



## Exploring the user-producer interface of weather and sea ice information for Arctic marine mobilities: a dedicated session at the Ninth International Congress on Arctic Social Sciences (ICASS)

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*Note from the editors: The fortieth Antarctic Treaty Consultative Meeting (ATCM XL) was held in Beijing, China, from 22 May to 1 June 2017. The Committee for Environmental Protection (CEP XX) met from 22 May to 26 May, while Working Group 1 (Policy, Legal and Institutional) and Working Group 2 (Science, Operations and Tourism) met between 23 May and 31 May. All papers are available via the Antarctic Treaty Secretariat website ([www.ats.aq](http://www.ats.aq)).*

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## Exploring the user-producer interface of weather and sea ice information for Arctic marine mobilities: a dedicated session at the Ninth International Congress on Arctic Social Sciences (ICASS)

(8–12 June 2017, Umeå, Sweden)

In March 2014, the Societal and Economic Research and Applications (SERA) sub-committee of the Polar Prediction Project (PPP) was formed, consisting of polar social scientists from North America, Europe and New Zealand, including the authors. The Polar Prediction Project is a World Meteorological Organization (WMO) initiative to support coordinated international research efforts to improve weather and environmental prediction services for the polar regions.

At the International Congress on Arctic Social Sciences (ICASS IX) in Umeå, 8–12 June 2017, we organised a session to raise awareness and to involve other Arctic social scientists in the PPP-SERA agenda. The session focused on the user-producer interface of weather and sea ice information for Arctic marine sectors. In particular, we intended to discuss the complexities of actors, information needs, information systems and infrastructures, funding structures, data management approaches and applications of weather and sea ice prediction services in the Arctic.

Around 15–20 interested colleagues listened to four presentations covering a variety of issues, including the emergence and dynamics of new information service platforms, the use of information services in expedition cruising, Low Impact Shipping Corridors (LISC) as instruments to enhance marine safety in polar waters, and ways to improve the modelling of ice conditions. After a brief introduction to the session and the PPP-SERA group by Gita Ljubcic (Carleton University), Maaik Knol (University of Tromsø) kicked off the session by presenting “Information systems for the Arctic marine areas: drivers, dynamics and paradoxes”. This paper aimed to provide insight into the drivers behind, and dynamics of emerging information platforms for the Arctic, with a particular focus on providers of information about sea ice and weather conditions, with an emphasis on the European Arctic. In particular, Knol compared

basic characteristics and challenges of three platforms to enhance a deeper understanding of current developments, including BarentsWatch, Arctic Web and Polar View.

Second, Machiel Lamers (Wageningen University) provided insights into how weather and sea ice information is used in the Arctic marine sector by discussing a case study of expedition cruising in the European Arctic. Little is known about what information sources and systems are currently being used by expedition cruise operators in various decision-making contexts (e.g. planning and operations), let alone what the climate information needs of operators are to continue satisfying customer expectations in a responsible and sustainable manner in the future. Taking a practice-theory perspective Lamers argued that expedition cruise operation relies largely on the freely available services provided by national meteorological institutes. Furthermore, he emphasised that these information systems are one among many factors used in decision-making, and that experience and competence are vital for adequate interpretations. Finally, Lamers highlighted that communication media played a crucial (constraining) role in the selection of the information services used and how these were used.

Third, Annika Ogilvie (University of Ottawa), presented her work on how to improve the prediction of pressured ice in the Hudson Strait, Canada. Despite ongoing warming, difficult ice conditions still present a significant threat to vessels navigating through Arctic waters. Pressured sea ice occurs when winds, tides or currents interact in regions where ice concentration is high and can cause all types of ships, including icebreakers, to become beset (i.e. stuck in ice). Pressured ice is difficult to predict, and there are currently no reliable forecasting methods to aid in ship navigation. Ogilvie's presentation aimed to improve understanding of the presence, formation and impact of pressured ice ridges in the Hudson Strait, by correlating ship besetment events identified from historic ship logs with in situ weather and environmental conditions and by evaluating model effectiveness in predicting actual pressured ice events.

The final presenter of the session, Jenna Joyce (University of Ottawa) presented her work on the implications of the development of Low Impact Shipping Corridors (LISC), which have the goal of increasing shipping safety by providing predictable services to mariners transiting the corridors in the Canadian Arctic. These LISCs currently do not address marine use by northern residents, such as resource harvesting and culturally important sites. To address this gap, Joyce's research focused on geospatially locating areas of known marine use and assessing their cultural importance and ecological significance in the Kitikmeot region of Nunavut, Canada. The results of such a benchmarking exercise can be used to generate comprehensive risk zones within the LISCs and to inform about site-specific needs for investments in environmental weather and ice services, marine infrastructure, places of refuge, deployment of assets and future monitoring needs.

The session culminated in a lively discussion with the audience. Aside from clarifying questions on conceptual and methodological issues, the audience raised and discussed a number of relevant questions regarding the societal implications of weather and sea ice systems: Do these systems empower disenfranchised groups, or rather assist already powerful actors? Do they create a safer marine Arctic, or rather lead to an illusion of safety? Comments were also made on the various purposes that information serves; apart from the economic purposes discussed in the four presentations weather and sea ice information also serves military purposes and environmental-management purposes, and it facilitates marine safety and data transparency. Further, members of the audience also highlighted the diversity of local or regional approaches to developing individualised products or services to meet particular user needs, as exemplified by the Alaska Marine Exchange and Nunavut Tunngavik Incorporated AIS coastal network.

ICASS IX brought together close to 700 researchers from different social science disciplines to discuss current research insights from the Arctic region in the bustling Swedish Arctic university town of Umeå. During the opening reception the delegates enjoyed reindeer soup, flat bread and Sami chanting in the regional open air museum. In addition to numerous interesting

presentations, the conference delegates witnessed the election of Andrey Petrov (University of Northern Iowa) as the next president of the International Arctic Social Science Association. The conference was closed with a banquet and swinging party with the excellent Umeå University band.

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## EU high-level Arctic event: “A Sustainable Arctic – Innovative Approaches”

(15–16 June 2017, Oulu, Finland)

“The Arctic is a new gateway to the world, and innovative cooperation for its sustainable development is key to the future of the planet.” With these promising and future-oriented words, the High Representative of the European Union for Foreign Affairs and Security Policy Federica Mogherini opened a European Union (EU) High-Level Arctic event on 15 June 2017 in Oulu, one of the thriving Arctic cities in Finland, which currently chairs the Arctic Council. The EU’s ambitions for a sustainable but economically and socio-culturally thriving Arctic, as eloquently presented in Mogherini’s opening address, were seconded by Commissioner Karmenu Vella of the European Commission (EC), who described the Arctic as a laboratory for global sustainable development, emphasising the business and employment opportunities that could be created by responsible eco-politics. The meeting was, however, more than powerful statements by leading politicians, who had dedicated two days of their busy schedules to meet with Arctic stakeholders and talk about the region’s future. The meeting gave a voice to Arctic residents, investors and indigenous peoples’ representatives – from Europe and beyond.

Conversations between official representatives from European countries and the Arctic were the focus of the first day of this high-level meeting. It was particularly interesting to hear the perspectives of representatives from non-Arctic countries, such as Hungary, as well as from countries outside of Europe, such as Canada. Expectations in relation to Arctic development