

INTERVIEW OF THE MONTH

LOUIS FORTIER – SCIENCE AND INNOVATION DIRECTOR, INSTITUT NORDIQUE DU QUÉBEC

Trained at Université Laval (M.Sc. 1979) and McGill University (Ph.D. 1983), a NATO postdoctoral fellow (Plymouth, UK 1984-1985) and Professor at Université Laval, Louis Fortier holds the Canada Research Chair on the response of Arctic marine ecosystems to climate warming.

A tireless promoter of a multidisciplinary, cross-sectorial approach to the major scientific and socioeconomic concerns raised by Arctic warming, Louis Fortier has coordinated Canada's participation in a number of international Arctic programs such as the Saroma-Resolute Study (SARES) and the Northeast Water Polynya Study (NEW). Since 1997, he has headed the International North Water Polynya Study (NOW, 1997-2001) and the Canadian Arctic Shelf Exchange Study (CASES, 2002-2007), two NSERC Research Networks on the Arctic Ocean's response to global warming. He also heads the pan-Canadian consortium of Arctic specialists that retrofitted the research icebreaker Amundsen using funding from the Canada Foundation for Innovation. Under his leadership, Canada's top Arctic specialists in the natural, social and health sciences founded Canada ArcticNet, a Network of Centres of Excellence of Canada (2004-2018), which aims to anticipate the impacts of climate warming and development of the Arctic on the economy and Canadian Arctic communities. In 2010, he set up the Canada Excellence Research Chair in remote sensing of Canada's new Arctic frontier and presided over the creation of the Takuvik international mixed unit with CNRS (France). Since 2014, Louis Fortier and his collaborators have consolidated Québec's leadership in Northern sciences thanks to the Institut Nordique du Québec of which he is the Science and Innovation Director.



Mr. Fortier, ArcticNet advocates an inclusive approach marked by collaboration between the different players involved in the consortium's research projects.

In your opinion, what role could the marine industry play in these projects?

We recently submitted the proposal for renewing ArcticNet for 2019-2024.

«The marine industry is an important partner in many of our research projects aimed at sustainable development of a blue economy (transport, tourism, fisheries) in the Canadian Arctic.»

In the transport sector, ArcticNet will continue:

1. Mapping the ocean floor and obstacles to navigation to support more than 15 Canadian and foreign operators;
2. New forms of collaboration with the industry on the impact of sea ice on Arctic navigation;
3. Partnering with Fednav and Amundsen Science to procure a modern research icebreaker for Canada;
4. Implementing the Churchill Marine Observatory for study of the detection, impacts and mitigation of oil spills in sea ice;
5. A joint project with the WMO and Alfred Wegener Institute (Germany) to improve predicting ice and weather conditions for safer Arctic navigation.

Similarly, to what extent can ArcticNet's research projects be of interest to the maritime community?

With the current shrinking of the ice cover and the near disappearance of multiyear ice floes, this century, the Arctic Ocean and the seas bordering it will definitely become a new field of operations and development for the shipping, maritime tourism and fisheries sectors.

We have already witnessed spectacular marine industry development on the Russian side of the Arctic Ocean, where the ice floes have shrunk more quickly than on the North American side.

However, North American governments and the North American public insist that Arctic development be sustainable and not adversely affect the environment or the lifestyle of Northern inhabitants, as is unfortunately the case in Siberia.

«ArcticNet's prime goal is to provide public and private sector decision makers with the scientific information and facts required to ensure that this socioeconomic development occurs safely and sustainably where both the environment and Northern communities are concerned.»

Since 2002, ArcticNet has rented the CCGS icebreaker Amundsen from May to September for expeditions in the North and the Arctic to collect data.

Can you explain to us what impacts the current lack of operational icebreakers has on your research work?

The impacts on Canadian research are catastrophic.

«Since, for all vessels, refitting is more frequent and takes longer, the Amundsen is needed more and more for icebreaking operations and Coast Guard escort services.»

Since 2015, more than 175 days of research could not be accommodated.

The Canadian scientific community has lost its leadership position on major international projects, such as the scientific circumnavigation of Greenland, as well as millions of dollars in research grants, in addition to the loss of Canada's reputation, since Canadian and foreign Amundsen users have lost confidence in this key infrastructure's availability.

In partnership with Fednav, Amundsen Science (the corporation that manages the Amundsen's scientific operations) proposes going abroad immediately to build the modern icebreakers Canada needs to ensure winter navigation on the St. Lawrence, summer navigation in the Arctic and Arctic research.

In your opinion, what repercussions (positive and negative) will climate change have on the marine industry?

I had the opportunity to discuss this issue at the opening plenary presentation of the World Conference Cities and Ports held in Québec City in June.

To summarize, three main observations stand out.

First, Arctic warming is already opening up new transpolar sea routes that could, to varying degrees, reorganize shipping traffic in the Northern Hemisphere and modify shipping traffic in east coast North American ports, including Québec City and Montréal.

«These changes are still fraught with uncertainty; factors like the lack of infrastructures in the Arctic, year-to-year variability of the ice cover and widening of the Panama Canal could have an impact.»

Second, the industry must convert rapidly to lower-emission means of propulsion: initially, clean diesel/solar or clean diesel/wind power hybrids, moving entirely to solar and/or wind power.

Third, it will be important for ports to adapt now to a rapid increase in the sea level over the coming century and to intensification of storms and tidal waves.



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