



the
Nansen
LEGACY
Symposium

Towards
the new Arctic Ocean
– Past, Present, Future

6 – 9 November 2023, Tromsø, Norway

Program

	Monday 6 Nov 2023 UiT & Fram Centre	Tuesday 7 Nov 2023 (Day 1) The Edge
9.00		Introduction 9.00 – 9.30
9.30		Keynote Talks 9.30 -10.30
10.00		Coffee
10.30		Plenary Talks 11.00 – 12.00
11.00		Panel Discussion 12.00 – 12.30
12.00		Lunch 12.30 – 13.30
12.30		
13.00	Early Career Event 13.00 – 17.00 (UiT, Administration Building room K1.04)	Parallel Session A, B, C 13.30 – 15.00
13.30		
14.00		
14.30		
15.00		Coffee
15.30		Parallel Session A, B, C 15.30 – 16.30
16.00		
16.30		Poster Session I (A, B, C) 16.30 – 18.00
17.00		
17.30		
18.00	Reception 18.00 – 21.00 (Fram centre, Lysgården)	Get some air 18.00 – 19.30
19.30		Side event with APECS: Early career networking 19.30 – 21.30
20.30		
21.00		
22.30		

Wednesday 8 Nov 2023 (Day 2) The Edge	Thursday 9 Nov 2023 (Day 3) The Edge
<p>Keynote Talks 9.00 -10.30</p>	<p>Plenary: The Future Arctic Ocean 9.00 -10.30</p>
<p>Coffee</p>	
<p>Plenary Talks 11.00 – 12.00</p> <p>Panel Discussion 12.00 – 12.30</p>	<p>Plenary: The Future Arctic Ocean 11.00 – 12.00</p> <p>Perspectives & Closing</p>
<p>Lunch 12.30 – 13.30</p>	
<p>Parallel Session D, E, F 13.30 – 15.00</p>	<p>Side Event “From Observation to Adaptation” 13.30 – 16.00</p>
<p>Coffee</p>	
<p>Parallel Session D, E, F 15.30 – 16.30</p>	
<p>Poster Session II (D, E, F, and the future Arctic Ocean) 16.30 – 18.00</p>	
<p>Get some air 18.00 – 19.30</p>	
<p>Conference Dinner 19.30 – 22.30</p>	

<p style="text-align: center;">Tuesday 7 November 2023 09.00 – 14.00 The Edge</p>			
09:00	<p>“Towards the new Arctic Ocean – Past, Present, Future” Marit Reigstad</p>		
<p>Keynote Talks (Chair: Tor Eldevik)</p>			
09.30	<p>Physical Drivers in the Changing Arctic Ocean – the Larger Perspective Igor V. Polyakov (University of Alaska Fairbanks, USA)</p>		
10.00	<p>Primary Production and the Shifting Foundations of a Changing Arctic Ocean Karley Campbell (UiT The Arctic University of Norway, Norway)</p>		
10.30	<p>Coffee</p>		
<p>Plenary Talks (Chair: Tor Eldevik)</p>			
11.00	<p>Strong Seasonality and Advection Shape the Zooplankton Community in the European Arctic Janne Søreide (University Centre of Svalbard, Norway)</p>		
11.15	<p>Fishes in the Canadian Arctic, the Barents Sea, and Beyond Maxime Geoffrey (Memorial University of Newfoundland, Canada)</p>		
11.30	<p>Biogeochemistry of the Holocene Sediments in the Barents Sea, and What it Might Mean for Paleooceanography Christian März (University of Bonn, Germany)</p>		
11.45	<p>Seasonal and Climate Change Effects on Pollution Accumulation and Effects in the Arctic Marine Food Web Khuong Dinh (University of Oslo, Norway)</p>		
12.00	<p>Panel Discussion</p>		
12.30	<p>Lunch</p>		
	<p>Parallel Session A <i>Physical drivers: causes and consequences of Arctic Ocean Warming, freshening and sea ice decline</i> Chairs: Frank Nilsen, Mary-Louise Timmermans, Laura Castro de la Guardia</p>	<p>Parallel Session B <i>The living Ocean: Understanding Ecosystem Structure and Function Across Seasons in a Changing Arctic</i> Chairs: Bodil A. Bluhm, Sławomir Kwaśniewski, Julia Giebichenstein</p>	<p>Parallel Session C <i>Environmental Lessons from the Past</i> Chairs: Katrine Husum, Christian März, Christine Tømmervik Kollsgård</p>
13.30	<p>Stormier Arctic Winters due to Surface Warming Amplification Martina Zapponini</p>	<p>Seasonal Dynamics of Sea Ice Protists and Meiofauna in the Northwestern Barents Sea in Relation to Sea Ice Properties Miriam Marquardt</p>	<p>Unravelling the Link between Arctic-Atlantic Exchanges and Meridional Overturning Circulation during the last Deglaciation Ulyses Ninnemann</p>
13.45	<p>Sea Ice Fracturing Promotes Near-Inertial Atmosphere-Ocean Momentum Transfer during an Arctic Winter Storm Laura Crews</p>	<p>Diversity and Distribution of Arctic Protists in Pelagic and Sympagic Habitats in the Northern Barents Sea as Revealed by Metabarcoding Karoline Saubrekka</p>	

Tuesday 7 November 2023

14.00 – 18.00

The Edge

	Parallel Session A	Parallel Session B	Parallel Session C
14.00	A Coupled Ice-Ocean Framework to Investigate the Impact of Sea-Ice Deformation in the Winter Sea-Ice Mass Balance in the Arctic Einar Ólason	Phytoplankton Primary Production in the North-Western Barents Sea 1980-2021: No Obvious Trends but a Regime Shift Triggered by a Pulse of Atlantic Water Laura Castro de la Guardia	Holocene Natural Variability in Atlantic Water Inflow Properties to the Arctic Nil Irvani
14.15	Towards an Improved Representation of Arctic Sea Level, Ocean Currents and Tidal Modelling Using Multi-Mission Satellite Altimetry Felix Müller	Effects of Multiple Stressors on Overwintering Arctic Zooplankton Jildou Dijkstra	Reconstruction of Bottom Current Activity on the Northern Svalbard Margin on Orbital and Millennial-Scales during the late Quaternary Christine Lockwood-Ireland
14.30	Assessing the Climate Change in the Arctic Region from Satellite Altimetry: A Comprehensive Analysis of Sea-Level Variability Stine Kildegaard Rose	Changes in the Life-History Strategy of Fish Communities from the Barents Sea in a Warming Environment Cristiane Bernardo	Planktic Foraminifera in the Barents Sea: Reconstruction of Biomass and Biodiversity Changes during the last Three Millennia Griselda Anglada-Ortiz
14.45	Mechanisms and Impacts of Arctic Ocean Freshwater Variability on Centennial Timescales Oliver Mehling	Feeding Preferences of Sea Urchins on Arctic Macroalgae Assemblages Changing with Depth Simon Jungblut	Delivery and Reactivity of Iron on the Eurasian Arctic Continental Shelf in the Holocene Rachel Gray
15.00	Coffee		
15.30	Understanding the Relative Roles of Diffusion and Mechanical Mixing in the Canada Basin's Upper Halocline Heat Budget Paul Curtis	Seasonal and Spatial Variability in Macrobenthic Size Structure and Functioning in the Northern Barents Sea Barbara Górska	Glacial History of the Northern Barents Sea Reconstructed from Submarine Landforms –Nansen Legacy Results and Research Outlook Tom Arne Rydningen
15.45	How Atlantic Heat Makes Arctic Sea Ice Retreat Lars Henrik Smedsrud	Blue Carbon Storage within Benthic Ecosystems across Multiple Habitats within the Barents Sea with Respect to Sea Ice Loss and the Anthropogenic Impact of Trawling Terri Souster	
16.00	Retreating Sea Ice in the Barents Sea – the Arctic Hotspot Region Signe Aaboe	Biodiversity in the Northern Barents Sea and Adjacent Nansen Basin – Towards an Updated Inventory Slawomir Kwaśniewski	Reconstructing Paleoenvironment and Sedimentary Processes of the Northern Barents Sea Continental Slope Christine Tømmervik Kollsgård
16.15	Unprecedented Warming Rate over Northern and Eastern Svalbard Ketil Isaksen	Ranges of Annual Production in the Barents Sea along Environmental Gradients Rolf Gradinger	Depositional Environments in the Northern Barents Sea, from the Last Glacial to the Present Várin Trælvik Eilertsen
16.30	Poster Sessions		

Wednesday 8 November 2023

09.00 – 14.00

The Edge

Keynote Talks (Chair: Sebastian Gerland)

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| 09.00 | Characteristics and Composition of Sea Ice in the Central Arctic Ocean
Marcel Nicolaus (Alfred-Wegener-Institute, Germany) |
| 09.30 | Freshwater Impacts on the Arctic Ocean Carbon Cycle, Views from Multiple Scales
Kristina Brown (University of Manitoba, Canada) |
| 10.00 | Benthic Systems in Pacific and Atlantic Sectors of the Arctic Ocean
Monika Kędra (Institute of Oceanology Polish Academy of Sciences, Poland) |

10.30 Coffee

Plenary Talks (Chair: Sebastian Gerland)

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| 11.00 | Large-Scale Atmospheric Drivers of Barents Sea Climate Variability
Camille Li (University of Bergen, Norway) |
| 11.15 | Importance of Sea-Ice-Atmosphere Interactions for Kilometer-Scale Weather Prediction
Malte Müller (Norwegian Meteorological Institute, Norway) |
| 11.30 | Microbial Communities in the Future Central Arctic Ocean – What can We Learn from Present Observations and What’s Next?
Oliver Müller (University of Bergen, Norway) |
| 11.45 | Ecosystem Modelling to Support Ecosystem-Based Management in the Barents Sea, Now and in the Future
Benjamin Planque (Institute of Marine Research, Norway) |

12.00 Panel Discussion

12.30 Lunch

Parallel Session D
Caught in Transit – Key Processes on the Inflow Shelves and Their Regional Connectivity to Pan-Arctic Systems
Chairs: Randi B. Ingvaldsen, Jackie Grebmeier, Snorre Flo

Parallel Session E
Around and Out: Processes Along Interior and Outflow Shelves
Chairs: Paul Renaud, Zou Zou Kuzyk, Jakob Dörr

Parallel Session F
A shattered Mirror – Understanding a Rapidly Changing Central Arctic Ocean
Chairs: Mats Granskog, Igor Polyakov, Christine Gawinski

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| 13.30 | Ocean Acidification Variability in the Northern Barents Sea during Years of Contrasting Sea Ice Conditions
Elizabeth Jones | Inputs from Land Drive Complex Coastal Ecosystem Responses: Summarizing 5 Years of Research at Svalbard’s Land-Ocean Interface
Amanda Poste | Arctic Sea Ice Changes – From Quiet to more Dynamical Regime
Jari Haapala |
| 13.45 | Hydrography, Inorganic Nutrients and Chlorophyll a Linked to Sea Ice Cover in the Atlantic Water Inflow Region North of Svalbard
Angelika Renner | Marine Heat Waves May Contribute to Ecological Change within the Hudson Bay System, Canadian Arctic
Zou Zou Kuzyk | Turbulent and double-diffusion heat and nutrients fluxes in the Central Arctic Ocean
Achim Randelhoff |

Wednesday 8 November 2023

09.00 – 14.00

The Edge

Parallel Session D		Parallel Session E		Parallel Session F	
14.00	Hotspot or Mismatch? – High Spring Productivity across the Barents Sea Polar Front Eva Leu	14.00	Local Ice-Meltwater Drives Anticyclonic Circulation and Triggers Under-Ice Phytoplankton Blooms at the Entrance of an Arctic Fjord Eugenio Ruiz-Castillo	14.00	Temporal Variability in Ventilation inside the Eurasian Arctic Ocean Lennart Gerke
14.15	Secondary Production at the Polar Front – the Role of <i>Calanus</i> spp. from Near and Far in Barents Sea Pelagic Productivity Sünne Linnéa Bassedow	14.15	Coastal Freshening Drives CO ₂ Dynamics in Greenland Fjords Henry Henson	14.15	There and Back again: The Arctic Ocean During the MOSAic Campaign Morven Muilwijk
14.30	Composition and Regulating Mechanisms of Downward Carbon Flux on Arctic Shelves Yasemin Vicdan Bodur	14.30	Carbon Dioxide Flow and Acidification Rates at the Outer Shelf-Continental Slope Area of the Kara and Laptev Seas Alexander Polukhin	14.30	Turbulent Fluxes at the Ice-Ocean Interface in the Arctic Ocean Zoe Koenig
14.45	The Effect of Ice-Free Summer Conditions on Benthic Food Web Structure and Pelagic-Benthic Coupling Strength in the Barents Sea Amanda Ziegler	14.45	Does Terrestrial Runoff Alter Coastal Planktonic Community Structure in the Arctic? Caroline Weber	14.45	Hidden in Plain Sight – New Insights on Arctic Sea-Ice Ridges from the MOSAic Expedition – an Overview Evgenii Salganik
15.00 Coffee					
15.30	Investigating Combined Effects of Climate Change and Fisheries on the Barents Sea Ecosystem Dynamics Elliot Sivel	15.30	Biogeography and Connectivity of <i>Calanus</i> Copepods in the Arctic Ocean and its Peripheral Areas Gerald Darnis	15.30	The Variable Impact of Storms on the Surface Marine Biogeochemistry during the Onset of Freeze-Up in the Central Arctic Ocean Elise Droste
15.45	Climate Driven Ecosystem Reorganization and Cumulative Risk in the Arctic Raul Primicerio	15.45	Sympagic Carbon Uptake by Benthic Fauna: How Does it Differ between an Inflow and Outflow shelf? Ivan Cautain	15.45	Contrasting Chemistry in the Central Arctic Ocean in a Pan-Arctic and Climate Change Perspective Agneta Fransson
16.00	Annual Replacement of Zooplankton Species in a Shallow Flow-Through Sea Carin Ashjian	16.00	Epibenthic Communities in Northeast Greenland: Taxonomic, Functional, and Trophic Structure Phoebe Armitage	16.00	Physical and Biological Observations from Ice-Tethered Observatories (ITOs) in the Arctic Malin Daase
16.15	The Pacific Arctic: A Key Gateway Undergoing Ecosystem Changes with Climate Warming Jackie Grebmeier	16.15	Exploring the Ecomorphology of Fishes from Northeast Greenland: Implications on Resource Use and Feeding Competition Laura Ghigliotti	16.15	Status update of deep Arctic Ocean habitats and species diversity Bodil Bluhm
16.30 Poster Sessions					

Thursday 9 November 2023 09.00 – 14.15 The Edge	
Plenary: “Future Arctic Ocean” Chairs: Céline Heuzé & Andreas Altenburger	
09.00	The future Arctic sea ice: Key drivers and regional variabilities Marius Årthun (University of Bergen, Norway)
09.30	Turning Science into use – Where do we stand? Marianne Kroglund (Norwegian Environment Agency, Norway)
Plenary: “Future Arctic Ocean” Chairs: Marius Årthun, Céline Heuzé, Martí Amargant Arumí & Natalie Summers	
10.00	Assessing the Spread of Atlantic Water layer Temperature and Salinity in the Arctic Ocean in CMIP6 Model Ensemble Members Marion Devilliers (Danish Meteorological Institute, Denmark)
10.15	Climate-Change Driven Terrigenous Inputs Decrease the Efficiency of the Future Arctic Ocean’s Carbon Storage Laurent Oziel (Alfred Wegener Institute, Germany)
10.30	Coffee
11.00	Present and Future Influence of Ocean Heat Transport on Winter Arctic Sea-Ice Variability Jakob Dörr (University of Bergen, Norway)
11.15	How can Functional Groups be Affected by Low and High Carbon Emission Scenarios in the Barents Sea? Marcela Nascimento (GEOMAR, Germany)
11.30	Integrative Studies for Assessing Diversity, Distributions, Trophic Role and Range Shifts of Jellyfish in Tomorrow’s Arctic Ocean Charlotte Havermans (Alfred Wegener Institute, Germany)
11.45	An Observing System that Serves Society’s needs in a Future Arctic Michael Karcher (Alfred Wegener Institute, Germany)
12.00	Perspectives & Closing The Nansen Legacy project
12.30	Lunch
13.30	Side Event “From Observation to Adaptation” Organized by Nansen Legacy in collaboration with the EU project Arctic Passion With support from the Norwegian Arctic Council chairmanship

Notes

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