivity patterns in Gulf of Riga
- 15:10 *Uusitalo L et al.* Hidden variables in a Dynamic Bayesian Network identify ecosystem level change

15:20 **COFFEE BREAK**

Chair: Erik Bonsdorff

- 15:55 *Suikkanen S et al.* Effects of diazotrophic cyanobacteria on concurrent plankton communities in the Baltic Sea
- 16:05 *Lips I et al.* Phytoplankton functional diversity during spring-summer succession in the Baltic Sea
- 16:15 *Bryndum KM et al.* Biogeographic changes in fish diversity in the Kattegat-Belt Sea driven by changes in climate and exploitation
- 16:25 *Frelat R et al.* Dissecting the spatio-temporal dynamics of Baltic fish communities and its relation to environment
- 16:35 *Jacobson P et al.* Size-dependent prey availability explains salmon (*Salmo salar*) diet and condition at sea
- 16:45 *MacKenzie B et al.* Uncovering the Past Dynamics of a Collapsed Fish Stock: Gulf of Riga Autumn-Spawning Herring
- 16:55 *van Denderen D et al.* Assessing impact of bottom trawling and hypoxia on seafloor status of the Baltic Sea
- 17:05 *Peterson A et al.* Mapping benthic biodiversity using predictive modeling

Wednesday, 18th October

Chairs: Daniel Oesterwind and Tiit Raid

- 9:45 *Lehtiniemi M et al.* The elemental composition, respiration and ammonium excretion of *Cercopagis pengoi* (Ostroumov, 1891) in the Baltic Sea
- 9:55 *Valanko S et al.* Inter-annual and spatial regulation of an invasive species' (*Cercopagis pengoi*) range expansion: a laboratory and field investigation
- 10:05 *Knospina E et al.* The round goby *Neogobius melanostomus* colonisation and potential impact on the coastal food web in Latvia
- 10:15 *Liversage K et al.* The interaction of perch and round goby involves characteristics of physical environment and macrophyte habitat
- 10:25 *Nurkse K et al.* Estimating the abundance and biomass of round goby in the Baltic Sea
- 10:35 *Oesterwind D et al.* Integration of the invasive round goby (*Neogobius melanostomus*) into the coastal ecosystem of the western Baltic Sea

10:45 **COFFEE BREAK**

- 11:10 *Temming A et al.* Bottom-Up limitation of sprat (*Sprattus sprattus*) in the Bornholm Basin
- 11:20 *Rahikainen M et al.* Eutrophication and oil spills make a quantifiable impact on herring stock dynamics

- 11:30 *Lehmann A et al.* Climate variability of hydrographic conditions of the Baltic Sea and their impact on cod nursery areas
- 11:40 *Tomkiewicz J et al.* Changes in reproductive life history and resource allocation impacting population dynamics of Baltic cod
- 11:50 *Bauer B et al.* Effects of underwater habitat quality on the top predator Baltic cod and its food web interactions
- 12:00 *Sics I et al.* Possible impact of size selective gillnet fishery on the cod stock in the Eastern Baltic Sea

Chairs: Anna Törnroos and Brian MacKenzie

- 12:10 *Klais R et al.* Detecting non-linear and non-stationary effects in marine time-series – methods and some examples
- 12:20 *Olli K et al.* Phytoplankton community trends in cross-ecosystem comparison
- 12:30 *MacKenzie B et al.* The past and future habitats of a key benthic animal, *Saduria entomon*, in the Baltic Sea – combined impacts of climate change and nutrient loading scenarios
- 12:40 *Törnroos A et al.* 40yrs of functional change in Baltic Sea coastal macrofauna and fish

12:50 LUNCH

- 14:00 *Skov H et al.* Benthic ecosystem dynamics in the coastal parts of the Baltic Sea
- 14:10 *Bossier S et al.* End-to-end modelling of fish community changes in the Baltic Proper
- 14.20 *Baranova T et al.* Long-term changes in the annual reproductive cycle of eastern Baltic cod in the Gotland Basin
- 14.30 *Casini M et al.* Spatio-temporal dynamics and behavioural ecology of a “demersal” fish population as detected using acoustic survey pelagic trawl catches: the Eastern Baltic Sea cod (*Gadus morhua*)
- 14.40 *Hüssy K et al.* Faster or slower: Has growth of juvenile eastern Baltic cod changed?
- 14:50 *Plikshs M et al.* Has climate change affected the body condition of Baltic cod *Gadus morhua* L. in the eastern Baltic Sea?
- 15:00 *Wählström I et al.* Potential habitat change in the Baltic Sea – implications of climate change and nutrient-load scenarios on the future marine environment

15:10 COFFEE BREAK

Chairs: Päivi Haapasaari and Alyne Delaney

- 15:40 *Huss M et al.* Bioaccumulation of dioxin in Baltic Sea fish under contrasting harvesting regimes: integrating from individual physiology to size-dependent species interactions
- 15:50 *Asikainen A et al.* Health benefit-risk assessment of human consumption of Baltic salmon and herring in four Baltic Sea countries
- 16:00 *Pihlajamäki M et al.* Baltic Sea herring for food: Shades of grey in how backcasting recommendations work across exploratory scenarios
- 16:10 *Ignatius S et al.* Socio-cultural values as a dimension of fisheries management: the cases of Baltic salmon and herring
- 16:20 *Tuomisto J et al.* Evaluating Baltic Sea fisheries governance in the context of open policy practice

- 16:30 *Aps R et al.* Towards ecosystem-based adaptive maritime spatial planning in the Gulf of Finland (Baltic Sea)
- 16:40 *Wrangé A-L et al.* Monitoring biofouling on settlement panels in the Baltic Sea – a management tool for reducing impact of toxic antifouling practice?
- 16:50 *Koroschetz, B et al.* The impact of material and institutional infrastructures on sustainable maintenance practice – exploring the case of leisure boat maintenance practices in the Baltic Sea
- 17:00 *Lehikoinen A* Optimizing environment, safety and business – a planning tool for sustainable development of small ports
- 17:10 *Luoma E et al.* Sustainable Development of the Recreational Ports in the Eastern Gulf of Finland from the Stakeholders' Perspective

Thursday, 19th October

Chairs: Michele Casini and Jan Horbovy

- 14:00 *Eero M et al.* Do spatio-temporal spawning closures promote the recovery of cod in the Baltic Sea?
- 14:10 *Neuenfeldt S et al.* Food limitation and growth potential of a heavily exploited marine fish predator under environmental change – are all places the same?
- 14:20 *Horbovy J et al.* Management of herring and sprat stocks in the Baltic taking into account spatial effects
- 14.30 *Raid T et al.* Central Baltic Herring: does the assessment of combined stock complex describe adequately the trends in its components?
- 14:40 *Kininmonth S et al.* Disentangling environmental and trophic volatility for a fishery in flux: Non-Stationary modeling of the Baltic Sea system
- 14:50 *Bergström U et al.* No-take areas to strengthen fish populations and recover ecosystem functions
- 15:00 *Laikre L et al.* Safeguarding adaptive potential of Baltic Sea marine biodiversity: ways forward to address identified shortcomings in MPA governance
- 15:10 *Friedland R et al.* The potential use of mussel farms in German coastal waters as an option to improve water quality
- 15:20 *Moellmann C et al.* After the Baltic Sea regime shift – spatial differences and stable states
- 15.30 *Reusch T et al.* The Baltic Sea: a time machine for the future coastal ocean

Stakeholder panel discussion

(Thursday, 19. October)

Panel 1:

9:45-10:45 Main challenges of integrating multiple interests in sustainable ecosystem management (moderated by Georg Martin, University of Tartu)

- ✓ Who are the main players and what are the possible conflicting interests?
- ✓ Do we know enough about marine ecosystem structure and functioning to make informed/wise decisions?
- ✓ Is international cooperation sufficiently active and efficient to address directives and policies?
- ✓ How do bioengineering, aquaculture, and new marine installations fit into the context?

10:45-11:00 Coffee break

Panel 2:

11:00-12:00 Main challenges of sustainable balanced management in fisheries (moderated by Kaire Märtin, Ministry of Environment of Estonia)

- ✓ From single to multispecies management: mismatch between the need and reality
- ✓ Spatial management of marine living resources
- ✓ Making the ecosystem-based approach operational: impact on food webs, carbon sequestration, habitats and genetic diversity
- ✓ Future challenges of the Baltic fisheries management under global change

Panel 3:

12:00-13:00 Main challenges for matching research and policy/management needs (moderated by Liina Eek, Estonian Research Council)

- ✓ How to ensure knowledge transfer from science to management and policy decisions?
- ✓ How to overcome the mismatch between the policy/management needs and research funding?
- ✓ How to achieve an ecosystem approach in marine research?

13:00-14:00 Lunch

Poster presentations

(Tuesday, 17. October; suggested poster size A0 or A1)

Session 1: Potential and genetic basis for colonisation, acclimation and adaptation

Behrens J et al. Salinity tolerance of brackish water round goby, *Neogobius melanostomus*

Gisman J et al. Transcriptional responses of three-spined sticklebacks to simulated climate change in the Baltic Sea

Karlsson K et al. Adaptive capacity of Baltic Sea copepod populations to changing environments

Niemax J et al. The influence of salinity on reproductive success of round goby *Neogobius melanostomus*: II. Larval development

Session 2: Process-based knowledge on spatial population dynamics, species interactions and habitat connectivity

Bernreuther M et al. Lack of top down control of sprat (*Sprattus sprattus* L.) and herring (*Clupea harengus* L.) on zooplankton in the Central Baltic Sea

Klais R et al. Baltic Sea mesozooplankton network and database

Kulke R et al. Temperature and size-dependent functional response of *Sprattus sprattus* L.

Makarchouk A Changes in the horizontal distribution of mortality of sprat eggs

Ojaveer H et al. Selecting for the dominance – feeding of sprat and herring in the Baltic Sea

Orio A et al. Modelling indices of abundance and size-based indicators of cod and flounder stocks in the Baltic Sea using newly standardized trawl survey data

Orio A et al. Characterising and predicting the distribution of Baltic Sea flounder during the spawning season

Pajusalu L et al. Seagrass *Zostera marina* habitat restoration in the Estonian coastal waters

Schneider von Deimling, J et al. Baltic Sea environmental assessments by innovative opto-acoustic remote sensing, mapping, and monitoring

Svecovs F et al. A comparative analysis of performing and data processing methods of hydro-acoustic surveys in the Baltic Sea

Vingovatova A et al. Length-at-age based calculations of sprat stock structure determined by the hydroacoustic surveys in the Baltic Sea

Session 3: Ecosystem internal and external drivers of change affecting biodiversity

Henseler C et al. Coastal habitats and their link to the biodiversity of faunal communities

Herlevi H et al. The food web positioning of the non-indigenous round goby in two introduced populations in the Baltic Sea

Ivanauskas E et al. Curonian lagoon fish stocks model: ECOPATH/ECOSIM approach

Ojaveer H et al. Parasite infestation of the round goby in two localities in the NE Baltic Sea

Olivier P et al. Food webs, the missing link in investigating biodiversity effects on ecosystem functioning

Podgorny K et al. Investigation of the relationships between the size and production characteristics of phyto- and zooplankton in the Vistula and Curonian lagoons of the Baltic Sea

Puntila R et al. The role of the invasive Harris mud crab (*Rhithropanopeus harrisi*) in the coastal food web of the Northern Baltic Sea

Smolinski S Effect of non-indigenous round goby (*Neogobius melanostomus*) on the native European flounder (*Platichthys flesus*) biomass density in the southern Baltic Sea

Usitalo L et al. BONUS BLUEWEBS: Blue growth boundaries in novel Baltic food webs

Wiegleb J et al. Trophic interactions of invasive round goby (*Neogobius melanostomus*) and Baltic herring eggs

Session 4: Temporal dynamics in biodiversity

MacKenzie B et al. Inter-annual and spatial variability in the abundance and distribution of a benthic trophic connectorcies, Saduria entomon, in the Baltic Sea

Session 5: Ecosystem-based adaptive management in the context of new understanding in spatio-temporal heterogeneity

Asikainen A et al. Human consumption of Baltic salmon and herring in four Baltic Sea countries

Bergström U et al. Different nursery habitat requirements of two nearby cod populations – implications for management

Fetisov M et al. Application of Cooperating Smart Spaces technology for efficient collaboration in oil spill response management (Gulf of Finland, Baltic Sea)

Haapasaari P et al. Integrated governance to manage the dioxin problem of Baltic salmon and herring: potential and challenges

Lehikoinen A et al. To eat or not to eat? A socioecological decision model to evaluate the sustainable use of the dioxin-rich Baltic herring and salmon

Neuenfeldt S et al. From climate changes to vanishing fishes – warmer surface waters in prolonged periods may keep cod away from the coasts in the western Baltic Sea

Olenin S et al. COMPLETE - Completing management options in the Baltic Sea Region to reduce risk of invasive species introduction by shipping

Pihlajamäki M et al. Catching the future: Using Bayesian belief networks to visualise and examine the sustainability of Baltic herring and salmon fisheries under alternative exploratory scenarios

Ronkainen L et al. Dioxin flux in the Baltic Sea – soft system approach