

## Arctic Frontiers 2011

### Provisional Science section programme - Wednesday 26 January to Friday 28 January 2011

Wednesday 26 January 2010

University of Tromsø, Store Auditorium, Teorifagbygget/ Main Auditorium, Theoretical Disciplines Building

*Chairs: Dorte Krause Jensen, University of Aarhus, Denmark, and Paul Wassmann, University of Tromsø*

- 09:00 Introduction (Conference convenors)  
 09:15 **Stefan Rahmstorf**: What is a tipping point?  
 09:45 **Mark Nuttall**: Tipping Points and the Human World: Living with Change and Thinking about the Future  
 10:15 **Carlos Duarte**: Not so smooth: Thresholds and abrupt changes in ecosystems under pressure  
 10:45 **Break**  
 11:00 **Henry P. Huntington**: Climate Services, Positive Feedbacks, and Economic Costs: A Downward Arctic Spiral  
 11:30 **Dirk Notz**: The big melt  
 12:00 **Lunch**  
 13:00 **Eddy Carmack**: Avoiding Disruptive Shocks and Flips in Complex-Adaptive Arctic Marine Systems: A Resilience Approach to Place and People  
 13:30 **Oran Young**: Arctic Tipping Points: Uncertainty, Surprise, and Anticipatory Responses  
 14:00 **Søren Rysgaard**: Documenting tipping points in Greenland waters: The importance of data and presence  
 14:30 **Break**  
 14:45 **Jean-Pierre Gattuso**: Ocean acidification in the Arctic Ocean and Nordic seas: chemical threshold and biological response  
 15:15 **Aqqaluk Lyngø**: Tipping Arctic Science Towards a Human-centred Approach  
 15:45 **Break**  
 16:00 Panel debate  
 17:00 End - "Utblåsning"  
 19:00 Bacalao Driv

Thursday 27 January

Time	Part I Ice-ocean-atmosphere interactions in the Arctic Auditorium 3 <i>Chairs: Peter Wadhams, ATP/University Cambridge, UK; Nalân Koç, ARCTOS/Norwegian Polar Institute, Norway</i>	Part II Marine ecosystems and fisheries Main Auditorium <i>Chairs: Susana Agusti, ATP/IMEDEA, Spain; Ken Drinkwater, Institute of Marine Research, Norway</i>	Part III Socioeconomic and institutional perspectives TEO-H1 1.425 <i>Chairs: Ann-Sophie Crépin, The Beijer Institute of Ecological Economics, Sweden; Alf Håkon Hoel, University Tromsø/ Institute of Marine Research, Norway:</i>	Part VI People of the North TEO-H1 1.343 <i>Chairs: Bob Corell, Ealat/Global Environmental &amp; Technology Foundation/University Tromsø, USA/Norway; Else Grete Broderstad, ATP/University Tromsø, Norway; Aqqaluk Lyngø, ATP/Inuit Circumpolar Council, Greenland:</i>
09:00	Introduction (Session convenors)	Introduction (Session convenors)	Introduction (Session convenors)	Introduction (Session convenors)
09:15	<b>Lars-Otto Reiersen et al.</b> : Climate Change and the Cryosphere: Snow, Water, Ice, and Permafrost in the Arctic, SWIPA	<b>Benjamin Planque et al.</b> : Resilience of the Barents Sea ecosystem - what should we know and what do we know?	<b>Erik Molenaar</b> : International Regulation of Arctic Marine Shipping. Recent Developments and Options for Multilateral Reform Outside IMO.	<b>Mikail Pogodaev</b> : Reindeer herding and tipping points – sustain indigenous societies in Eurasia.

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09:45	<b>Sebastian Gerland</b> et al.: The Arctic sea ice regime around Svalbard in late summer 2010	<b>Thomas Juul-Pedersen</b> et al.: Carbon cycling in Arctic marine ecosystems: Case study Young Sound	<b>Fiammetta Borgia:</b> The Impact of the Global Warming on the Arctic Ocean Regime in International Law	<b>Galina Mikhaylova &amp; K. Mikhaylov:</b> Social Policy in the Russian Northwest (Murmansk Region): the problem of domestic energy supply
10:05	<b>Sönke Maus:</b> The role of temperature-dependent sea ice physical properties in shaping atmosphere-ice-ocean interaction and polar climate	<b>Katja Metfies</b> et al.: Temporal variability of phytoplankton community structure in sediment traps deployed in the eastern Fram Strait during the years 2000-2008	<b>Ø. Harsem:</b> Tipping points in the oil and gas exploitation in the Arctic	<b>Yulian Konstantinov:</b> Social Policy in the Russian Northwest (Murmansk Region): the problem of domestic energy supply
10:25	<b>John F. Burkhardt</b> et al.: Observing Black Carbon driven Albedo Variability in the Arctic: VAUAV	<b>Mathieu Ardyna</b> et al.: Influence of environmental factors on the structure and function on Canadian High Arctic phytoplankton communities: Distinction between oligotrophic and eutrophic regions	<b>Viviane du Castel:</b> Energy, the hope of international influence or threat of the 21st century?	<b>Alexander N. Davydov:</b> Arctic frontiers of Nenets people: Kolguev and Vaigach Islands
10:45	<b>Break</b>			
11:00	To be confirmed	<b>Agata Weydmann</b> et al.: Looking for tipping points: A case study of mesozooplankton of the West Spitsbergen Current	<b>Njord Wegge:</b> The ban on seal products in the European Union. Why and how did it happen?	<b>Alexander N. Davydov &amp; S.A. Zvyagin:</b> Maritime Culture of the Arctic Seas as a Phenomenon International Interaction: North Russia and North Norway
11:20	<b>Kåre Edvardsen &amp; T. Løvås:</b> Kinetic study of polluting effects from point sources	<b>Angelina Kraft</b> et al.: Pelagic amphipod patterns in the eastern Fram Strait as indicators for a warming Arctic? – A time series from 2000 to 2009	<b>Alexander Pelyasov:</b> National Strategies for the Arctic Region as tipping points in the globalized world (common priorities and specific features)	<b>Liudmila Zamorshchikova:</b> Linguistic identity of the People of the North as a model of world description and investigation
11:40	<b>Lars-Otto Reiersen:</b> State of the Arctic Coast 2010: Scientific Review and Outlook	<b>Øystein Varpe:</b> Adaptations to temporally separated food sources: model predictions for copepods feeding on ice algae and the pelagic phytoplankton bloom	<b>Jørn Eldby:</b> Sustainable industrial development in the North	To be confirmed
12:00	<b>Lunch</b>			
13:00	<b>Ilker Fer:</b> Vertical mixing in the Arctic Ocean	<b>Marcel Babin &amp; S. Bélanger:</b> How useful are ocean colour remote sensing data to monitor changes in primary production and detect regime shifts in the Arctic Ocean?	<b>Olya Gayazova:</b> The Threshold of a Lomonosov Ridge Agreement	<b>Robert Correll</b>
13:30	<b>Vigdis Tverberg</b> et al.: Winter sea ice melting in the Atlantic Water subduction area	<b>Sabine Cochrane</b> et al.: Benthic fauna and functional traits along a Polar Front transect in the Barents Sea – advancement on current	(13:20-13:50) <b>Paul Renaud:</b> Toward a pan-Arctic approach to research-based environmental management	<b>Torsten Risør:</b> Climate change and primary health care – a specific challenge and an unspecific answer

		tools for ecosystem-level assessments		
13:50	<b>Sigurd Henrik Teigen et al.:</b> Heat Exchange in the Sea West of Svalbard	<b>Jannike Falk-Petersen &amp; C.W. Armstrong:</b> Sustainable management of the alien invasive red king crab – a contradiction of terms?	<b>Jennifer Provencher:</b> Seabirds as Indicators of changing Arctic marine ecosystems	<b>To be confirmed</b>
14:10	<b>Ragnheid Skogseth et al.:</b> Tidally driven frontal advection and vertical shear in an Arctic polynya	<b>Gennady Matishov et al.:</b> Climatic changes of marine ecosystems of the Western Arctic	<b>Maria Hammer:</b> Bilateral cooperation in an ecosystem context: Joint Russian – Norwegian scientific assessment of the Barents Sea	<b>Rasmus G. Bertelsen:</b> Climate Change, Security and Self-Government in the Arctic
14:30	<b>Olga Pavlova et al.:</b> Dynamic and thermodynamic causes of recent changes in the Barents Sea ice cover	<b>Nicole Misarti:</b> A long term view of North Pacific marine ecosystem change: creating baseline data sets to better understand current change through the use of archaeological materials	<b>Amy Lauren Lovcraft:</b> Communities of Practice: Balancing research, development, and management for a sustainable High North	<b>Frank Pokiak et al.:</b> The Inuvialuit Co-management Process: An example of wildlife co-management success
14:50	<b>Break</b>			
15:05	<b>Kristoffer Rypdal &amp; M. Rypdal:</b> Detection of climatic regime shifts from time-series data	<b>H.P. Huntington et al.:</b> Science, Management, and Fisheries in the Arctic Ocean Donut Hole	<b>Roberto Azzolini:</b> The role of the European Polar Board towards a European Polar Research Strategy	<b>V. Gofman et al.:</b> Role of Bering Sea Sub-Network (BSSN) to map subsistence use and explore climate change impacts and adaptations
15:25	<b>Oleg Pokrovsky:</b> Slow Quasi Periodical Oscillations in North Atlantic-Arctic-North Pacific Climate System	<b>Garry B. Stenson &amp; M.O. Hammill:</b> The Impact of Climate Change on Ice Breeding Seals: Incorporating Ice Related Mortality into the Assessment of Northwest Atlantic Harp Seals, <i>Pagophilus groenlandicus</i>	<b>Maribeth S. Murray:</b> Responding to Arctic Environmental Change: Science for Society in the North and Beyond	<b>Else Grete Broderstad &amp; E. Eythorsson:</b> Tipping points, fishery management and local communities
15:45	<b>Peter Wadhams:</b> Combining satellite altimetry and submarine observations to estimate Arctic sea ice thickness	<b>Jennifer Provencher et al.:</b> Seabirds as Indicators of changing Arctic marine ecosystems	<b>Päivi Iskanius:</b> Developing the Northern Research and Innovation Platform	<b>To be confirmed</b>
16:05	Poster session, Tipping Point movie, EU EPOCA project, Auditorium 2			
18:00	End			
19:00	Banquet			

## Friday 28 January

<b>Time</b>	<b>Part I Ice-ocean-atmosphere interactions in the Arctic Auditorium 3</b> <i>Chair: Cecilie Mauritzen, Meteorological Institute, Norway</i>	<b>Part II, Marine ecosystems and fisheries Experimental Main Auditorium</b> <i>Chair: Susana Agusti, ATP/IMEDEA, Spain</i>	<b>Part II, Marine ecosystems and fisheries Field Auditorium 2</b> <i>Chair: Marit Reigstad, ARCTOS/ University of Tromsø, Norway</i>	<b>Part III Socioeconomic and institutional perspectives TEO-H1 1.425</b> <i>Chair: Alf Håkon Hoel, University Tromsø/ Institute of Marine Research, Norway</i>
09:00	<b>Sigrid L. Johansen &amp; R. Ingvaldsen:</b> Driving forces	<b>Dolors Vaque:</b> How increasing temperature	<b>Brenda L. Norcross et al.:</b> Distribution and Ecology	<b>Anne-Sophie Crépin:</b> Consequences of regime

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	for variability in Atlantic Water in the northwestern Barents Sea and impact on the Arctic Water	affects microbial communities of two contrasting Arctic marine systems	of Demersal Fishes in the Chukchi Sea over 50 Years	shifts for human welfare and implications for management
09:30	<b>Aleksey Marchenko et al.:</b> Field studies of sea water and ice properties in Svalbard fjords	<b>Iñigo Garcia-Zarandona et al.:</b> The response of ectohydrolytic enzymes of planktonic prokaryotes to experimental warming in arctic marine ecosystems	<b>Slawomir Kwasniewski et al.:</b> Directions in the mesozooplankton variability in an Arctic fjord Kongsfjorden in relation to climate fluctuations: the role of local and remote factors and consequences for the marine ecosystem	<b>Alf Håkon Hoel &amp; Erik Olsen:</b> Ecosystem-based oceans management: Norway's management plans
09:50	<b>Marius Årthun et al.:</b> Barents Sea Heat: Transport and surface fluxes	<b>Eva Leu et al.:</b> Effect of ocean acidification on omega-3 fatty acids	<b>Daniel Vogedes et al.:</b> Lipid dependent timing of seasonal migration in a capital breeder, the copepod <i>Calanus hyperboreus</i>	<b>Piotr Graczyk:</b> Outside actors in the Arctic – the case of Observers in the Arctic Council
10:10	<b>Tor Gammelsrød et al.:</b> The Barents Sea and Global Deep Ocean Circulation; some results from the BIAC IPY project	<b>Johnna M. Holding &amp; C.M. Duarte:</b> Thresholds of warming for arctic plankton communities	<b>Jørgen Berge et al.:</b> Macrozooplankton rather than <i>Calanus</i> responsible for autumn DVM in Arctic fjords and pack ice: backscatter contribution by net samples compared with acoustics	<b>Emily McGlynn:</b> EU-Arctic Footprint and Policy Assessment: Evaluating the EU's Impact on the Arctic Region
<b>10:30 Break</b>				
10:50	<b>Vidar S. Lien &amp; A.G. Trofimov:</b> The Barents Sea – Arctic Ocean gateway: Water mass characteristics and transformations	<b>Alexandra Coello et al.:</b> Experimentally-determined temperature thresholds for Arctic phytoplankton	<b>Vlad Kozlovskiy et al.:</b> Comparative analysis of macrobenthic communities in the south-western part of the Kara Sea	<b>Knut Espen Solberg:</b> Risk elements associated with Shipping in Arctic Waters – Closing the Regulatory Gap
11:10	<b>Drew Peterson et al.:</b> Perspectives on Seasonal Forecasting in the Arctic from GloSea4: The UK Met Office Seasonal Forecast System	<b>Sanna K. Markkula et al.:</b> Predation effects of the voracious predator <i>Mertensia ovum</i> in the patchy Arctic environment	<b>Michaela Aschan et al.:</b> Changes in the Barents Sea fish community induced by environmental change and fishery	<b>Benjamin Hofmann:</b> Climate change, economic modernization and heterogeneity: Exploring causes and capacities of political devolution in the Arctic
11:30	<b>D. Dumont et al.:</b> A model for waves-in-ice and sea ice dynamics in the marginal ice zone	<b>Dorte Krause-Jensen et al.:</b> Benthic marine vegetation in Greenland – response to climate forcing	<b>Ken Drinkwater et al.:</b> Ecosystem responses to recent climate forcing in the Barents and Labrador seas	<b>Tatiana Minayeva:</b> Best Practices for the Mitigation, Recovery and Restoration of Oil and Gas Impacts on Arctic Wetlands: Outcomes of a Partnership between Business, NGO and Science
11:50	<b>Laurent Bertino et al.:</b> The MyOcean Arctic Forecasting Center: a new pan-European service	<b>Raul Primicerio et al.:</b> Alternative equilibria and resilience of Arctic Aquatic Systems	<b>Anne Kirstine Frie et al.:</b> Long term trends in female reproductive parameters of Northwest Atlantic hooded seals ( <i>Cystophora cristata</i> ): Evidence of responses to ecosystem change?	<b>Martin Sommerkorn:</b> Towards Managing Arctic Change through Stewardship – a Place-Based Resilience Assessment Using Values of Ecosystem Diversity, Function, and Services

12:10	Lunch			
13:10	Discussion	Discussion	Discussion	Discussion
14:10	Break			
14:25	Final session, Main Auditorium Chairs: Carlos M. Duarte, IMEDEA, Spain; Elisabeth Halvorsen, University of Tromsø, Norway; Dorte Krause-Jensen, University of Aarhus, Denmark; Paul Wassmann, University of Tromsø, Norway			
14:30	Sea ice and oceanographic perspectives (Part I Chairs)			
14:45	Marine ecosystems and fisheries (Part II Chairs)			
15:00	Socioeconomic and institutional perspectives (Part III Chairs)			
15:15	People of the North (Part IV Chairs)			
15:30	YSF/APECS award ceremony, Chairs: Jenny Baesemann, APECS/University of Tromsø, Norway; Stig Falk-Petersen, Institute of Polar Research/University of Tromsø, Norway			
15:50	Final words (Conference conveners)			
16:00	Close			