



# BALTIC SEA SCIENCE CONGRESS

– understanding transitions in the Baltic Sea

## Congress Programme

Theme 1	The Baltic Sea in transition – past, present and future
Theme 2	Baltic ecosystems – diversity, processes and functioning
Theme 3	Emerging threats and potential consequences
Theme 4	Introducing new technologies
Theme 5	Stewardship for the Baltic Sea

### Monday 18<sup>th</sup> October

16:30 – 17:00	Registration at Aarhus City Hall
17:00 – 19:00	Icebreaker Reception at Aarhus City Hall

### Tuesday 19<sup>th</sup> October

10:00 – 10:30	Registration at Lakeside Theaters		
	Per Kirkeby auditorium		
10:30 – 11:00	<b>Opening session</b> <b>Chair: Jacob Carstensen</b> Welcome by Professor Jacob Carstensen, Minister of the Environment Lea Wermelin (videomessage), EU Commissioner Virginijus Sinkevičius (videomessage), HELCOM Professional Secretary Rüdiger Stempel (videomessage)		
11:00 – 11:45	<b>Keynote Katherine Richardson</b> Climate Change: The elephant in the room when it comes to human pressures influencing ocean life		
11:45 – 12:30	<b>Keynote Ann Swanson</b> Lessons Learned in Chesapeake Bay Using the Past to Inform the Future		
12:30 – 14:00	<i>Lunch break</i>		
	13:15 – 14:00	Per Kirkeby auditorium	
	Poster pitch talks		
		Jeppe Vontilius auditorium	William Scharff auditorium
	<b>Theme 2: Baltic ecosystems - processes, functioning and diversity</b> <b>Chair: Alf Norkko</b>	<b>Theme 3: Contaminants and potential consequences</b> <b>Chair: Emma Undeman</b>	
14:00 – 14:15	Eva Ehrnsten: Large-scale effects of benthic fauna on carbon and nutrient dynamics	Matthias Labrenz: Distribution, sources, and fate of microplastics in the Baltic Sea	
14:15 – 14:30	Camilla Liénart: Blue mussels along a salinity gradient: prediction for the future in space and time		

14:30 – 14:45	Ugo Marzocchi: Benthic macrofauna mediates N-fixation in Baltic Sea sediments	Mirco Haseler: Distribution of meso - and large microplastic on sandy Baltic beaches	
14:45 – 15:00	Marco Bartoli: Partitioning of benthic nitrogen cycling among three macrofauna holobionts in an oligotrophic coastal area (Öre estuary, Sweden)	Ilja Maljutenko: Impact of the ship-borne pollution to the Baltic Sea	
15:00 – 15:15	Cecilie Petersen: Variations in species-genetic diversity correlations in benthic macroinvertebrate communities in the Baltic Sea	Aarno Kotilainen: 137Caesium contents in the northern Baltic Sea sediments	
15:15 – 15:30	Saara Mäkelin: Food sources drive temporal variation in ecological stoichiometry of benthic consumers	Natalja Kolesova: Reproductive disorders in <i>Monoporeia affinis</i> as a biological contaminant effect indicator in the Baltic Sea	
15:30 – 15:45	Anna Villnäs: Allometric and stoichiometric traits predict nutrient excretion rates by benthic consumers	Anna Sobek: Effects of organic carbon origin on hydrophobic organic contaminant fate in the Baltic Sea	
15:45 – 16:00	Julie Garrison: Amphipod isotope composition, condition and reproduction in contrasting sediments: a reciprocal transfer experiment		
16:00 – 16:30	<i>Coffee break</i>		
	<b>Theme 2: Baltic ecosystems - processes, functioning and diversity</b> <b>Chair: Anda Ikaunieca</b>	<b>Workshop:</b> 'Comparing the Baltic Sea and the Chesapeake Bay: successes, challenges, and what's next?' <b>Chairs: Lara Fowler &amp; Jacob Carstensen</b>	<b>Poster session</b>
16:30 – 16:45	Clio Hall: Zooplankton dominance shift in response to changing salinity – results from mesocosm experiment		
16:45 – 17:00	Tharindu Bandara Herath: Browning in the northern Baltic Sea alters the phytoplankton composition and reduces the zooplankton nutritional quality		
17:00 – 17:15	Agneta Andersson: Terrestrial dissolved organic matter inflow drives temporal dynamics of the bacterial community of a subarctic estuary (northern Baltic Sea)		
17:15 – 17:30	Nisha Motwani: Novel environmental niche for mercury-methylating microorganisms		
17:30 – 18:30			

**Wednesday 20<sup>th</sup> October**

08:30 – 09:00	<b>Registration</b>			
	Per Kirkeby auditorium			
09:00 – 09:45	<b>Chair: Alf Norkko</b> <b>Keynote Matthew Bracken</b> Functional consequences of realistic biodiversity changes in marine ecosystems (given remotely)			
09:45 – 10:30	<b>Panel discussion with Annemarie van Wezel, Emma Schymanski, Emma Undeman and Anna Sobek</b> Chemical contamination of the sea – management of the knowns and research on the unknowns (with remote participation)			
10:30 – 11:00	<i>Coffee break</i>			
	<b>Contributed plenary talks</b> <b>Chair: Alf Norkko</b>			
11:00 – 11:15	Conny Sjöqvist: Understanding adaptation of phytoplankton to sea surface temperature increase during the last 60 years in the Baltic Sea			
11:15 – 11:30	Lumi Haraguchi: High resolution temporal dynamics of phytoplankton in the Baltic Sea			
11:30 – 11:45	Agnes Karlsson: Promise and pitfalls of compound specific isotope analyses in Baltic Sea monitoring and assessment			
11:45 – 12:00	Laura Kauppi: How much heat is too much? Effects of marine heatwaves on benthic ecosystem functioning depend on the intensity of the heatwave			
12:00 – 12:15	Lora Harris: Leveraging a whole ecosystem manipulation of dissolved oxygen via engineered de-stratification to quantify the impact and cost of hypoxia on nitrogen cycling			
12:15 – 12:30	Katarina Elofsson: Spatial analysis of water quality and income in Europe			
12:30 – 14:00	<i>Lunch break</i>			
	Per Kirkeby auditorium	Jeppe Vontilius auditorium	Merete Barker auditorium	William Scharff auditorium
	<b>Theme 2: Baltic ecosystems - processes, functioning and diversity</b> <b>Chair: Aarno Kotilainen</b>	<b>Theme 1: The Baltic Sea in transition- past, present and future</b> <b>Chair: Christoph Humborg</b>		
14:00 – 14:15	Saeid Aminjafari: Water Level Changes in Small Lakes in Sweden Using High-Coherence Pixel Interferometry	Marcus Reckermann: Human impacts and their interactions in the Baltic Sea region		
14:15 – 14:30	Maris Eelsalu: Sandy beach evolution in the low-energy microtidal Baltic Sea: attribution of changes to hydrometeorological forcing	Karol Kulinski: Baltic Earth Assessment Report on biogeochemistry of the Baltic Sea		
14:30 – 14:45	Bronwyn Cahill: Seasonal impact of optically significant water constituents on radiative heat transfer in the Western Baltic Sea	Jesper Andersen: Baltic Sea eutrophication status in a changing climate		
14:45 – 15:00	Germo Väli: Striped texture of submesoscale fields and seasonality of submesoscale coherent vortices in the northeastern Baltic Proper: a very high-resolution modelling study	Bo Gustafsson: Time-scales of the Baltic Sea eutrophication state – implications for predicting recovery		

15:00 – 15:15	Matteo Tomasini: Range expansions along multiple environmental gradients	Stiig Markager: Nitrogen in the Baltic Sea: Long-term trends, a budget and decadal time lags in responses to declining inputs		
15:15 – 15:30	Marta Szczepanek: The response of coastal benthic food webs to spatio-temporal variability in organic matter properties	Urmas Raudsepp: Nutrient pools and development of hypoxia in the Baltic Sea over a period of 1993-2019		
15:30 – 15:45	Guillaume Vigouroux: Trend correlations for coastal eutrophication and its main land, hydroclimatic and whole-sea drivers	Helena Osterholz: Nearshore Dissolved and Particulate Organic Matter Dynamics in the Southwestern Baltic Sea: A Time Series Analysis (2010 – 2020)		
15:45 – 16:00	Peter A. U. Stæhr: Environmental DNA biomonitoring of hot-spots of biodiversity in Danish waters	Erik Gustafsson: Assessing acidification in the Baltic Sea, scientific basis and implications for monitoring		
16:00 – 16:30	<i>Coffee break</i>			
	<b>Workshop: 'ETNO – Emerging Technological Needs and Opportunities'</b> <b>Chairs: Regine Labrenz &amp; Barbara Hentsch</b>	<b>Theme 1: The Baltic Sea in transition- past, present and future</b> <b>Chair: Inga Dailidienė</b>	<b>Workshop: 'UN decade of Ocean Science for sustainable development'</b> <b>Chairs: Peter Grønkjær &amp; Jacob Carstensen</b>	<b>Poster session</b>
16:30 – 16:45		Georg Umgiesser: Emerging ecosystem services under climate change in the Lithuania coastal zone environment: the physical basis		
16:45 – 17:00		Susanne Kratzer: Intercomparison of chlorophyll-a measurements for data quality assurance of the Swedish monitoring program		
17:00 – 17:15		Iris Orizar: Intra- and interspecific traits variability of the Baltic Sea phytoplankton		
17:15 – 17:30		Elinor Andrén: Medieval versus recent environmental conditions in the Baltic Proper, what was different a thousand years ago?		
17:30 – 17:45		Anushree Sanyal: Alive; Methusaleh of the diatom world		
17:45 – 18:30				
		Meet at registration desk for walk to campus location		
19:00 – 21:00	<b>Young Scientists' Club</b> (food and beverages sponsored by BANOS)			

**Thursday 21<sup>st</sup> October**

08:30 – 09:00			
Registration			
Jeppe Vontilius auditorium	Merete Barker auditorium		Eduard Biermann auditorium
	<b>Theme 4: Introducing new technologies</b> <b>Chair: Gregor Rehder</b>	<b>Theme 2: Baltic ecosystems - processes, functioning and diversity</b> <b>Chair: Agneta Andersson</b>	<b>Theme 5: Stewardship for the Baltic Sea</b> <b>Chair: Wojciech Wawrzynski</b>
09:00 – 09:15	Juanjo Rodríguez: OmiBox: towards in-situ monitoring of microbial communities	Christoph Humborg: C sequestration along the Baltic Sea coast – a poorly described, but significant part of the regional C budget	Ciarán Murray: Europe-wide thematic assessments of environmental status: a comparison with EU member states' own MSFD assessments
09:15 – 09:30	Sirje Sildever: Plankton biodiversity and species co-occurrence monitoring using environmental DNA – a multiple marker study	Karol Kulinski: The CO2 system dynamics in the vicinity of the Vistula River mouth (the southern Baltic Sea): a baseline investigation	Aurelija Armoskaite: A method for quantifying and graphically representing marine ecosystem service supply using expert judgement and field data
09:30 – 09:45	Ece Kendir Cakmak: Phosphorus bio-recovery strategies from the Baltic Sea	Per Hall: Spatial patterns and drivers of benthic nutrient and carbon fluxes in the Baltic Sea	Berit Hasler: Farmers' incentives to enroll in long-term versus shorter-term voluntary agri-environmental contracts around the Baltic Sea – combining experimental data with large scale hydroeconomic modelling
09:45 – 10:00	Ece Kendir Cakmak: Testing anaerobic phosphorus release from Baltic Sea sediment via bioengineering strategy	Florian Roth: High spatiotemporal variability of methane distribution across coastal habitats of the Baltic Sea	Abrha Teklay Abay: The Impact of the Danish Catch Crop Subsidy Scheme on Farms' Economic and Environmental Performance
10:00 – 10:15	Siim Pärt: Oil spill detection using fluorometric sensors: Laboratory validation and implementation to a FerryBox and a moored SmartBuoy	Jan Henkel: Sulfurimonas spp. affects the geochemistry of the pelagic redoxcline of the Black Sea by catalyzing sulfide oxidation with particulate manganese oxide	Raphael Filippelli: Integrated ecological economic modelling for cross sectoral water policy evaluation
10:15 – 10:30	Laura Tuomi: Simulating oceanographic conditions at fairways for remote piloting	Sławomir B. Woźniak: Diversity of inherent optical properties of suspended particulate matter in the southern Baltic Sea in relation to the concentration, composition and selected characteristics of the particle size distribution	Mikael Skou Andersen: Agricultural nutrient management by the littoral countries: a comparative assessment of implementation gaps
10:30 – 11:00			
<i>Coffee break</i>			
Per Kirkeby auditorium			
11:00 – 11:45	<b>Chair: Karol Kulinski</b> <b>Keynote Carlos Duarte</b> At the crossroads with no time to lose: Seeking positive synergies in the intersection between UN SDGs 14 (Life Below Water) and SDG (Climate Action) (virtual)		
11:45 – 12:30	<b>Keynote Markus Meier</b> Current knowledge about past and future climate changes in the Baltic Sea region		

12:30 – 14:00	<i>Lunch break</i>		
	Per Kirkeby auditorium	Jeppe Vontilius auditorium	Merete Barker auditorium
	<b>Theme 1: The Baltic Sea in transition- past, present and future</b> <b>Chair: Erik Gustafsson</b>	<b>Theme 4: Introducing new technologies</b> <b>Chair: Elinor Andrén</b>	<b>Workshop: 'Ways forward for science-policy interaction in the light of the updated HELCOM BSAP and new HELCOM Science Agenda'</b> <b>Chairs: Bo Gustafsson &amp; Kai Myrberg</b>
14:00 – 14:15	Rivo Uiboupin: Climatology of the marine heatwaves in the Baltic Sea	Laura Tuomi: Filling the puzzle, Baltic Sea surface salinity from space	
14:15 – 14:30	Jan-Victor Björkqvist: Swell hindcast statistics for the Baltic Sea	Mikkel Skovgaard Andersen: Near-coastal marine habitat mapping using topo-bathymetric lidar	
14:30 – 14:45	Norman Göbeler: Hidden from the satellite's eyes: centennial-scale trends and increasing sub-surface marine heatwaves in a coastal archipelago	Farzad Vahidi Mayamey: Monitoring the water extent of Swedish wetlands using satellite images and Google Earth Engine	
14:45 – 15:00	Matthias Gröger: Present and future marine heat waves in the Baltic Sea	Mirosława Ostrowska: Long-term remote analyzes of primary production of the Baltic Sea based on data from the SatBałtyk System	
15:00 – 15:15	Aarne Männik: Extreme large heat content and low ice extent in the Baltic Sea during winter 2019/20	Urmas Raudsepp: A method for assessment of the general circulation model quality using K-means clustering algorithm	
15:15 – 15:30	Jani Särkkä: Wave climate change in the Gulf of Bothnia	Marcin Wichorowski: eCUDO.pl – Polish Oceanographic Data and Information System for improved exploration of Baltic data resources	
15:30 – 16:00	<i>Coffee break</i>		
	<b>Theme 1: The Baltic Sea in transition- past, present and future</b> <b>Chair: Bo Gustafsson</b>	<b>Theme 2: Baltic ecosystems - processes, functioning and diversity</b> <b>Chair: Theresa Radziejewska</b>	<b>Workshop: 'Roads towards compliance with the agricultural nutrient management measures of the Helsinki Convention and the Baltic Sea Action Plan'</b> <b>Chairs: Martin Hvarregård Thorsøe &amp; Mikael Skou Andersen</b>
16:00 – 16:15	Marvin Lorenz: Storm surges in the Baltic Sea: shallow lagoons at risk in the future	Tobia Politi: Amphipods' grazing and excretion loop facilitates Chara contraria persistence in a eutrophic lagoon	
16:15 – 16:30	Loreta Kelpšaitė-Rimkienė: Long waves in the Port of Klaipėda	Carmen Leiva Dueñas: Danish eelgrass meadows capacity of capturing and storing organic carbon and nitrogen	
16:30 – 16:45	Nikon Vidjajev: Re-evaluating Baltic Sea wave energy studies using a new estimate for wave energy in finite-depth	Anne Brauer: Could the seagrass seed microbiome play a role in successful restoration of seagrass meadows?	
16:45 – 17:00	Taavi Liblik: Quasi-steady patterns of circulation in the Eastern Baltic Proper	Benjamin Weigel: Exposing changing phenology of fish larvae by modeling climate effects on temporal early life-stage shifts	
17:00 – 17:15	Aleksandra Dudkowska: Rip currents in the southern Baltic Sea coastal zone	Martin Paar: Food web organisation of the fish community reflects prey availability in two protected areas of the western Baltic Sea	

17:15 – 17:30	Hedi Kanarik: Circulation and transport in the Finnish Archipelago Sea	Martynas Bučas: Juvenile fish associated with pondweed and charophyte habitat: a case study using upgraded pop-up net in the estuarine part of the Curonian Lagoon	
19:00 – 01:00	Conference dinner at Centralværkstedet in Aarhus		

### Friday 22<sup>nd</sup> October

08:30 – 09:00	Registration		
	Per Kirkeby auditorium		
09:00 – 09:45	<b>Chair: Peter Grønkjær</b> <b>Keynote Bo Barker Jørgensen</b> The methane cycle of the Baltic seabed – an old theme with new surprises		
09:45 – 10:30	<b>Keynote Andris Andrusaitis</b> Decades of the Baltic Sea science contribution to societal needs		
10:30 – 11:00	<i>Coffee break</i>		
	Per Kirkeby auditorium	Jeppe Vontilius auditorium	
	<b>Theme 1: The Baltic Sea in transition- past, present and future</b>	<b>Theme 5: Stewardship for the Baltic Sea</b>	
	<b>Chair: Peter Grønkjær</b>	<b>Chair: Kai Myrberg</b>	
11:00 – 11:15	Natascha Ouillon: The influence of different oxygen regimes on energy metabolism and ecological functions of <i>Mya arenaria</i>	Gregor Rehder: Marine Carbon Sinks in Decarbonization Pathways – A large scale German research mission on marine CDR options and its implications for the Baltic	
11:15 – 11:30	Brygida Wawrzyniak-Wydrowska: An estuarine port as a habitat: the first biological survey in a southern Baltic Sea estuary's port	René Friedland: Using river plumes to shape assessment units	
11:30 – 11:45	Matteo Lattuada: Variability in functional traits of Eelgrass ( <i>Zostera marina</i> ) in Sweden	Sarah Piehl: Seasonal and long-term hypoxia in the western Baltic Sea – a modeling approach	
11:45 – 12:00	Nicholas Patrick Moran: Impacts of round goby invasion on benthic fauna in the Baltic Sea: the effects of prey preferences and individual variation	Loreta Kelpšaitė-Rimkienė: Measuring the Impact of Physical Geographical Factors on the Use of Coastal Zones Based on Bayesian Networks	
12:00 – 12:15	Henrik Svedäng: Studying stock separation mechanisms between spawning aggregations of the herring ( <i>Clupea harengus</i> ) in the Stockholm Archipelago	Alexandra Marki: InfoWas – Developing an Information System for Water Quality in the North and Baltic Seas	
	Per Kirkeby auditorium		
12:15 – 12:30	<b>Closing session</b> <b>Chair: Jacob Carstensen</b>		
12:30 – 14:00	<i>Lunch break with pick-up foods</i>		