

ARCTIC CHANGE 2014

8-12 DECEMBER - OTTAWA CONVENTION CENTRE - OTTAWA, CANADA



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An invitation to international Arctic researchers, stakeholders and decision-makers


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The international Arctic Change 2014 conference aims to stimulate discussion and foster collaborations among people with a vested interest in the Arctic and its peoples. Coinciding with the pinnacle of Canada's chairmanship of the Arctic Council and marking ArcticNet's 10th anniversary, Arctic Change 2014 welcomes researchers, students, Northerners, policy makers, and stakeholders from all fields of Arctic research and all countries to address the numerous environmental, social, economical and political challenges and opportunities that are emerging from climate change and modernization in the Arctic. With over 1000 participants expected to attend, Arctic Change 2014 will be one of the largest trans-sectoral international Arctic research conferences ever held in Canada.

We look forward to welcoming you to the Ottawa Convention Centre now the [Shaw Centre](#) in Ottawa, Ontario, Canada in December 2014 for an illuminating knowledge exchange on the multiple issues facing the changing Arctic.

For conference news and updates, please follow [@ArcticNet](#) on Twitter 

List of Topical Sessions

(Please click on the session title to access the session summary and list of Co-chairs)

- T02. Arctic Canada Geosciences from Land to Sea: Climate, Tectonics and Sedimentation
- T03. Arctic Ecosystems as Sources and Sinks of Greenhouse Gases: Analysis at Multiple Scales
- T04. Education in Inuit Nunangat in a time of change
- T05. Arctic Ocean Acidification
- T06. Arctic Sea Ice: Changes, Processes and Impacts
- T07. Arctic Security, Arctic Uncertainty, Arctic Complexity: Learning from the Past, Anticipating the Future
- T08. Arctic Straits: Law, Policy and Environmental Protection in the Northwest Passage, Northern Sea Route, and Bering Strait
- T09. Arctic Wildlife Co-Management Challenges and Solutions – Bringing Together Inuit and Scientific Knowledge
- T10. Arctic Youth: the Future to a Sustainable Arctic Environment
- T11. Beaufort Regional Environmental Assessment
- T12. Biodiversity, Productivity and Function of Marine Ecosystems in a Changing Arctic
- T13. Biogeochemistry and Gas Exchange in a Changing Arctic Marine System
- T14. Changing Arctic Atmospheric Composition
- T15. Changing Commercial and Subsistence Fisheries in a Warming Arctic
- T16. Changing Practices Towards Community Engagement in Research
- T17. Community Adaptation and Vulnerability in Arctic Regions
- T18. Contaminants in a Changing Arctic
- T21. Dynamics and Recent Changes of Arctic Glaciers and Ice Shelves
- T22. Education, Outreach and Communications: Are we Successfully Linking Scientific Research to Education, Public Policy, and Environmental Awareness?
- T23. Energy Security for Arctic and Remote Communities
- T24. Food Insecurity in the Circumpolar Regions – Understanding the Key Drivers for Meaningful Partnerships and Sustainable Solutions
- T25. From Data to Knowledge: Enabling Cross-Disciplinary Science Through Data Archives and Online Access Tools
- T26. Health and Well-Being in Arctic Communities: Advancements in Practices, Processes and Outcomes
- T27. How to Combine Multiple Remote Sensing Techniques and New Observing Technologies to Document Marine Ecosystem Dynamics in the Arctic Ocean, both in Open and Ice-Covered Waters
- T28. ICARP III: A Roadmap for the Future of Arctic Research
- T29. Impact of Mining Development on Arctic Ecosystems, Caribou Herds and Inuit Lifestyles
- T30. Extractive Industries and the Arctic: Community experiences and environmental legacies

- T31. Indigenous Perspectives on Adaptation
- T32. Linking the Arctic to the World: Arctic Animal Migrations in a Global Context
- T33. Monitoring Arctic Terrestrial Ecosystems and Biodiversity
- T34. Pan-Arctic Science and Policy: How Can Early Career Researchers Shape the Future?
- T35. Paradigms of Arctic Ecosystems during the Polar Night - Challenged by New Understanding?
- T36. Pathways to Northern Coastal Sustainability: Understanding and Responding to Environmental and Social Change on the Pan-Arctic Coast
- T37. Patterns and Processes of Recent Vegetation Change in Tundra Regions
- T38. Permafrost Landscapes in Transition in the Arctic and Subarctic
- T39. Planning, Design and Assessment of Water Resources Systems in Northern Communities
- T40. Rapid Arctic Transitions Related to Infrastructure and Climate Change (RATIC)
- T41. Recent History of Arctic Climate
- T42. Safe, Efficient and Sustainable Shipping in the Arctic
- T43. Snow Interactions with Climate and Ecosystems
- T44. The Future of the Arctic: How Will We Inform Adaptation, What Do We Need to Know
- T45. The Interface Between Science and Policy in the Arctic: New Perspectives on Knowledge to Action.
- T46. The Pacific Arctic Region: Physical Forcing and Ecosystem Response
- T47. Understanding the Role of Ocean, Sea-ice and Atmosphere in Arctic Climate
- T48. We Don't Need Housing, We Need Homes: Social, Economic, Environmental, Cultural, Health and Well-Being Dimensions of Housing Needs in the Arctic
- T49. Why the Health Care System Needs to be Closer to the Inuit Perspectives
- T50. Arctic Search and Rescue

T46. The Pacific Arctic Region: Physical Forcing and Ecosystem Response

Co-chairs

Takashi Kikuchi (Japan Agency for Marine-Science and Technology - JAMSTEC, Japan)

Jacqueline Grebmeier (University of Maryland, United States)

Sung-Ho Kang (Korea Polar Research Institute - KOPRI, South Korea)

Over the last few decades the Pacific Arctic region has warmed and freshened significantly, coincident with major reductions in seasonal sea ice cover, in response to shifts in ocean and atmospheric forcing. These changes demonstrate the regional vulnerability to climate perturbations, the interconnectivity of the Chukchi and Beaufort Seas via the northward inflow through Bering Strait, and dynamic upwelling/down-welling episodes at the continental slope and through the canyons in these connected seas. Physical and biogeochemical modifications of the Bering Strait inflow over the Chukchi shelf occurs and the modified Pacific-origin water is transported both to the Arctic Basin and eastward to the Beaufort Sea, and beyond to the global oceans. Numerous national and international scientific programs have been conducted by the Pacific sector countries (Canada, China, Japan, Korea, Russia and the United States), along with private industry. These programs are rapidly increasing our sampling capability and understanding of the environmental roles on the Pacific Arctic region.

In this session, we encourage contributions on emerging results from field and modeling studies, which implicates ocean-atmosphere interactions including sea ice dynamics/thermodynamics, physical and biogeochemical processes in the water column and recycling processes in the sediments, and biological response throughout the marine food web influenced by Pacific-origin water transited across the region. Topics on changes to external forcing that may promote marine species shifts or evidence of major ecosystem reorganizations are also welcome. This multidisciplinary and international session will provide a state of the art evaluation of the environmental status and trends in the Pacific Arctic region, including the connectivity among physical forcing, biogeochemical cycling, biological response, ecosystem modeling and social-economic interactions.

Deadline of the abstract submission was October 10.

Total 16 abstracts were submitted to session T46.

The session chairs (TK, JG, & SK) already selected and ordered 6 talks & 10 posters and it had been already announced to all presenters.

	MONDAY 8 DEC.	TUESDAY 9 DEC.	WEDNESDAY 10 DEC.	THURSDAY 11 DEC.	FRIDAY 12 DEC.
08:30 10:00		Student Day	Plenary Session	Plenary Session	Plenary Session
10:00 10:30		Coffee Break	Coffee Break	Coffee Break	Coffee Break
10:30 12:00		Student Day	Topical Sessions	Topical Sessions	Topical Sessions
12:00 13:30		Lunch	Lunch	Lunch	Lunch
13:30 15:00	Student Day	Student Day	Topical Sessions	Topical Sessions	Plenary Session
15:00 15:30	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Meeting Adjourns
15:30 17:00	Student Day	Student Day	<u>Topical Sessions</u>	Topical Sessions	
17:00 19:00		Welcome Reception --- <u>Poster Session 1</u>	Reception --- <u>Poster Session 2</u>	Reception	
19:00 23:00			Arctic Inspiration Prize Awards Ceremony	Conference Banquet	

T46 is here !!



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Topical Session Program

[Topical Session Descriptions](#)

Wednesday 10 December

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8:30 - 10:00	Opening Plenary Session										
10:00 - 10:30	Coffee Break										
10:30 - 12:00	T04A. Education in Inuit Nunangat in a time of change	T05. Arctic Ocean Acidification	T07. Arctic Security, Arctic Uncertainty, Arctic Complexity: Learning from the Past, Anticipating the Future	T06A. Arctic Sea Ice: Changes, Processes and Impacts	T26A. Health and Well-Being in Arctic Communities: Advancements in Practices, Processes and Outcomes	T38A. Permafrost Landscapes in Transition in the Arctic and Subarctic	T17. Community Adaptation and Vulnerability in Arctic Regions	T02A. Arctic Canada Geosciences from Land to Sea: Climate, Tectonics and Sedimentation	T33A. Monitoring Arctic Terrestrial Ecosystems and Biodiversity	T03. Arctic Ecosystems as Sources and Sinks of Greenhouse Gases: Analysis at Multiple Scales	T44A. The future of the Arctic: how will we inform adaptation, what do we need to know
12:00 - 13:30	Lunch										
13:30 - 15:00	T04B. Roundtable on Northern University Education	T15A. Changing Commercial and Subsistence Fisheries in a Warming Arctic	T16. Changing Practices Towards Community Engagement in Research	T06B. Arctic Sea Ice: Changes, Processes and Impacts	T26B. Health and Well-Being in Arctic Communities: Advancements in Practices, Processes and Outcomes	T38B. Permafrost Landscapes in Transition in the Arctic and Subarctic	T09A. Arctic Wildlife Co-Management Challenges and Solutions – Bringing Together Inuit and Scientific Knowledge	T02B. Arctic Canada Geosciences from Land to Sea: Climate, Tectonics and Sedimentation	T33B. Monitoring Arctic Terrestrial Ecosystems and Biodiversity	T14A. Changing Arctic Atmospheric Composition	T44B. The future of the Arctic: how will we inform adaptation, what do we need to know
15:00 - 15:30	Coffee Break										
15:30 - 17:00	T18A. Contaminants in a Changing Arctic	T15B. Changing Commercial and Subsistence Fisheries in a Warming Arctic	T51. Arctic Freshwater Systems	T06C. Arctic Sea Ice: Changes, Processes and Impacts	T26C. Health and Well-Being in Arctic Communities: Advancements in Practices, Processes and Outcomes	T38C. Permafrost Landscapes in Transition in the Arctic and Subarctic	T09B. Arctic Wildlife Co-Management Challenges and Solutions – Bringing Together Inuit and Scientific Knowledge	T45. The interface between science and policy in the Arctic: new perspectives on knowledge to action.	T33C. Monitoring Arctic Terrestrial Ecosystems and Biodiversity	T14B. Changing Arctic Atmospheric Composition	T46. The Pacific Arctic Region: Physical Forcing and Ecosystem Response

Thursday 11 December

8:30 - 10:00

Plenary Session

10:00 - 10:30

Coffee Break

10:30 - 12:00

T18B. Contaminants in a Changing Arctic

T11A. Beaufort Regional Environmental Assessment

T28. ICARP III: A Roadmap for the Future of Arctic Research

T31. Indigenous Perspectives on Adaptation

T30. Extractive Industries and the Arctic: Community experiences and environmental legacies

T38D. Permafrost Landscapes in Transition in the Arctic and Subarctic

T12A. Biodiversity Productivity and Function of Marine Ecosystems in a Changing Arctic

T41. Recent History of Arctic Climate

T37A. Patterns and Processes of Recent Vegetation Change in Tundra Regions

T10. Arctic Youth: the Future to a Sustainable Arctic Environment

T34. Pan-Arctic Science and Policy: How Can Early Career Researchers Shape the Future?

12:00 - 13:30

Lunch

13:30 - 15:00

T18C. Contaminants in a Changing Arctic

T11B. Beaufort Regional Environmental Assessment

T22A. Education, Outreach and Communications: Are we Successfully Linking Scientific Research to Education, Public Policy, and Environmental Awareness?

T25A. From Data to Knowledge: Enabling Cross-Disciplinary Science Through Data Archives and Online Access Tools

T24A. Food Insecurity in the Circumpolar Regions – Understanding the Key Drivers for Meaningful Partnerships and Sustainable Solutions

T38E. Permafrost Landscapes in Transition in the Arctic and Subarctic

T12B. Biodiversity Productivity and Function of Marine Ecosystems in a Changing Arctic

T36A. Pathways to Northern Coastal Sustainability: Understanding and Responding to Environmental and Social Change on the Pan-Arctic Coast

T37B. Patterns and Processes of Recent Vegetation Change in Tundra Regions

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Coffee Break

15:30 - 17:00

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T42. Safe, Efficient and Sustainable Shipping in the Arctic

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T08. Arctic Straits: Law, Policy and Environmental Protection in the Northwest Passage, Northern Sea Route, and Bering Strait

Friday 12 December

8:30 - 10:00

Plenary Session

10:00 - 10:30

Coffee Break

10:30 - 12:00

T21. Dynamics and Recent Changes of Arctic Glaciers and Ice Shelves

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Lunch

13:30 - 15:00

Plenary Panel & Closing - The Future of International Arctic Research

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