By K. JOSEPH SPEARS

CANADA: An Arctic Nation

Canada is an Arctic nation, and as a nation we need to look at the Arctic from a global perspective so we can identify and seize political, international, and commercial opportunities in the region in the 21st century.

In a Globe and Mail op-ed entitled "The last thing we need is another foreign policy review," from January 20, 2012, the former Chief of Staff of Prime Minister Mulroney and Ambassador to the United States, Derek Burney, and Professor Fen Osler Hampson, the Director of the Norman Paterson School of International Affairs at Carleton University, wrote about Canada's foreign policy and questioned the need for an another foreign-policy review. They stated:

> *We're an Arctic and Western Hemisphere nation, our foreign policy priorities should anchor those dimensions as well, especially since the economic potential of both is likely to increase in the decades ahead.*

They argue at the conclusion of their opinion piece:

> *Ultimately, the effect of Canada's role in the world will be determined more by what we do than what we say we should do.*

The difficult question is what should be Canada's Arctic policy, and what Canada should do in the Arctic. Canada needs to shift its thinking about the Arctic from a domestic perspective to an international one. This will allow Canada to seize various opportunities. One significant challenge is that the region is changing so fast, there is no single source of information and the issues cut across jurisdictions, disciplines and the private and public sectors. We need an ongoing and sustained dialogue. It is a challenge, but one that can be overcome in typical Canadian fashion when we as a nation put our minds to it. We have a long successful history of projects carried out as a nation, when the public and private sectors collaborate on a project or issue. Some great examples are the CPR's transcontinental railway in the 19th century and the construction of the St. Lawrence Seaway in the 20th century. The Arctic is Canada's project in the 21st century.

The first step in solving a problem is to identify the problem, and then to collect all the facts, so that we can discuss and formulate an Arctic policy. This article will provide readers with a brief overview of the present state of selected Arctic issues and a way forward for Canada.

We need to look at the Arctic Ocean basin as a semi-enclosed sea, not unlike the Mediterranean, and we need to change our perspective and look at the region as a whole. Canada is one of five Arctic coastal nations, which include the United States, Russia, Norway and Denmark, commonly referred to as the "Arctic Five".

A great deal of attention has focused on delineating the outer limits of the continental shelf and mapping the continental shelf for the purpose of making claims. Canada has collected much of this data, working in close cooperation with the United States.

Photo: IPY-Canadian Coast Guard Captain Stephane Julien

It should be noted that in the Arctic Ocean, there is an area of high seas commonly referred to as the "doughnut hole," which is outside the jurisdiction of any of the Arctic coastal nations. Under the Law of the Sea Convention, the Arctic Ocean's high seas need to be managed for the benefit of all humankind. This is why so many international players are interested in the potential fishing, mineral and other resources and shipping routes in the high seas portion of the Arctic Ocean.

In addition, there is potential for new shipping routes in the Arctic Ocean to open up, which could greatly alter world trade patterns. Non-Arctic nations have a right under international law to be part of this process. Canada has the opportunity to become an "Arctic superpower," as Canada's former Foreign Minister Lawrence Cannon stated in June 2009.

In 2013, for a duration of two years, Canada will be Chair of the Arctic Council, a regional organization that was created in 1996 to look at Arctic issues. Canada was a major supporter of the creation of the Arctic Council. Over time, the Arctic Council has grown in stature and importance and has become more robust, and its role continues to develop. Full member-

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File photo

Late-season Arctic sealift operations.

ship on the Arctic Council is reserved for Arctic nations and indigenous groups in the region. Member nations include Canada, Iceland, Russia, Denmark, the United States, Norway, Finland and Sweden. The Arctic Council also allows a number of non-Arctic nations to be observers and attend the Arctic Council meetings.

In 2009, both the EU and China sought permanent observer status, but the Arctic Council has presently suspended the process. Prior to 2009, nations who obtained observer status have included Poland and Spain. Since that time, China, Korea and Italy have been ad hoc observers. Many commentators have stated that non-Arctic nations joining the Arctic Council will somehow dilute the Arctic Council's functioning.

The Arctic Council does not deal with security issues and has no binding effect on the member nations. However, it promotes "cooperation, coordination and interaction amongst Arctic states," and is the leading source of cooperation on Arctic issues, having examined Arctic shipping, climate change and the oil and gas industries in detail.

The Arctic Council has also become more robust in recent years in dealing with governance of Arctic activities and issues. It addresses a variety of other issues of importance to the region and is becoming more active in setting binding international agreements. Arctic coastal states are free to regulate within their boundaries, although uniformity is generally encouraged with regards to Arctic activity, and the Arctic Council provides an important international forum.

Arctic SHIPPING

In May 2011, the Arctic Council nations signed an international search and rescue agreement in the Arctic. Canada played a major role in creating and implementing this international agreement, and a SAR exercise was held in Whitehorse in October 2011 with all the Arctic nations participating. It is likely that we will see more functional international agreements, as the Arctic Council responds to some of the challenges in the Arctic Ocean, the organization continues to mature and work hard on international issues.

Some commentators and those who follow the Arctic Council's activities have indicated that the next international agreement will likely be on pollution prevention and response from shipping in the Arctic Ocean. The Arctic Council Arctic Marine Shipping Assessment 2009 Report is a very useful document. Canada, through Transport Canada, played a key role in this report and the recommendations on shipping, which the Arctic Council is moving forward to implement as international Arctic shipping increases.

Many nations have pushed for an Arctic treaty, not unlike the Antarctic treaty, that would control all activities in the Arctic Ocean. The Arctic Council has responded by saying that under the present Law the Sea Convention, the present international multilateral framework is well-suited to manage Arctic Ocean issues on a multilateral basis. In 2011, the Arctic Council said it would set new criteria for countries seeking permanent observer status. A key component of gaining observer status would be the recognition by the nation seeking observer status to agree to the "the Arctic states' right to administer the Arctic Ocean under the Convention of the Law of the Sea."

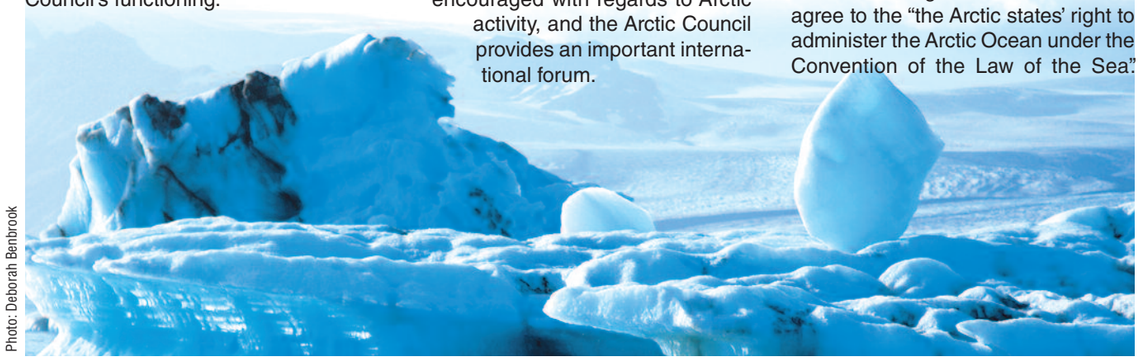

Photo: Deborah Benbrook

This to ensure that that a new regime is not put forward.

Some interpretations of the Arctic Ocean's territory include all of the Arctic Ocean and not just the area within the coastal states' power to regulate. These interpretations would indicate that many non-Arctic nations, including China, are positioning themselves to have a say in how international activities in the Arctic Ocean are governed.

With the diminishing sea ice, both destinational and in-transit international shipping is going to play a key role in all of these issues in the Arctic Ocean. Canada pioneered icebreaking technology, and also the governance of Arctic shipping. The Arctic Waters Pollution Prevention Act (AWPPA), first introduced in 1970, serves as the basis of a risk-based approach to Arctic shipping, and is being considered at the United Nations International Maritime Organization (IMO) in their work on a Polar Code, which will serve as a uniform regulatory framework for Arctic shipping.

These principles regarding Arctic governance, which Canada pioneered, can be developed more fully in the Arctic Ocean. Canada pushed for the inclusion of the ice-covered water provision, included in Article 234 of the Law of the Sea Convention, providing special status and regulations to ice-covered areas for the regulation of shipping. At the time, the AWPPA provisions were considered to be radical, but have since become a mainstream approach to regulation of Arctic shipping.

At present, rapidly diminishing and thinning sea ice in the Arctic Ocean, coupled with strong global demand, is allowing for increased commercial activity in resource development, and international and destinational shipping. This is a direct result of climate change.

The Arctic Ocean Basin is expected to become central to the global economy. Russia has been promoting the Northern Sea Route, as a deep-water route that runs across the Russian Arctic coast, and has seen a variety of commercial traffic in 2011. Marine traffic is expected to grow in the coming years. The Northern Sea Route (or Northeast Passage as it has been sometimes called) provides a shorter and arguably pirate-free route for commercial shipping between the Atlantic and Indo-Pacific. Russia's Prime Minister Putin has been actively promoting this shipping route. In 2011, 75 different foreign flags were flying from vessels in Russian Arctic waters. There has been discussion that the Northern Sea Route could have a major impact on the Port of Vancouver because it provides a shorter route between Northern Europe and the West Coast of North America.

The debate in Canada has so far focused more on the international status of the Northwest Passage rather than on any commercial implications. Canada needs to look more broadly at how global shipping routes could change as a result of the lack of sea ice and the need to look at how we can position ourselves as a leader in Arctic shipping governance. We need to take a solid risk management to Arctic shipping that is fully supported at the International Maritime Organization (IMO) and the Arctic Council.

Canada has taken a strong interactive risk management approach to regulation of shipping, which includes using a variety of technologies including space-based assets, AIS, long-range radar, aerial sensors, regulation and compulsory pilotage and reporting systems such as the now-mandatory reporting requirements under NORDREG. Canada as a nation needs to look at this from a holistic ocean-management standpoint, and look at how we may deal with search and rescue and oil pollution response in a remote, environmentally sensitive region.

Photo: NASA-Kathryn Hansen

Research on the Arctic Sea ice.

This is an opportunity for Canada to showcase its technology and governance to the other Arctic coastal nations and position itself as an Arctic superpower when it comes to the governance of Arctic shipping. Canada can set the international standards in governance of shipping, training, service delivery and the export of Canadian technology in this specialized area. Canada can use its expertise to set the bar high for regulation of Arctic shipping.

As sea ice diminishes in the Arctic Ocean, commercial shipping may increase in the Northeast and Northwest Passages. This remains to be seen, although from an environmental standpoint the situation in the region is rapidly changing and warming in the summer months.

Scientific research is struggling to keep up with these rapid environmental changes. The multi-year ice in the Arctic Ocean has diminished to a great extent. This thick ice built up over a period of years has diminished both in thickness and coverage. This sea ice was previously considered to be a barrier to commercial shipping in the Arctic Ocean. It has been predicted that we might see a completely ice-free Arctic Ocean by 2030, but some scientists are now saying that we may see this as soon as in the next few years.

Photo: Patrick Kelley, U.S. Coast Guard

Polar bear on thin ice.

A recent study has found that there are large plumes of methane from the seabed being released off the western Siberian coastline, due to thawing methane hydrates. These plumes have been observed as being up to one kilometre in circumference and visible on the sea's surface. These gases are being absorbed into the atmosphere. The lack of sea ice, which no longer radiates heat back into space, is warming Arctic waters.

Methane has a short half-life in the atmosphere, is very potent as a greenhouse gas and warms the atmosphere. It is becoming clear that the predictive models that have been utilized are not keeping up with the actual changes. The year 2007 saw the most diminished ice in the region, and 2011 has seen a similar result. Sea ice has been consistently diminishing and thinning since environmental records have been kept.

These positive feedback loops are not well understood. This coupled with melting permafrost this may have a huge impact on further sea ice changes in the Arctic.

We need to incorporate scientific research into all aspects of Canada's Arctic policy in order to position ourselves to develop strong and clear actions in this rapidly changing region. We need to create a portal on scientific research. One such organization is ArcticNet, a consortium of academic institutions, northern communities and federal and provincial departments. ArcticNet aims to study the impacts of climate change in the coastal Canadian Arctic.

The International Polar Year 2012 conference, From Knowledge to Action, will be held in Montreal from April 22-27, 2012.

This conference presents an opportunity for Canada to further develop and strengthen its position in the Arctic and work closely with the United States, a move encouraged by Derek Burney and Professor Fen Osler Hampson in their recent op-ed piece.

There are many opportunities in the Arctic Ocean for Canada, and for Canada's commercial sector in a broad range of Arctic developments including shipping and the regulation of shipping. The problem is that the issues are developing rapidly, with significant international attention focused on the region as nations line up to participate in the resource and shipping opportunities which are of global interest.

Seizing these opportunities will take a concerted effort by Canada and arguably needs to include Canada's private sector in an organized fashion, in order to allow for a free-flowing exchange of ideas and discussion and identification of the opportunities. This requires the development of a formalized public-private partnership for the sharing of information on an ongoing sustained basis. Canada's academic institutions and private think tanks need to play a role in this if Canada truly is to be an Arctic nation.

Photo: Ansgar Walk, Wikipedia

The issues surrounding the Arctic Ocean are important to many, and there is global pressure from geopolitical, environmental, commercial shipping, natural resources and indigenous peoples. How this will effect Canada and the Harper Government's Northern Strategy remains to be seen, but cannot be treated in isolation.

Canada is an Arctic nation, but is no longer alone in the Arctic. It needs to develop strategic partnerships to dealing with this rapidly changing dynamic with new players coming into

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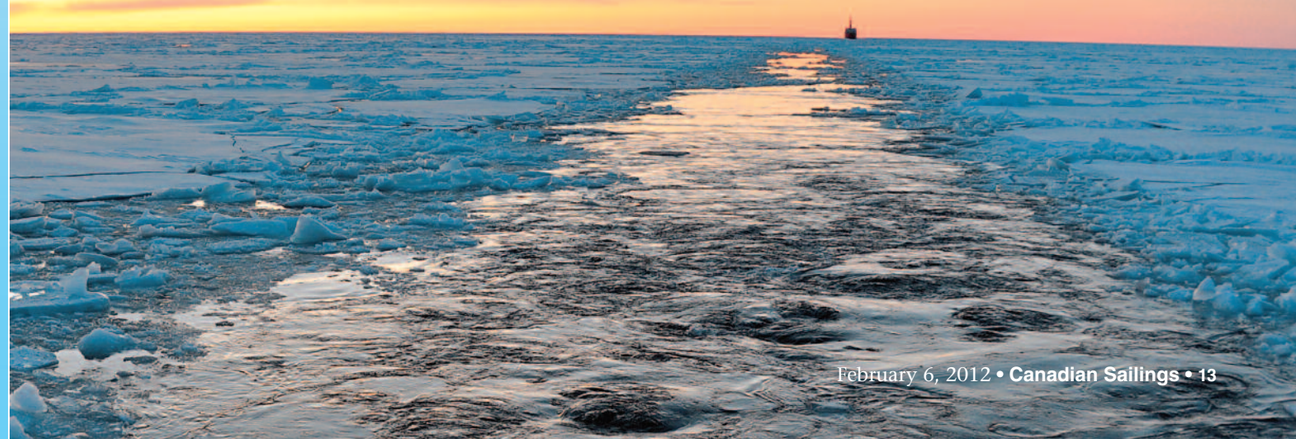

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Mexico. As a result, the study was deferred, as community consultations for the design and permitting of the scientific study were not completed. Dr. Lee has conducted three controlled-spill experiments in Canada, but none north of 60. According to Dr. Lee, what is needed is a multi-year scientific research program to fully evaluate the effectiveness and biological effects of current and emerging oil spill cleanup technologies under Arctic conditions.

When asked what effect dispersants have on the food chain, Dr. Lee indicated that chemical dispersants would be added to the environment only if it was determined that such a course of action would be less detrimental than leaving the oil alone. He added that the use of any oil spill countermeasure strategy should proceed only when it offers an advantage over other methodologies and natural recovery.

Oil is toxic in large quantities. Dr. Lee said that dispersants generate small oil droplets that are biodegraded much more rapidly, and tides and currents dilute chemically dispersed oil more effectively than physically dispersed oil due to the smaller droplet size.

This speeds up the reduction of concentrations below toxic levels. In addition to identifying appropriate cleanup technologies, Dr. Lee noted that in the case of a large spill in the Arctic, "There is a major logistics problem in how to get enough responders out there and how to treat waste generated by the cleanup process used." He pointed out that treating the oil in place by enhancing the process of natural degradation through the application of chemical dispersants may overcome these challenges. However, in order to assess the efficacy of such an approach, it is necessary to conduct experimental field trials to validate the effectiveness of current and emerging alternative techniques in the environment where they are meant to be used.

Brian Johnston, Sales Manager, Americas, Rutter Inc. of St. John's, said ice adds additional complexity to an incident of oil on water because it presents additional challenges with regard to containment and cleanup. One capability that's necessary in oil spill response, he added, is the ability to see oil in the water around the ice in both daytime and nighttime. He noted that when an Icelandic bulk carrier ran aground in Norway in February 2011, Rutter's ice navigation system enabled the ship's captain to see ice 24/7 in support of containment and cleanup efforts. The solution, he said, is to integrate multiple technologies, such as radar and an infrared camera, which provide multiple sensor inputs, as opposed to having sensor silos. Real-time wave and current information is also critical for plotting the trajectory of the slick, he added, pointing out there's a time delay in receiving information provided via satellite.

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the region. We need to strengthen cooperation and engage with the United States on a variety of Arctic issues.

We need to change our perspective of the Arctic Ocean and move from a Mercator projection view of the region looking upward, and rather, view the Arctic Ocean from the North Pole looking down at the region as a whole, with a strong Arctic Council.

In order to make sound commercial, policy, environmental and political decisions, decision-makers in Canada need to take a global and long-term view, and consider the changing, dynamic nature of the region. Information and knowledge is power.

This article provides a starting point for Canadian Sailings readers to have a snapshot of what is happening in the Arctic Ocean. This rapidly changing region is becoming increasingly important to international community. Canada is not 'on thin ice', and has the potential to become an Arctic superpower if it considers these issues carefully.

This is a great opportunity for Canada to take action, especially since the Arctic Council is coming to Canada in 2013. Other nations will judge us by our actions in the Arctic and not what we say we are going to do.

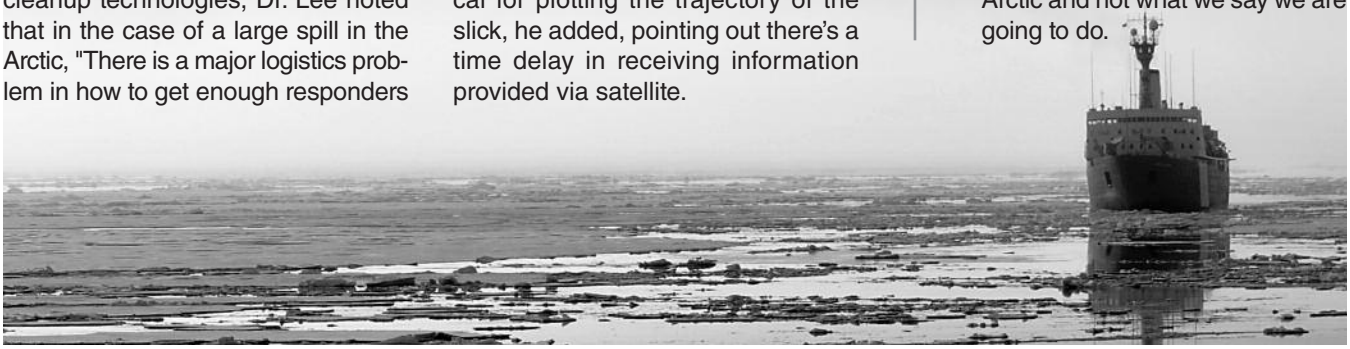

Photo: U.S. Geological Survey