Monday, May 4, 2009

The Standing Senate Committee on Fisheries and Oceans has the honour to table its

SECOND REPORT

Your Committee, which was authorized by the Senate on Thursday, March 12, 2009 to examine and report on issues relating to the federal government's current and evolving policy framework for managing Canada's fisheries and oceans, herewith tables its report entitled: *Rising to the Arctic Challenge: Report on the Canadian Coast Guard.*

Respectfully submitted,

WILLIAM ROMPKEY, P.C.

Chair of the Committee

Senate Sénat
CANADA

RISING TO THE ARCTIC CHALLENGE: REPORT ON THE CANADIAN COAST GUARD

Report of the

Standing Senate Committee on Fisheries and Oceans

The Honourable William Rompkey, P.C.
Chair

The Honourable Ethel M. Cochrane
Deputy Chair

April 2009

Ce rapport est aussi disponible en français

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(Committee Business — Senate — Reports)
40th Parliament — 2nd Session

MEMBERSHIP

The Honourable William Rompkey, P.C., *Chair*

The Honourable Ethel M. Cochrane, *Deputy Chair*

and

The Honourable Senators:

Willie Adams
Joan Cook
James Cowan
Elizabeth Hubley
Janis G. Johnson
Michael L. MacDonald
Fabian Manning
Nancy Greene Raine
Fernand Robichaud, P.C.
Charlie Watt

Ex-officio members of the committee:

The Honourable Senators James Cowan (or Claudette Tardif)
Marjory LeBreton, P.C. (or Gerald J. Comeau)

Other Senators who have participated on this study:

The Honourable Senators Baker, Campbell, Comeau, Eyton, Gill, Gustafson and Meighen.

Parliamentary Information and Research Service, Library of Parliament:

Claude Emery, Analyst

Senate Committees Directorate:

Danielle Labonté, Clerk of the Committee
Louise Archambeault, Administrative Assistant

ORDER OF REFERENCE

Extract from the *Journals of the Senate*, Thursday, March 12, 2009:

With leave of the Senate,

The Honourable Senator Comeau moved, seconded by the Honourable Senator Cowan:

That the Standing Senate Committee on Fisheries and Oceans be authorized to examine and to report on issues relating to the federal government's current and evolving policy framework for managing Canada's fisheries and oceans;

That the papers and evidence received and taken and work accomplished by the committee on this subject since the beginning of the First Session of the Thirty-ninth Parliament be referred to the committee;

That the committee report from time to time to the Senate but no later than June 30, 2010, and that the Committee retain all powers necessary to publicize its findings until December 31, 2010.

The question being put on the motion, it was adopted.

Paul C. Bélisle

Clerk of the Senate

RISING TO THE ARCTIC CHALLENGE:
REPORT ON THE CANADIAN COAST GUARD

THE STANDING SENATE COMMITTEE
ON FISHERIES AND OCEANS

CONTENTS

ACRONYMS

AMSA – Arctic Marine Shipping Assessment

ASIWG – Arctic Security Interdepartmental Working Group

AWPPA – *Arctic Waters Pollution Prevention Act*

CCG – Canadian Coast Guard

CPC – Canadian Polar Commission

CF – Canadian Forces

CFL – Circumpolar Flaw Lead

CLCS – Commission on the Limits of the Continental Shelf

COSEWIC – Committee on the Status of Endangered Wildlife in Canada

CRPG – Canadian Ranger Patrol Group

DFAIT – Department of Foreign Affairs and International Trade

DFO – Department of Fisheries and Oceans

ECAREG – Eastern Canada Vessel Traffic Services Zone Regulations

EEZ – Exclusive Economic Zone

ICC – Inuit Circumpolar Council

IMO – International Maritime Organization

INAC – Indian and Northern Affairs Canada

IPY – International Polar Year

ITK – Inuit Tapiriit Kanatami

LOS – Law of the Sea

MCTS – Marine Communications and Traffic Services

NACGF – North Atlantic Coast Guard Forum

NLCA – Nunavut Land Claims Agreement

NORDREG – Arctic Canada Traffic System

NSP – National SAR Program

NTI – Nunavut Tunngavik Incorporated

PCSP – Polar Continental Shelf Project

SAR – Search and Rescue

UAV – Unmanned Aerial Vehicle

PREFACE

On 21 November 2007, the Senate of Canada authorized the Standing Senate Committee on Fisheries and Oceans (the Committee) to examine and report on issues relating to the federal government's current and evolving policy framework for managing Canada's fisheries and oceans. The Senate also passed a motion that allowed the papers and evidence gathered at hearings held during the previous session of Parliament to be referred to the Committee.

Beginning on 6 December 2007, and in keeping with its order of reference, the Committee held public hearings on the Arctic in Ottawa to better understand the issues at hand. An interim report *The Coast Guard in Canada's Arctic* – work in progress based on evidence gathered in Ottawa from 5 February 2008 to 15 May 2008 – was tabled on 23 June 2008. The northern perspective on issues still needed to be fully heard and considered, however.

During the first week of June 2008, the Committee travelled to Nunavut where turbot and northern shrimp support commercial marine fisheries in Canada's northern waters. Public hearings were conducted in Iqaluit on 2 June, and in Pangnirtung on 5 June 2008. Both these meetings concluded with an open-mike session to hear from members of the public.

Committee members were also briefed as part of fact-finding work by staff at the Canadian Coast Guard and Marine Communications and Traffic Services facility in Iqaluit. In addition, they met with representatives of the communities of Resolute Bay, Arctic Bay, Pond Inlet and Qikiqtarjuaq, and visited the port facility at Nanisivik where construction of a new Canadian Forces naval docking and refuelling facility is to begin in 2010.

Through skilled interpreters, the Committee was able to work in English, French, and Inuktitut throughout its stay in Nunavut. Topics of particular interest to Committee members were the role of the Canadian Coast Guard, the Nunavut marine commercial fisheries, sovereignty, and climate change.

The Committee's work was considerably delayed with the dissolution of the Thirty-Ninth Parliament in September 2008 and the federal election on 14 October, and with the dissolution of the Fortieth Parliament in December 2008.

LIST OF RECOMMENDATIONS

Recommendation 1:

The Committee recommends that Canada uphold its position that the waters of the Northwest Passage are its internal waters, and that Canada should be prepared to defend any legal challenge. (See pages 21-27, 42-45.)

Recommendation 2:

The Committee recommends that Canada develop a much stronger year-round, national presence and enforcement capability to show the world that Canada is serious about controlling the Northwest Passage, protecting Canadian interests and Canada's northern residents, and making the waterway a safe and efficient shipping route. (See pages 21-27, 42-45.)

Recommendation 3:

The Committee recommends that the Government of Canada consider Goose Bay, Labrador, as a sub-Arctic staging area for the coordination and support of Coast Guard, fisheries, search and rescue, surveillance and other Arctic activities. (See pages 34 and 45, 44.)

Recommendation 4:

The Committee recommends that the Nunavut Marine Council (Part 4, Article 15.4.1 of the 2003 Nunavut Land Claims Agreement) be created as a forum for priority setting and planning, and as a practical means to enhance Canada's sovereignty in marine areas. (See pages 36 and 44.)

Recommendation 5:

The Committee recommends that Canada assume a leadership role in promoting international cooperation on: (a) issues relating to continental shelf claims; and (b) the development of a mandatory common code relating to the construction, manning and equipment of all vessels operating in the Arctic Ocean equal to Canada's domestic standards. (See pages 43 and 44.)

Recommendation 6:

> **The Committee recommends that Canada demonstrate its commitment to international co-operation within the Arctic Council by re-establishing the position of Ambassador for Circumpolar Affairs (which was eliminated in 2006).** (See page 44.)

Recommendation 7:

> **The Committee recommends that the Department of National Defence make the Canadian Rangers an integral part of the Canadian reserves and provide them with marine capability.** (See pages 35 and 45.)

Recommendation 8:

> **The Committee recommends that the Government of Canada establish an Arctic Strategy Advisory Committee, lead by Indian and Northern Affairs Canada, to monitor and to advise in the development and implementation of an effective and integrated strategy for the North. The new Arctic Strategy Advisory Committee should comprise representatives from the federal government departments and agencies with a mandate in the Arctic, with particular emphasis on the Coast Guard, the various Aboriginal/Inuit groups in the region, and the three territorial governments.**(See pages 34 and 45)

Recommendation 9:

> **The Committee recommends that Inuit, with their unique knowledge of the region, be recruited for the Coast Guard whenever possible.** (See pages 63-64, 66 and 68.)

Recommendation 10:

> **The Committee recommends that the Coast Guard, as the expert agency on the maritime situation facing Canada in the Arctic, formulate and implement a long-term strategic vision to guide it for the future.** (See pages 65-66 and 68.)

Recommendation 11:

> **The Committee recommends that NORDREG, Canada's current voluntary vessel traffic system in the Arctic, be made compulsory. All foreign ships that enter Canada's Arctic waters should be required to register with NORDREG, regardless of vessel size.** (See pages 54-59, 67 and 69.)

Recommendation 12:

> **The Committee recommends that the federal government amend the definition of Arctic waters in the *Arctic Waters Pollution Prevention Act* to include the waters beyond the Arctic Archipelago to the 200-nautical-mile Exclusive Economic Zone, which is the case with other Canadian legislation, such as the *Oceans Act* and the *Canada Shipping Act, 2001*.** (See pages 55-59, 67 and 69.)

Recommendation 13:

> **The Committee recommends that Canada develop a long-term plan for the acquisition of new multi-purpose heavy icebreakers made in Canada and capable of operating year-round in its Arctic Archipelago and on the continental shelf as part of an integrated approach to vessel procurement recognizing the complementarity of Coast Guard and naval vessels.** (See pages 49-54, 67-68, and 69.)

Recommendation 14:

> **The Committee recommends the deployment of multi-mission polar icebreakers operated by the Coast Guard as a cost-effective solution to Canada's surveillance and sovereignty patrol needs in the Arctic.** (See pages 52-54, 68 and 69.)

FOREWORD

With its vast and largely untapped natural resources, the region is rapidly growing in strategic and economic importance. Because of climate change and receding sea ice, the circumpolar region is becoming more accessible to commercial shipping, tourism and resource exploration. As a result, Canada faces a number of actual and potential challenges to its sovereignty and sovereign rights in the Arctic.

Canada and Denmark both claim ownership of Hans Island in the eastern Arctic. Canada also has longstanding maritime border delimitation problems with its circumpolar neighbours. As for the continental shelf beyond the 200-nautical-mile Exclusive Economic Zone, the extent to which other Arctic coastal countries will lay national claims to the seabed will be a matter to be determined in accordance with specific rules laid down in the 1982 UN Law of the Sea Convention. However, disputes concerning overlapping claims could arise.

With respect to the Northwest Passage – the water routes that connect the Davis Strait in the east to the Beaufort Sea in the west – a potentially serious challenge to Canadian sovereignty concerns the right to control shipping. Canada's position is that the Northwest Passage is internal waters over which it enjoys full sovereignty. That sovereignty includes the right to unilaterally pass laws and regulations to protect Canadian interests, including those of our northern residents and particularly the Inuit, who have inhabited the lands and lived and worked on the ice in Canada's North for thousands of years. Not all countries agree with Canada's position, however, including the United States, which considers the Passage to be an international strait.

The evidence the Committee heard suggests that other countries will want to use the Northwest Passage to save time and reduce fuel costs. Both the United States and the European Union have outlined their respective priorities and objectives in the Arctic in recent policy documents.

The Arctic is expected to become much busier. No one knows exactly when this will happen, but Canada has been preparing for the eventuality. Recent federal government initiatives include increasing the presence of the Canadian Forces in the North, the construction of ice-strengthened offshore patrol ships and a deep-water Arctic docking facility for the Canadian Navy, and a new polar icebreaker for the Canadian Coast Guard, to name only a few.

As commercial shipping increases, so will the potential for marine pollution. Canada needs to retain full control over its Arctic waters to adequately protect the exceptionally fragile marine environment and Canadian security interests. In this regard, the Government of Canada intends to extend Canada's enforcement zone to 200 nautical miles from the present 100 nautical miles, and to change the status of NORDREG, Canada's vessel traffic system in the Arctic, by making it compulsory rather than voluntary (which the Committee recommended in its June 2008 interim report *The Coast Guard in Canada's Arctic*).

Many of the challenges faced by Canada in the North are related to the vital and considerable work performed by the Canadian Coast Guard. Canada will need to strengthen its Coast Guard, a Special Operating Agency of the Department of Fisheries and Oceans (DFO), by adding capabilities and equipment to cope with future demands. More thought must be given to its future role in projecting Canada's sovereignty in the region. New vessels – heavy icebreakers capable of operating year-round in the Arctic Archipelago and on the extended continental shelf – are needed to safeguard the values and environmental, security and economic interests of Canadians. By asserting more control over the waters within the Arctic Archipelago, Canada will be in a much stronger position to argue that they are internal waters.

While an essential aspect of the *Canadian national identity, the* Arctic is first and foremost the homeland of Inuit who have been using the region and its resources for countless generations. Their presence and continued use and stewardship of its resources anchor Canada's sovereignty claims.

Because Arctic issues cut across a number of federal government departments, an all-of-government approach is essential in developing a strategy for the Canadian North, with the full involvement of the territorial governments and Inuit. Although the Committee found a great deal of optimism in Nunavut about our common future as Canadians, time and time again, Nunavummiut said they wished to be more involved in priority-setting, policy-making and decision-making. Nunavummiut asked to be treated as full partners in developing Canada's integrated strategy for the North.

This report is very much a snapshot in time. Climate change, the environment, sovereignty and security, and economic and social development are matters that will continue to demand the attention of government in the coming years. Both levels of government know the issues and the remedies. The Committee urges that proper action be taken.

The Committee appreciates the great hospitality we experienced in Nunavut. We went to Nunavut to listen. The Committee was impressed by the deep passion shown by participants in our study whose voices need to be heard. We hope our report will aid in that effort.

William Rompkey, P.C., Chair

RISING TO THE ARCTIC CHALLENGE:
REPORT ON THE CANADIAN COAST GUARD

BACKDROP: A CHANGING ARCTIC

A. Receding Ice, Increased Shipping

Climate change is transforming the Arctic. The ice cover is becoming thinner, covering less of the circumpolar Arctic, and receding more quickly than previously believed possible. Canada's Arctic ice shelves – ancient floating sheets of ice attached to land – are rapidly disintegrating.(1)

In 2005, the extent of the ice cover had been the lowest on record. In September 2007, new record low levels of ice were observed, exceeding experts' worse-case predictions. Sea ice in the circumpolar region shrank to 39% below its 1979–2000 mean, the lowest level since satellite monitoring began in 1979 and the lowest for the entire 20th century based on monitoring from ships and aircraft.(2) Significantly for Canada, by the end of the 2007 melt season, the legendary Northwest Passage opened up, becoming fully navigable for the first time in recorded history.

Last year, the Northwest Passage once again became ice-free.(3) By the end of the melt season, the extent of circumpolar ice had decreased to the second-lowest minimum ever. The Arctic's sea ice cover was only 9% greater than the record set in 2007. A more diffuse ice cover and a thinner ice pack suggested a record-low ice volume (ice area multiplied by thickness) at the end of summer.(4)

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(1) Consistent with climate change, two huge pieces broke away from the Ward Hunt Ice Shelf in July 2008. The shelf is the Northern Hemisphere's largest ice shelf, located off the northeast coast of Ellesmere Island approximately 800 km from the North Pole. The first calving (4.5 square km) took place on 22 July to the northwest of Ward Hunt Island. The second took place on 24 July east of Ward Hunt Island (producing two large ice islands 14 and 8 square km in size). In August 2008, the Markham Ice Shelf, located approximately 800 km from the North Pole, completely collapsed. Environment Canada, Canadian Ice Service, http://ice-glaces.ec.gc.ca/App/WsvPageDsp.cfm?ID=204&Lang=eng.

(2) See *Arctic Climate Impact Science – An Update Since ACIA*, Report commissioned by WWF International Arctic Programme, 2008, http://assets.panda.org/downloads/final_climateimpact_22apr08.pdf.

(3) Randy Boswell, "Northwest Passage Northern Route Opens; Canadian Ice Service," *The National Post*, 4 September 2008, p. A9.

(4) US National Snow and Ice Data Center, "2008 Year-in-Review," 7 January 2009, http://nsidc.org/arcticseaicenews/2009/010709.html.

The Arctic Ocean is now expected to become ice-free in summer much earlier than previously estimated,[5] perhaps even by 2015, according to scientific information presented at the Arctic Change 2008 International Conference held in Quebec City in December 2008.[6]

White sea ice reflects sunlight and keeps the polar regions cool, but retreating sea ice exposes darker and less reflective seawater that absorbs heat, causing even more ice to melt – a cycle known as the ice-albedo feedback loop. According to Dr. Scott G. Borgerson of the (US) Council on Foreign Relations, whom the Committee invited to provide a non-governmental American perspective on the geopolitics of a melting Arctic, the tipping point at which sea ice will begin to melt at an exponential rate may already have been reached.[7]

Dr. Louis Fortier, the Scientific Director of ArcticNet – a Network of Centres of Excellence of Canada[8] – further explained to the Committee that reaching the tipping point will result in a new climatic equilibrium in the northern hemisphere and the rest of the planet, which could take thousands of years to reverse.[9] The Committee was shown a series of animated images depicting changes to and the variability of the circumpolar ice cover over time. Earth is losing its "capital of sea ice" in the Arctic, Dr. Fortier asserted, and as "multi-year ice" disappears completely, conditions will become similar to those in the St. Lawrence Seaway in winter.

Hard, thick multi-year ice – perennial ice that has survived at least one summer – presents a serious hazard to shipping, whereas softer, thinner "first-year ice" can be broken by "ice-strengthened" vessels. The effects of the 2007 thaw were seen last year throughout the Arctic, where first-year replaced much of the multi-year ice. The first commercial cargo vessel to traverse the Northwest Passage, the *MV Camilla Desgagnés*, sailed from Montreal to deliver supplies to communities in western Nunavut in the fall of 2008.

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(5) In 2007, scientists were predicting a seasonally *ice-free* Arctic Ocean by as early as 2030. US National Snow and Ice Data Center, "Arctic Sea Ice Shatters All Previous Record Lows," *NSIDC Arctic Sea Ice News & Analysis*, 1 October 2007, http://nsidc.org/news/press/2007_seaiceminimum/20071001_pressrelease.html.

(6) Nearly 1,000 scientists from around the world, indigenous peoples and northern residents attended the Arctic Change 2008 International Conference. "Scientists Predict Seasonal Ice-Free Arctic By 2015," *The Globe and Mail*, 12 December 2008, p. A7.

(7) Dr. Scott G. Borgerson, International Affairs Fellow, (US) Council on Foreign Relations, *Proceedings of the Standing Senate Committee on Fisheries and Oceans* (hereafter, *Committee Proceedings*), 8 April 2008.

(8) For more on Canada's Networks of Centres of Excellence, see http://www.nce.gc.ca/about_e.htm.

(9) Dr. Louis Fortier, Scientific Director, ArcticNet, *Committee Proceedings*, 13 May 2008. Dr. Fortier, a Professor at Université Laval, holds the Canada Research Chair on the Response of Arctic Marine Ecosystems to Climate Change, and has sat on the Natural Sciences and Engineering Research Council of Canada since 2005.

Judging from what the Committee heard, it is no longer a matter of if, but when, the Arctic Ocean and the Canadian Arctic Archipelago will open to regular shipping. This prospect has huge implications.

Navigation shortcuts are expected over Eurasia (the Northern Sea Route, once called the Northeast Passage) and North America (the Northwest Passage), reducing oceanic travel by days and thousands of kilometres. As a navigation route, the Northwest Passage would offer international shipping companies significant savings in time and cost; the distance from Shanghai to New Jersey, for instance, would be 7,000 kilometres shorter than a similar voyage through the Panama Canal. If the circumpolar sea ice recedes sufficiently, a marine route could be created directly over the North Pole. Both the Northwest Passage and the Northern Sea Route were free of ice simultaneously in 2008 – the first time on record this had happened.

The further diminishment of ice and a longer summer shipping season are expected to benefit tourism and the energy and mining sectors,[10] leading to economic development and even more shipping. The Arctic will become much busier, Dr. Rob Huebert of the University of Calgary warned, and "it will catch us off guard."[11] Although no one knows for sure what will happen in the years ahead, Dr. Michael Byers, Canada Research Chair in International Law and Politics at the University of British Columbia, advised the Committee that government cannot wait for certainty before responding to this phenomenon. In his view, government needs to move quickly to prepare for the eventualities.[12]

In 2007, a ship loaded with fertilizer from northwestern Russia arrived in Churchill, the first time the northern Manitoba port had received goods from Russia by sea. Inuit Circumpolar Council (Canada) president Duane Smith mentioned in his testimony that Canada and Russia had been looking at the possibility of keeping the port of Churchill open throughout the year, and that Russia had volunteered the use of icebreakers to create a shipping link between Churchill and the Russian port of Murmansk, the northernmost ice-free port in the world.[13]

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(10) Mike Vaydik, General Manager, NWT and Nunavut Chamber of Mines, *Proceedings of the Standing Senate Committee on Energy, the Environment and Natural Resources*, 8 May 2008.

(11) Dr. Rob Huebert, Associate Professor, Department of Political Science, University of Calgary, *Committee Proceedings*, 13 March 2008.

(12) Dr. Michael Byers, Canada Research Chair in International Law and Politics, University of British Columbia, *Committee Proceedings*, 6 March 2008.

(13) Duane Smith, President, Inuit Circumpolar Council (Canada), *Committee Proceedings*, 1 April 2008. The Inuit Circumpolar Council (ICC) is an international non-governmental organization representing approximately 150,000 Inuit living in Alaska, Canada, Greenland and Russia. The ICC is a Permanent Participant in the Arctic Council, an intergovernmental forum established in 1996. Although having a good record of cooperation, the Council is not based on an international treaty. Member states are Canada, Denmark/Greenland/Faroe Islands, Finland, Iceland, Norway, the Russian Federation, Sweden, and the United States. See Arctic Council, http://arctic-council.org/article/about.

Some witnesses advised that Canada should be thinking in terms of an Arctic Gateway project similar to the Asia-Pacific Gateway and Corridor being built in Western Canada. Hal Timar, Executive Director of the Baffin Regional Chamber of Commerce, believed that the government needs to officially recognize that a new gateway is being created, and to define the role that Inuit and the private sector will play in its management.(14)

Inuit will be most directly affected by increased marine activity, which is likely to have far-reaching consequences for their culture, well-being and traditional way of life. The prospect of the Northwest Passage opening up for navigation by oil tankers and other commercial vessels is a major concern in the Arctic, where the ecosystems are exceptionally sensitive and fragile. The waters of Lancaster Sound – the eastern entrance of the Passage – are reputed to be one of the Arctic's most biologically productive and diverse marine regions, providing habitat for polar bears, whales, seals, walrus, fish and tens of thousands of seabirds of various species. Regular ship traffic might also break sea ice that hunters cross to reach game.

The Committee learned that the Inuit Circumpolar Council has submitted an Inuit perspective to the Arctic Council, which has been preparing a comprehensive Arctic Marine Shipping Assessment on likely scenarios for 2020 and 2050.(15) The Assessment is expected to lead to:

- a greater understanding of Aboriginal Arctic marine resource use;
- a greater understanding of the social, economic and environmental impacts from changing shipping patterns on northern and aboriginal communities;
- an improved understanding of the adequacy of existing requirements and the need for additional rules for protecting the Arctic marine environment from ship activity.(16)

B. Local Impacts of Climate Change

The effects of climate change in the Arctic are expected to be among the greatest of any region on Earth. Because of the Inuit's dependence on the region's sensitive and vulnerable environment, climate change will have a major impact on their survival as indigenous people. The phenomenon is already having real and serious consequences at the local level.

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(14) Hal Timar, Executive Director, Baffin Regional Chamber of Commerce, *Committee Proceedings*, 2 June 2008.

(15) Duane Smith, *Committee Proceedings*, 1 April 2008.

(16) Transport Canada, "Health of the Oceans Initiatives at Transport Canada," Backgrounder, October 2007, http://www.tc.gc.ca/mediaroom/releases/nat/2007/07-H185e.htm#bg. The AMSA will be released at the April 2009 Arctic Council Ministerial Meeting in Tromso, Norway.

The permafrost (or permanently frozen soil) is melting throughout the Arctic, creating much infrastructure instability.[17] In the western Arctic, which has experienced the greatest temperature increases within the Canadian North, rising sea levels and tides caused by melting ice have brought on the serious problem of coastal erosion. Members of the Standing Senate Committee on Energy, the Environment and Natural Resources heard a great deal about climate change during their visit to the western Arctic (Yukon and the Northwest Territories) on 1–5 June 2008.

In the eastern Arctic, participants at our meetings in Nunavut said they had observed drastic changes in climate in recent years, including earlier springs and ice break-ups, later autumns and freeze-ups, and variable and unpredictable weather. A recurring theme was that Inuit are no longer able to rely upon the sea ice as they once did. Sea ice, which provides a transportation and hunting platform for several months of the year, was said to be thinner and less predictable than in the past.

Glaciers are receding, especially those in the northern regions. Ice caps on the northern plateau of Baffin Island were reported to the Committee as having shrunk by more than 50% in the last half-century, and are expected to disappear completely by the middle of this century.[18]

Some participants at our meetings, such as Eric Joamie of Pangnirtung, were worried that climate change might result in the setting of quotas for species not currently regulated in this manner, thus limiting Inuit access to resources that the various land claims settlements in the North were intended to uphold.

> Looking at the climate change today and what we have been hearing from all over, of course there will be an impact, especially on the hunters. Hunters will see a huge impact. That includes their hunting ways, our change of food. … If [the government] start[s] imposing quotas on whales and ring seals it will become extremely difficult. What we [will] see when they start imposing quotas is that pretty soon we will not be allowed to hunt them.

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(17) The findings of a recent study by the US National Center for Atmospheric Research and the US National Snow and Ice Data Center suggest that during extended episodes of rapid sea ice loss, the rate of climate warming over northern Alaska, Canada, and Russia could more than triple. US National Snow and Ice Data Center, "Permafrost Threatened by Rapid Retreat of Arctic Sea Ice, NCAR/NSIDC Study Finds," Media advisory, 10 June 2008, http://nsidc.org/news/press/20080610_Slater.html.

(18) Adamie Komoartok, Deputy Mayor, Municipality of Pangnirtung, *Committee Proceedings*, 5 June 2008.

Inuit were very critical of the US Department of the Interior's announcement in May 2008 that the polar bear would be designated as threatened under the US *Endangered Species Act*. The decision, which was based on predictions of how the polar bear population will be affected by receding sea ice in 45 years, was expected to have negative economic consequences for hunting guides, tourism and communities, given that American sport hunters would no longer be able to return home with bear trophy hides. Inuit said that they had responsibly managed the polar bear population in Nunavut,[19] that the decision disregarded Inuit Qaujimajatuqangit (IQ – Inuit traditional knowledge), and that Inuit elders had observed an overall increase in the polar bear population. The Committee was told that there were too many polar bears, and that the species would be able to adapt to changes in the environment.

Hunting continues to supply the principal elements of the Inuit diet throughout Nunavut. A major worry amongst Inuit was the long-term impacts that climate change might have on the availability of traditional country foods, especially in remote communities where diets are more dependent on the environment than on expensive store-bought food. The changing climate and environment are also making it more difficult to pass traditional knowledge and skills down to young people.

A major concern is the effects of climate change on marine life, especially whales, which provide Inuit with important health, economic and cultural benefits. Not much is known about future impacts on marine mammals – their geographic ranges, migration patterns, reproductive success, and ultimately their abundance.[20]

The productivity of northern waters change will be affected. Each type of fishery – subsistence, commercial and recreational – will be affected differently, depending on whether it takes place in marine (salt) waters or in freshwater.[21] Some species of fish, such as Arctic char,

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(19) In Canada, the polar bear has been a species "of special concern" since 1991 (i.e., a "wildlife species that may become a threatened or endangered species because of a combination of biological characteristics and identified threats"). In August 2008, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) recommended that the federal government retain the "special concern" designation, which expresses less worry about the state of a species than the "threatened" or "endangered" designations. A national roundtable of stakeholders was held in Winnipeg on 16 January 2009. Environment Canada, "Minister Prentice Highlights Progress Made at Polar Bear Roundtable," News release, 16 January 2009, http://www.ec.gc.ca/default.asp?lang=En&n=714D9AAE-1&news=24AABBD9-00C3-4E80-9517-2D37013C5FAF.

(20) Marine mammals (e.g., ringed seal, walrus, beluga and narwhal) are likely to be vulnerable to the effects of reduced sea ice. Other marine mammals (e.g., harbour seals and grey seals) may migrate northward. See Indian and Northern Affairs Canada, "From Impacts to Adaptation," http://www.ainc-inac.gc.ca/enr/clc/ adp/ia/nnv-eng.asp.

(21) In October 2007, the minister of Fisheries and Oceans announced six additional positions dedicated to Arctic fisheries stock assessment for fish and marine mammals. Michelle Wheatley, DFO, Regional Director, Science, Central and Arctic Region, *Committee Proceedings*, 1 May 2008.

could decline, while others could proliferate or migrate. Southern fish populations could move into northern waters because of warmer ocean temperatures. Climate change may already be extending the northward range of Pacific salmon.[22]

The Committee learned from witnesses in Nunavut that changing ice conditions had affected the commercial turbot fishery off northeastern Baffin Island (in Northwest Atlantic Fisheries Organization [NAFO] Division 0A), where fishing now begins earlier in the year than previously, and takes place over a longer period. Vessels are also able to operate in more northerly areas.[23]

Further south (in Division 0B), where a small winter (under-the-ice) inshore turbot fishery first began in Cumberland Sound in the mid-1980s, changing sea ice conditions were reported to have had the opposite effect. Earlier ice break-ups have shortened the length of the fishing season. In Pangnirtung, witnesses spoke about the decline of their local fishery, which they described to the Committee as having been very much a community activity involving 100–150 community members at one time.[24] But because of the high variability in ice conditions and thinner sea ice, fewer people now participate in the fishery, thus reducing the supply of turbot delivered to the local fish plant in winter for processing.[25]

C. Adaptation

Northern Canadians are among the people who will be most affected by climate change, and they will need to develop the capacity to adapt to its expected impacts. Adaptation recognizes that impacts of climate change are inevitable (as opposed to mitigation, such as adopting measures to reduce greenhouse gas emissions). The goal is to minimize the adverse impacts and maximize benefits.[26]

Smaller communities tend to be more vulnerable to the effects of climate change. More than two-thirds of the population in Nunavut live in communities of less than 1,000 people.[27]

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(22) Duane Smith, *Committee Proceedings*, 1 April 2008.

(23) Wayne Lynch, Director, Fisheries and Sealing, Nunavut Environment Department, *Committee Proceedings*, 2 June 2008.

(24) Adamie Komoartok, *Committee Proceedings*, 5 June 2008.

(25) Don Cunningham, General Manager, Pangnirtung Fisheries Ltd., *Committee Proceedings*, 5 June 2008.

(26) See Natural Resources Canada, *From Impacts to Adaptation: Canada in a Changing Climate 2007*, 2008, Chapter 3, Northern Canada, "Implications for Economic Development and Adaptation Within Key Sectors," http://adaptation.nrcan.gc.ca/assess/2007/index_e.php. Released in March 2008, the report assesses current and future risks and opportunities relating to climate change through a regional approach. Adaptation initiatives are highlighted in the report.

(27) Indian and Northern Affairs Canada, "From Impacts to Adaptation."

In Nunavut, the Committee learned that Indian and Northern Affairs Canada administers $14 million to assist northerners to assess the vulnerabilities and opportunities that climate change presents.[28] The Honourable Olayuk Akesuk, Nunavut's former Minister of the Environment, indicated in his testimony that the Nunavut government is pursuing a Nunavut Adaptation Program, a two-part initiative consisting of a Climate Change Adaptation Plan and community-based planning. Pilot projects were initiated in Iqaluit, Clyde River and Hall Beach in 2007, to assess the impact of global warming on water flow, coastal erosion, vegetation, and terrain stability; similar studies are planned for other Nunavut communities in the coming years.[29]

Nunavut's Environment Minister advised the Committee that the territory's small communities are not well equipped to deal with climate change. Adamie Komoartok, Deputy Mayor of Pangnirtung, stated that Inuit have a well-earned reputation for being adaptable, but added that this "has its limits." Dr. Louis Fortier of ArcticNet emphasized that Inuit had in the past demonstrated an ability to adapt, but they required the means to do so in future. Ron Mongeau, Pangnirtung's senior administrative officer, highlighted the need to assist communities financially in adapting to climate change, which he said will vary from one region to the next, and from community to community.[30]

> What concerns us is these changes are happening now. They have been happening for many years, and they have been accelerating, and unless we can develop the capacity here to address those problems, we will have more and more difficulties down the road. We need government help, from both the federal and the territorial level, to develop the capacity of individual communities in Nunavut to address these changes.

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(28) In December 2007, the federal government budgeted $85.9 million (until 31 March 2011) to help Canadians increase their capacity to adapt. Environment Canada, "Canada's Government Taking Action on Adaptation and Climate Change Issues," http://www.ec.gc.ca/default.asp?lang=En&xml=91E1F38E-C53C-404B-9512-22EA69C08787.

(29) Climate change adaptation workshops were also held in Iqaluit, Rankin Inlet and Cambridge Bay to increase understanding of the impact of climate change in each of Nunavut's three region (Kivalliq, Kitikmeot and Qikiqtaaluk).

(30) The urgency of the situation was reinforced a few days after the Committee held its public hearing in Pangnirtung, when the community lost two bridges and access to its municipal facilities due to a flash flood and erosion. At the end of July, visitors at nearby Auyuittuq National Park were evacuated because of meltwater and the high risk of flash flooding. (Ironically, Auyuittuq in Inuktitut means "land that never melts.")

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The Arctic has become the focus of considerable scientific research with respect to adaptation. A major Canadian research initiative in this regard includes ArcticNet,(32) which was frequently mentioned at our meetings.

ArcticNet has as a central objective "the development and dissemination of the knowledge needed to formulate adaptation strategies and national policies to help Canadians face the impacts and opportunities of climate change and globalization in the Arctic." A major goal is "to engage Inuit organizations, northern communities, universities, research institutes, industry as well as government and international agencies as partners in the scientific process and the steering of the Network."(33) To that end, Inuit are involved at all levels in the Network.(34) "Integrated Regional Impact Studies" are conducted on societies and on marine and terrestrial coastal ecosystems.(35) In addition to work undertaken in communities, ArcticNet researchers from various fields use the Canadian Coast Guard (CCG) research icebreaker *CCGS Amundsen*.

Under Canada's International Polar Year (IPY) program, climate change impacts and adaptation, and the health and well-being of northern Canadians, were key priority areas for science and research. The IPY was a two-year project that began in 2007 and ran until 31 March 2009.(36) Canada was the first country to announce funding for IPY activities

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(31) Ironically, Auyuittuq in Inuktitut means "land that never melts."

(32) ArcticNet brings together over 110 scientists and managers from 27 Canadian universities and five federal departments in the natural, human health and social sciences and partners them with Inuit organizations, northern communities, federal and provincial agencies, and the private sector. More than 450 graduate students are being trained as a result.

(33) See ArcticNet, "Rationale," at: http://www.arcticnet.ulaval.ca/index.php?fa=ArcticNet.aboutUs.

(34) Duane Smith, *Committee Proceedings*, 1 April 2008.

(35) Geographically, the network restricts its research activities to the coastal Canadian Arctic and sub-Arctic regions.

(36) Previous IPYs were in 1882–1883, 1932–1933, and 1957–1958. The 2007–2009 IPY was the first initiative of its kind in 50 years, and the largest international program of scientific research focused on the Arctic and Antarctic regions ever undertaken. It involved the participation of a large number of scientists and researchers from more than 60 countries. The IPY was coordinated internationally by the International Council of Science and the World Meteorological Organization. For further information, see http://www.ipy.org/. The Government of Canada's IPY website can be accessed at: http://www.ipy-api.ca/english.

($150 million over six years); a total of 44 Canadian science and research projects were selected.[37] IPY differed from other federal programs in that, for the first time, funding was made available to both university and government scientists. The Committee was pleased to hear that Aboriginal people and northerners played a very significant role in their planning, coordination and implementation.[38]

As a result of IPY-related research, the work undertaken by Natural Resources Canada's Polar Continental Shelf Project (PSCP) took on greater significance. In June 2008, the Committee visited the facilities of the PCSP facilities in Resolute Bay, on the south coast of Cornwallis Island. The PCSP, which celebrated its 50th anniversary in 2008, is a source of equipment, supplies and expert advice for a wide range of land-based field research projects. Each year from March to September, vital ground and air support in the Arctic is provided to as many as 130 different scientific groups from more than 40 Canadian and international universities, and from government agencies.[39] Although requests for PCSP assistance have increased substantially in recent years, Committee members learned that there had not been a corresponding increase in funding.

D. Geopolitical Developments

With its vast and largely untapped natural resources, the Arctic is growing in strategic and economic importance.

Coastal states that border the Arctic Ocean (Canada, Denmark, Norway, the Russian Federation, and the United States) are currently mapping the ocean floor as prescribed by the United Nations Convention on the Law of the Sea (the LOS Convention). Their objective is to determine how much of the sea floor is an extension of each coastal nation's continental

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(37) In terms of resources, the Circumpolar Flaw Lead (CFL) System Study was Canada's largest project, with 10 teams involved. The CFL included project team leaders from the University of Manitoba, Université Laval, the Université du Québec, the ICC, and the Department of Fisheries and Oceans (DFO). The federal government budgeted $20.5 million from its IPY program, including $6 million in research funding and $14.5 million in logistical ship support. Studying the flaw lead – an area of ice-free water that opens up each year when central pack ice moves away from coastal ice, creating a "flaw" in the ice surface – provides a better understanding of meteorological effects on Arctic ecosystems. The CFL website can be accessed at: http://www.umanitoba.ca/ceos/.

(38) Wendy Watson-Wright, Assistant Deputy Minister, Science, DFO, *Committee Proceedings*, 6 December 2007. DFO was the lead department on six IPY projects, and also participated in marine-based IPY projects led by other organizations.

(39) Natural Resources Canada, "Polar Continental Shelf Project: What We Do," http://polar.nrcan.gc.ca/about/index_e.php. Support is also provided to private-sector and non-Canadian researchers, but on a full cost-recovery basis.

shelf, with a view to claiming the maximum amount of the seabed allowable beyond their 200-nautical-mile Exclusive Economic Zone (EEZ).[40]

Enormous hydrocarbon resources are suspected below the Arctic Ocean's surface. In July 2008, the US Geological Survey estimated that the area north of the Arctic Circle accounts for about 13% of the world's undiscovered oil, 30% of its undiscovered natural gas, and 20% of undiscovered natural gas liquids. Approximately 84% of these estimated resources are thought to lie in offshore areas, and natural gas is expected to be three times more abundant than oil.[41] Last year, the Committee was informed that the Arctic Council has been conducting its own circumpolar scientific oil and gas assessment. Its objectives are: to identify oil and gas reserves in the circumpolar Arctic; to assess the environmental, social, economic, and human health consequences of current oil and gas activity in the circumpolar Arctic; and to evaluate the likely course of development and its future impact.[42]

Russia's assertiveness and its capacity to operate in the Arctic were frequently raised in testimony. Along the coast of Siberia, where Arctic sea ice is melting faster and ice conditions are more favourable, Russia has been developing the offshore sector and investing in the port of Murmansk, as well as other Arctic ports, to develop its very considerable hydrocarbon resources.[43] Centralized control over northern oil and gas resources has helped the country to rebuild its military, including the construction of submarines, so that a resumption of submarine traffic could be expected in the coming years similar to that which took place during the Cold War. Russia has stepped up its military presence in the region.[44]

According to Dr. Rob Huebert, a renowned authority on Arctic matters, the reduction of sea ice will encourage increased commercial navigation; but oil and gas exploration in the Arctic will continue to accelerate regardless of climate change. The reasons given were historic high energy prices, the entry of China as a major oil consumer on a level equal to the developed world, and the expectation that India will also become a major consumer.

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(40) The United States, which has yet to ratify the LOS Convention, has nonetheless been conducting scientific work in the Arctic to collect evidence for a possible future claim. Procedural rules of the US Senate were said to have been preventing ratification of the Convention. Dr. Scott G. Borgerson, *Committee Proceedings*, 8 April 2008.

(41) US Geological Survey, "90 Billion Barrels of Oil and 1,670 Trillion Cubic Feet of Natural Gas Assessed in the Arctic," News release, 23 July 2008, http://www.usgs.gov/newsroom/article.asp?ID=1980.

(42) Duane Smith, *Committee Proceedings*, 1 April 2008.

(43) Dr. Rob Huebert, *Committee Proceedings*, 13 March 2008.

(44) For instance, Russia announced on 14 July 2008 that it was sending naval ships to patrol Arctic waters for the first time since the breakup of the Soviet Union. Jesper Hansen, "Russian Naval Ships to the Arctic Sea," http://arctic-council.org/article/2008/7/russian_naval_ships_to_the_arctic_sea.

The Committee learned that South Korean shipyards, driven by oil and gas markets, are constructing new ice-strengthened and "double-bowed" oil tankers that can operate efficiently both in open water and in ice cover up to one metre thick. When travelling through open water, the vessels proceed forward as they normally would; when in ice, they operate stern-first (the propellers can be turned around) and act as icebreakers. The Russians are purchasing these state-of-the-art dual-purpose vessels to transport oil from Siberia to Murmansk for reloading onto larger tankers for export to the European market. The goal, Dr. Huebert explained to the Committee, is to eliminate the need for pipeline systems, which have been collapsing partly because of poor Soviet construction techniques, but also because of the melting permafrost.

The Northern Sea Route is expected to open to international shipping sooner than the Northwest Passage because the ice pack tends to shift toward North America.(45) Dr. Donat Pharand, Professor of Law Emeritus of the University of Ottawa, informed the Committee that Russia has fully prepared itself for international navigation.(46) Three years ago, with the cooperation of Japan and Norway, Russia concluded a six-year study (paid for mainly by Japan, under the aegis of the Nansen Institute in Norway) covering all possible aspects of the future use of the Northern Sea Route. Russia, it was pointed out, has the infrastructure in place and the capacity to control future navigation, including nuclear-powered icebreakers.

Other countries have shown unprecedented interest in the Arctic.

For instance, China (despite its lack of Arctic waters) has been undertaking vigorous research in the polar regions. China operates the icebreaker *Xue Long* (or Snow Dragon), a 21,000-tonne research vessel built in the Ukraine and retrofitted to state-of-the-art scientific capabilities. Considered to be on par with any icebreaker of any developed country, the vessel is employed primarily for China's research station in the Antarctic. Chinese researchers were in the region of Tuktoyaktuk in 1999 and in 2003.(47) As part of International Polar Year, a third Chinese scientific expedition carrying some 120 scientists and logistics staff arrived in the Canada Basin of the Beaufort Sea in August 2008.

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(45) Natural Resources Canada, *From Impacts to Adaptation: Canada in a Changing Climate 2007*, Chapter 3, Northern Canada, "Case Study 2: The Future of the Northwest Passage," p. 84.

(46) Dr. Donat Pharand, Professor of Law Emeritus of the University of Ottawa, *Committee Proceedings*, 6 May 2008.

(47) Dr. Rob Huebert, *Committee Proceedings*, 13 March 2008.

Scientific work by other countries has been especially significant in view of the wide-ranging research being conducted in conjunction with International Polar Year, as discussed above.

When the present Norwegian government took office in 2005, it declared the High North a top national priority and produced, in December 2006, a comprehensive High North Strategy involving most government ministries.(48)

Europe views the opening up of new trade routes and increased accessibility of the region's hydrocarbon resources as having potential consequences for international stability and its own security interests.

In a report prepared for the March 2008 European Union summit, the High Representative for the Common Foreign and Security Policy and the European Commission for External Relations identified the need to "address the growing debate over territorial claims and access to new trade routes by different countries which challenge Europe's ability to effectively secure its trade and resource interests in the region and may put pressure on its relations with key partners." Climate change was said to be "best viewed as a threat multiplier which exacerbates existing trends, tensions and instability."(49)

In November 2008, the European Commission adopted a Communication on *The European Union and the Arctic Region*, which sets out "EU interests and policy objectives" in the region and "proposes a systematic and coordinated response to rapidly emerging challenges."(50) Among other things, the Commission emphasized that the EU should "not support arrangements which exclude any of the Arctic EU Member States or Arctic EEA [European Economic Area] EFTA [European Free Trade Association] countries,"(51) and indicated that it would apply for permanent observer status in the Arctic Council. None of the

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(48) Jonas Gahr Støre, "Norway, Canada: Natural Partners in the North," *Embassy*, 6 November 2008, http://www.embassymag.ca/page/view/norway-11-6-2008. See Government of Norway, Ministry of Foreign Affairs, *The Government's High North Strategy*, 2006, http://www.regjeringen.no/en/dep/ud/Documents/Reports-programmes-of-action-and-plans/Action-plans-and-programmes/2006/strategy-for-the-high-north.html?id=448697.

(49) "Climate Change and International Security," Paper from the High Representative and the European Commission to the European Council, 14 March 2008, http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/reports/99387.pdf.

(50) European Commission, "The Arctic Merits the European Union's Attention – First Step Towards an EU Arctic Policy," Press release, 20 November 2008, http://ec.europa.eu/maritimeaffairs/press/press_rel201108_en.html.

(51) European Commission, **"**Communication on *The European Union and the Arctic Region*,**"** November 2008, http://ec.europa.eu/maritimeaffairs/press/press_rel201108_en.html.

EU Member States has an Arctic coastline; Greenland, though closely related to Denmark, is not an EU Member State.[52]

Noting that **"**there are different interpretations of the conditions for passage of ships in some Arctic waters, especially in the Northwest Passage," the European Commission recommended that EU "Member States and the Community should defend the principle of freedom of navigation and the right of innocent passage in the newly opened routes and areas."

The United States, for its part, articulated its own objectives in the Arctic in a National Security Presidential Directive signed on 9 January 2009 – the first such document since 1994. The strategic policy framework states that the United States "has broad and fundamental national security interests in the Arctic region and is prepared to operate either independently or in conjunction with other states to safeguard these interests."[53] "A more active and influential national presence" will therefore be asserted "to protect [US] Arctic interests and to project sea power throughout the region." In brief, the 10-page document:

- identifies "freedom of the seas [as] a top national priority," and contends that the Northwest Passage "is a strait used for international navigation" where a "regime of transit passage applies";

- refers to a need to "develop greater capabilities and capacity, as necessary, to protect United States air, land, and sea borders in the Arctic region";

- expresses support for the Arctic Council, which "should remain a high-level forum devoted to issues within its current mandate," but which should "not be transformed into a formal international organization, particularly one with assessed contributions";

- rejects the notion of an "'Arctic Treaty' of broad scope" "along the lines of the Antarctic Treaty" because "the geopolitical circumstances of the Arctic region differ sufficiently from those of the Antarctic region";

- calls for more "scientific monitoring and research into local, regional, and global environmental issues";

- supports the US ratification of the LOS Convention "to protect and advance U.S. interests, including with respect to the Arctic";

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(52) There are eight countries with land above the Arctic Circle: Canada, the United States, Denmark (through Greenland), Norway, Russia, Iceland, Finland, and Sweden. The latter three have no direct coastlines on the Arctic Ocean. Denmark, Finland and Sweden are EU member states. Iceland and Norway are members of the EEA.

(53) These interests included "such matters as missile defense and early warning; deployment of sea and air systems for strategic sealift, strategic deterrence, maritime presence, and maritime security operations; and ensuring freedom of navigation and overflight."

- highlights the boundary dispute between the United States and Canada in the Beaufort Sea;
- talks about developing measures in cooperation with other countries "to address issues that are likely to arise from expected increases in shipping into, out of, and through the Arctic region"; and
- recognizes that "appropriate resources and assets" will be required to implement the elements of the directive.(54)

MAIN ISSUES AND THEMES

A. Sovereignty-related Matters

Strengthening and demonstrating Canada's sovereignty in the North was a major theme of the Speech from the Throne of 16 October 2007 and is one of the four priorities of the Northern Strategy led by Indian and Northern Affairs Canada. Initiatives in support of the Strategy were announced in the 26 February 2008 Budget. "Strengthening our sovereignty and security at home and bolster our ability to defend our values and interests abroad" is also the goal of the "Canada First Defence Strategy" unveiled on 12 May 2008.

The term "sovereignty" is often used in connection with the Arctic. At the outset of his presentation, Dr. Donat Pharand, an eminent authority on international and maritime law, made a point of mentioning the immense confusion surrounding this term. As generally understood in international law, sovereignty may be defined as "the totality of the various forms of exclusive jurisdiction which a state may exercise within its boundaries." In international law, sovereignty applies mainly to land, but it may also apply to certain waters or sea areas known as "internal waters."(55)

Canada faces a number of actual and potential challenges to sovereignty and its sovereign rights in the Arctic.

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(54) President George W. Bush, The White House, National Security Presidential Directive (NSPD – 66) and Homeland Security Presidential Directive (HSPD – 25), 12 January 2009.

(55) Dr. Donat Pharand, *Committee Proceedings*, 6 May 2008.

1. Land

With respect to land, Canada and Denmark both claim ownership of Hans Island – a tiny, uninhabited rocky island located in the Kennedy Channel of Nares Strait, which separates Ellesmere Island from northern Greenland. The dispute, which witnesses categorized as relatively minor, received a great deal of publicity in Canada when former National Defence Minister Bill Graham went there in 2005 to reassert Canadian sovereignty. This was in response to Denmark having sent naval vessels in 2002 and 2003. Interestingly, Dr. Rob Huebert noted that when the Danish naval vessel *Vaedderen* went to Hans Island in 2002 to challenge Canada's sovereignty, the Danes had purchased Canadian satellite imagery to help guide the vessel there.

With the exception of the Hans Island dispute, however, there are no challenges to Canada's ownership of and sovereignty over its Arctic lands.

2. The Continental Shelf

At sea, the 1982 UN LOS Convention (often referred to as "the Constitution of the Oceans"), which Canada ratified in 2003, sets out a legal classification system for ocean space and establishes the limits of the various maritime zones (the 12-mile territorial sea, the 200-mile EEZ, and the outer edge of the continental margin).

With respect to the continental shelf, coastal states do not have "sovereignty" in the full sense of the word. Article 77 of the LOS Convention stipulates that coastal states exercise "sovereign rights" over the continental shelf for the purpose of exploration and exploitation of the natural resources there – both living resources (sedentary species) and non-living resources located on or beneath the ocean floor of the shelf (e.g., oil and gas).

Although no government disputes these sovereign rights, Canada, like other states, has "delimitation problems" with its neighbours.(56)

With respect to the Lincoln Sea, Canada and Denmark disagree on the precise positioning of certain straight baselines to arrive at a common border based on equidistance. Two relatively small areas are in dispute, each slightly more than 30 square nautical miles.(57)

As for the Beaufort Sea, there is also a longstanding disagreement between Canada and the United States over the maritime border between the Yukon and Alaska. Canada's position is that the border should follow the land boundary along the 141st meridian.

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(56) Dr. Donat Pharand, Brief submitted to the Committee, 6 May 2008.

(57) Ibid.

The United States maintains that the border should extend along a path equidistant from the coasts of the two countries. A complicating factor raised in testimony is the constitutionally protected 1984 Inuvialuit Final Agreement, which is based on Canada's understanding of the maritime boundary. The disagreement between Canada and the United States could become more significant if petroleum resources are discovered in the contested area.

Record-high oil prices renewed industry interest in the Beaufort Sea. In the United States, Royal Dutch Shell was awarded leases off Alaska's northern coast in 2005.(58)

With regard to Canada's side of the border, the Committee learned from witnesses that Imperial Oil Ltd. and Exxon Mobil Canada had acquired an exploration licence from the federal government in 2007. Under the terms of the licence (covering an area of 205,000 hectares of Arctic sea floor about 100 kilometres north of the Mackenzie Delta in the Northwest Territories), the two companies agreed to spend $585 million on exploration.

Also on Canada's side of the border, in June 2008, BP Exploration Company Ltd. won three of five exploration leases in the Beaufort Sea (covering an area of approximately 611,000 hectares). The company's largest bid was $1.18 billion for a 202,380-hectare parcel. Of the two other leases, one was awarded to ConocoPhillips Canada Resources Corp ($2.5 million for 196,497 hectares), and the other to MGM Energy Corp., ConocoPhillips Canada Resources Corp., Phillips Petroleum Canada Ltd., and Phillips Petroleum Resources Ltd. ($1.8 million for a 41,323-hectare parcel).(59)

3. The Outer Limits of the Shelf

Canada is in the process of confirming its sovereign rights in the Arctic by defining the outer limits of Canada's continental shelf. Seabed mapping will make certain, at least from a scientific standpoint, the full extent of the area over which Canada has sovereign rights for the purpose of exploring and exploiting the natural resources of the seabed and subsoil beyond its 200-nautical-mile EEZ.

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(58) The company had planned a multi-year exploration drilling program. However, operations were put on hold pending the outcome of an appeal by environmental organizations and the Alaska Eskimo Whaling Commission. On 20 November 2008, the 9th Circuit Court of Appeals ruled that federal regulators had improperly granted permission to drill in the Beaufort Sea and ordered the (US) Minerals Management Service to reconsider how exploratory drilling would affect wildlife and indigenous communities on Alaska's North Slope. In February 2008, the company invested approximately $2.1 billion for oil and gas leases in the Chukchi Sea (west of the Beaufort Sea). Royal Dutch Shell, "Shell Expands Alaska Exploration Portfolio," Press release, 7 February 2008, p. 1.

(59) Indian and Northern Affairs Canada, "Beaufort Sea and Mackenzie Delta," http://www.ainc-inac.gc.ca/nth/og/rm/ri/bsm/index-eng.asp#chp3.

A coastal state can claim control of the seabed beyond its EEZ if it can prove the ocean floor is a physical extension of its continental shelf. The LOS Convention provides a formula for determining the outer limit based on the geological characteristics of the sea floor (Article 76)[60] and establishes a procedure whereby a coastal state can have the exact limits of its extended shelf confirmed internationally. A coastal state has 10 years from the date of its ratification of the Convention to submit the particulars of its intended limits to the UN Commission on the Limits of the Continental Shelf (CLCS), along with scientific and technical evidence in support of its submission.

Canada's ratification of the LOS Convention came into force on 7 December 2003; thus the deadline for Canada's submission is 7 December 2013. The Committee learned that the federal government had allocated $70 million to the mapping of the seabed shelf on Canada's Atlantic and Arctic sea coasts in 2004, and that an additional $20 million was made available in the 26 February 2008 Budget (over the next two years). Officials of the Department of Foreign Affairs and International Trade (DFAIT) who appeared before the Committee in February 2008 were confident that the work would be completed by the 2013 deadline.

On 14 May 2008, a further $20 million (over four years) was announced for seabed mapping and related work. The extent of the continental shelf beyond the 200 nautical miles (370 kilometres) could potentially add up to 1.75 million square kilometres, an area about the size of the Prairie provinces.[61]

The role of the CLCS, a body of 21 experts from state parties to the Convention, is to alert countries to exaggerated submissions or overlaps and to help legitimize reasonable claims. In considering submissions, the CLCS does not make a determination, final or otherwise, other than to say that a country's submission seems reasonable from a scientific standpoint. If national claims overlap, the countries themselves must then negotiate mutually satisfactory agreements, or take their disputes to arbitration.[62]

Alan Kessel, Legal Adviser to DFAIT, noted in his presentation to the Committee that Canada had been collaborating with other countries on mapping. This, he said, not only makes good economic and scientific sense, but will also help avoid the potential overlapping of

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(60) Article 76 provides for two ways to measure the maximum length of the extended continental shelf: 350 miles from the baseline, or 100 miles beyond the 2,500-metre isobath (i.e., the line demarcating where the depth of the ocean is 2,500 metres). See DFAIT, "Canada's Program," http://www.international.gc.ca/continental/program-canada-programme.aspx?lang=eng&menu_id=21&menu=R.

(61) Natural Resources Canada, "Government of Canada Takes Important Steps to Advance Canada's Northern Strategy," News release, 14 May 2008, http://www.ainc-inac.gc.ca/ai/mr/nr/m-a2008/2-3033-eng.asp.

(62) Alan H. Kessel, Legal Adviser, DFAIT, *Committee Proceedings*, 12 February 2008.

national claims and reduce the need for future arbitration. Mr. Kessel also emphasized that the Article 76 process had been incorrectly portrayed in the media as an adversarial scramble for natural resources.

> [T]his is not a race. Therefore, there is not a beginning and an end – except that when you sign on, you have 10 years to make your submission. Those who signed on earlier make their submission earlier. Since you cannot get more than you are entitled to, whether you do it now or then does not really matter. … I will reiterate; this is not a race. We will all go to the finish line at different paces, but there is no gun starting it and there is no flag ending it.(63)

Scientific work by Canada to delineate its extended continental shelf in the Arctic and Atlantic oceans began in 2005, involving three federal departments.(64) Because the collection of data in the Arctic takes place in a very remote, often dark, region under extreme weather conditions, the mapping exercise there is sometimes referred to as "Canada's moon mission." With respect to national claims to the seabed, there is a potential three-way overlap among Canada, the United States and Russia.(65)

In the western Arctic, scientists aboard the *CCGS Louis S. St-Laurent* have been gathering seismic data and conducting bathymetry (measuring the depth of the water) in the Beaufort Sea. The Committee was informed that, starting in August 2008, the mapping exercise would involve a second CCG icebreaker as the survey moves further north into heavier ice conditions. Despite a disagreement between Canada and the United States over the legal status of the Northwest Passage, part of the survey would be conducted jointly with the US Coast Guard vessel *Healy*.(66)

In the eastern Arctic, despite Canada's ongoing dispute with Denmark over Hans Island, the two countries have been cooperating closely on mapping the shelf area north of Ellesmere Island and Greenland to determine whether the Lomonosov Ridge, an undersea elevation between Siberia and Canada's Ellesmere Island near the North Pole, is a geological extension of their land mass.(67) If this is the case, a three-way delimitation problem will result

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(63) Ibid.

(64) DFAIT is the lead department for the preparation, presentation and defence of Canada's claim before the CLCS. Natural Resources Canada (the Geological Survey of Canada) is responsible for seismic surveys, and DFO (the Canadian Hydrographic Service) is responsible for bathymetry.

(65) Dr. Donat Pharand, Brief submitted to the Committee, 6 May 2008.

(66) The Hon. Loyola Hearn, Minister of Fisheries and Oceans, Letter to the Chair, Responses to Questions, 23 May 2008. See also US State Department, "Two Scientific Cruises to Map Arctic Seafloor," Media note, 11 August 2008, http://2001-2009.state.gov/r/pa/prs/ps/2008/aug/108119.htm.

(67) DFAIT, "Canada's Program: Arctic." A memorandum of understanding was signed in June 2005 between the Geological Survey of Canada and the Geological Survey of Greenland and Denmark for joint surveying in the area north of Greenland (Denmark) and Ellesmere Island (Canada).

between Canada, Denmark and Russia.[68] According to Dr. Huebert, Canada's claim will not only likely overlap with Russia's, but could also potentially reach over to the Russian side of the North Pole, depending on the physical attributes of the ridge. However, Canada's exploration work, he noted, stops at the North Pole.

Russia, the first country to officially make a submission to the CLCS in December 2001,[69] views the Lomonosov Ridge as a natural prolongation of the Eurasian land mass, allowing it to claim a vast expanse of the sea floor, including the North Pole. The CLCS responded to its submission by recommending that additional scientific data be gathered and that a revised claim be submitted by 2009.

All witnesses at our meetings viewed Russia's flag-planting expedition to the North Pole in 2007 as a publicity stunt with no relevance to sovereignty or significance in international law. The North Pole is on the high seas, beyond any national jurisdiction, and has no legal or special status. According to Dr. Huebert, Russia has been trying to convince the world to adopt what is known as the "sector theory" – dividing the Arctic into sectors belonging to the Arctic rim states using the North Pole as the reference point.[70] On Russia's gesture at the North Pole, Dr. Scott Borgerson of the (US) Council on Foreign Relations remarked:

> In terms of the international relations and diplomacy of it all, it [was] a photo opportunity, nothing more than pure symbology. … That said, the Russians have the ability to operate in the Arctic. … At the end of the day, while planting a flag is purely symbolic, and international law and the rule of law should govern such issues, there is also an old expression in history of "might makes right." Having the ability to operate there and present a presence is worth something.

At a special meeting held in Ilulissat, Greenland, on 27–29 May 2008, the five Arctic coastal countries (Canada, Denmark, Norway, the Russian Federation, and the United States) reaffirmed their commitment to cooperation and existing international legal frameworks, such as the LOS Convention, and to "the orderly settlement of any possible overlapping claims," and saw no need to develop a new comprehensive international legal regime to govern the Arctic Ocean.[71]

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[68] Dr. Donat Pharand, Brief submitted to the Committee, 6 May 2008. Recent scientific data reportedly show that the Lomonosov Ridge is attached to the North American and Greenland plates. Natural Resources Canada, "Government of Canada Welcomes New Mapping Data on Canada's North," News release, 8 August 2008, http://www.nrcan-rncan.gc.ca/media/newcom/2008/200856-eng.php.

[69] Russia ratified the LOS Convention in 1997. Only Russia and Norway have made submissions to the CLCS.

[70] Canadian Senator Pascal Poirier is credited as having been the first to propose the sector theory in 1907.

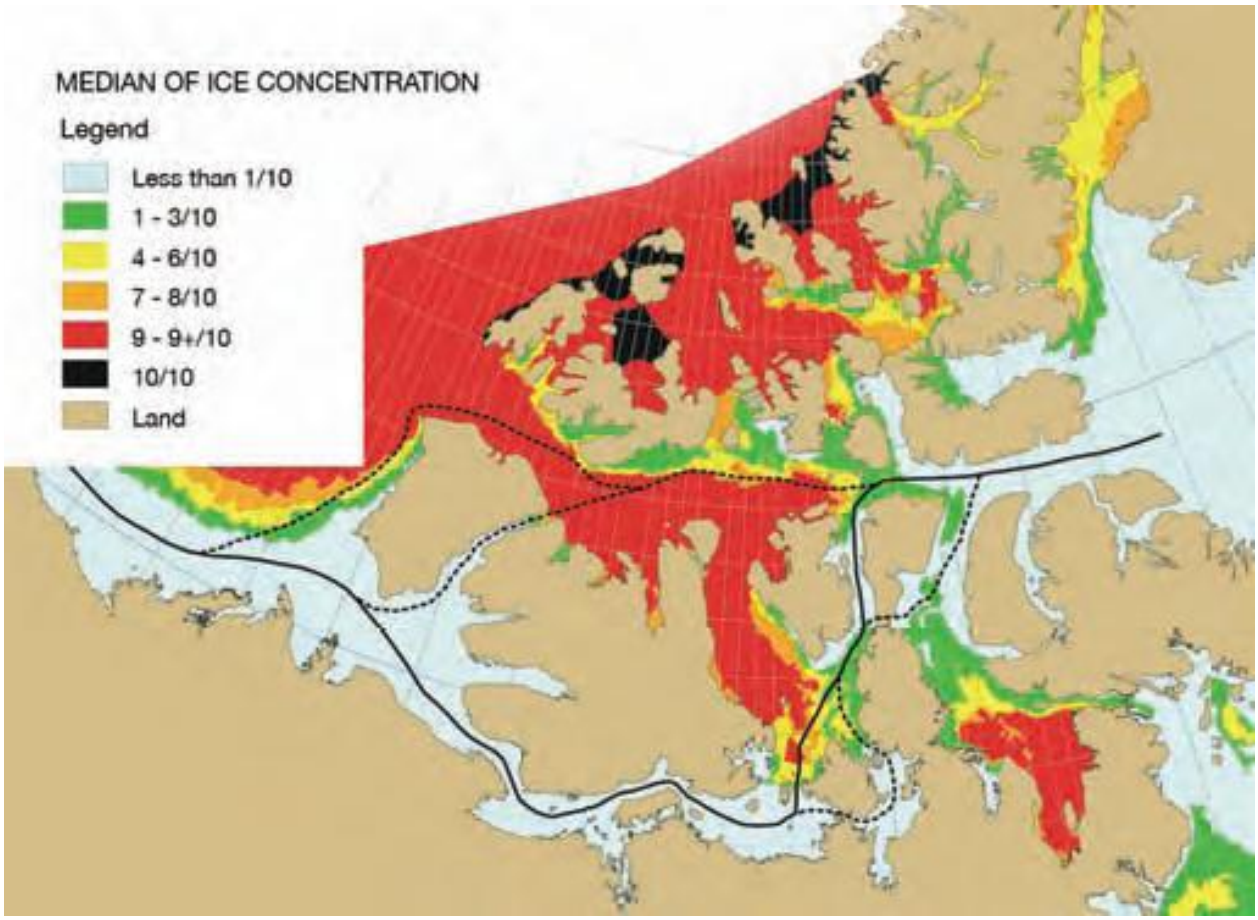
[71] The May 2008 Ilulissat Declaration can be accessed at: http://www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf. Indigenous peoples and some members of the Arctic Council, including Iceland, Finland and Sweden (which do have no direct coastlines on the Arctic Ocean) were not invited to the conference and were not party to the Ilulissat Declaration.

4. Water: Shipping in the Northwest Passage

Although there is broad international recognition that all of the islands in the Arctic Archipelago are exclusively under Canadian jurisdiction, the same cannot be said with respect to their surrounding waters.

A potentially serious challenge to Canadian sovereignty concerns control over shipping in the Northwest Passage. This long-sought shortcut linking the Atlantic and Pacific oceans consists of several possible water routes that run through Canada's Arctic islands (the world's largest archipelago) and connects the Davis Strait in the east to the Beaufort Sea in the west (Map 1).

Map 1 – Typical Routes for the Northwest Passage*



* The routes are superimposed on charted median ice concentration (1971–2000) for 3 September. Colour indicates ice concentration in tenths.

Source: Natural Resources Canada, *From Impacts to Adaptation: Canada in a Changing Climate 2007*, "Case Study 2: The Future of the Northwest Passage," p. 83, http://www.adaptation.nrcan.gc.ca/assess/2007/index_e.php.

Canada's position is that the Passage is part of its historic internal waters, over which it enjoys full sovereignty. This includes the right to unilaterally pass laws and regulations to protect Canadian interests, including those of its northern residents and particularly the Inuit. In response to the crossing of the US icebreaker *Polar Sea* through the Passage without Canada's prior consent in 1985, Canada established, under customary law, "straight baselines"[(72)] around the outer perimeter of the Canadian Arctic Archipelago, which took effect on 1 January 1986. At the time, the United States and the European Union sent notes of protest objecting to Canada's historical claim over these waters and to the validity of the baselines.

More recently, in November 2008, the European Commission urged "Member States and the Community [to] defend the principle of freedom of navigation and the right of innocent passage in the newly opened routes and areas." The United States identified "freedom of the seas [as] a top national priority" in a National Security Presidential Directive signed by the US President in January 2009.

The United States, so far the most vocal opponent of Canada's claim, considers the Northwest Passage to be an "international strait" – a corridor where its vessels have the right of "transit passage," a right under international law that is as extensive as on the high seas (international waters). From the standpoint of the United States, a country that has focused on security interests and on keeping the world's straits and channels open for its navy since the Cold War and even earlier, Canada's claim threatens to create an unwanted legal precedent elsewhere in the world (e.g., the Strait of Malacca, Hormuz, Gibraltar, and other strategic straits).[(73)]

Canada does not oppose international navigation in the Northwest Passage, nor is it in Canada's interest to prevent it. But if the Passage were considered an international strait, Canada would not have the right to pass and enforce its own laws and regulations governing international shipping. Instead, international safety and marine standards would apply.[(74)]

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(72) At the time, Canada had not yet ratified the LOS Convention. The purpose of straight baselines is to enable a coastal state with the required geography to measure its territorial waters from those lines instead of following the sinuosity of the coast. The rules governing the use of straight baselines were first formulated by the International Court of Justice in the *Fisheries Case* of 1951. Similar rules were then incorporated in the 1958 Territorial Sea Convention, and were retained in the 1982 LOS Convention (Article 5). Dr. Donat Pharand, Brief submitted to the Committee, 6 May 2008.

(73) Dr. Scott G. Borgerson, *Committee Proceedings*, 8 April 2008.

(74) Such as those set by the International Maritime Organization (IMO), which flag states are responsible for enforcing.

Ironically, the US position means that foreign ships, including warships, would have virtually the same right of passage as they have on the high seas. If the Passage were considered an international strait (as the United States claims it to be), submarines would not have to surface and alert Canada (the adjacent coastal state) to their presence, and military aircraft would have the right to use the airspace above the Passage. There would, in fact, be very few restrictions on navigation, which means that the Passage could potentially be used for illegal activities, such as drug smuggling, illegal immigration or even the transportation or importation of weapons of mass destruction. Put simply, US security interests would be better protected if the United States recognized Canada's sovereignty and control.

In 1969, the American supertanker *Manhattan* sailed into the Northwest Passage without seeking Canada's permission.[(75)] In response to what it viewed as a challenge to its sovereignty, Canada sent an icebreaker to accompany the *Manhattan* and was able to arrange to have a Canadian government representative on board. Canada also passed the *Arctic Waters Pollution Prevention Act* (AWPPA) to protect the marine environment and preserve the traditional way of life of Inuit people in 1970. At the time, the United States denounced this legislation.

The AWPPA applies to shipping up to a distance of 100 nautical miles from the nearest Canadian land north of 60 degrees. The Act provides for regulations forbidding the discharge of fluids or solid wastes into Arctic waters, setting design requirements for vessels, and prescribing Shipping Safety Control Zones within which ships must meet specific standards, for example hull and fuel tank construction. At our meetings, the Act was said to be ahead of its time. DFAIT's Legal Advisor, for instance, noted in his testimony that neighbouring Arctic countries had shown an interest in passing similar legislation.

The AWPPA of 1970 was later given international validation in 1982 when Article 234, known as the "Arctic exception," was included in the LOS Convention at Canada's insistence. Article 234 allows coastal states to enforce non-discriminatory, science-based regulations relating to maritime pollution prevention and control within EEZs (i.e., to 200 nautical miles) "where particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance." Russia applies and enforces its regulations for navigation along the Northern Sea Route on the basis of Article 234.

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(75) The objective of the voyage was to test the viability of moving Alaskan oil to refineries on the east coast of the United States. The route, however, was deemed impractical and too expensive at the time. Instead, industry opted for an Alaskan pipeline.

As long as ice conditions hazardous to international shipping remained, Canada's interests in the Northwest Passage were protected. DFAIT's approach has been to gradually build international acceptance of Canada's position over time.[76] Until now, Canada could afford to go on "agreeing to disagree" with the United States over its legal status.[77] But, as noted earlier, ice conditions in the Arctic are rapidly changing.

Three witnesses who appeared before the Committee last year (Dr. Michael Byers, Dr. Rob Huebert, and Dr. Scott Borgerson) were also participants at a two-day "Model Negotiation on Northern Waters," which took place at the headquarters of the International Joint Commission in Ottawa in February 2008. Described as "an extraordinary exercise in simulated diplomacy,"[78] this mock or unofficial negotiation involved two teams of high-profile, non-governmental experts on international relations and polar politics. One team represented the United States, the other Canada. Their objective was "to discuss issues, identify possible solutions and make joint recommendations concerning navigation in Northern waters."[79] Nine "Agreed Recommendations" were subsequently forwarded to the governments of the United States and Canada.

What emerged from the simulation were proposals on how to protect Canadian interests and values in the Arctic, while at the same time side-stepping the issue of navigation in international straits. Although *the underlying legal dispute* over the status of the Northwest Passage was not resolved, witnesses indicated that the Model Negotiation had shown opportunities for cooperation between the two countries if the issue of control of international shipping is set aside.

For instance, the first recommendation proposed that the United States and Canada "collaborate in the development of parallel rules and standards and co-operative enforcement mechanisms with respect to notifications and interdiction zones in the northern waters of Alaska and Canada." Off the north of Alaska, the United States would adopt a

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(76) Dr. Michael Byers, *Committee Proceedings*, 6 March 2008.

(77) For example, in 1988, when heavy ice conditions prevailed, the dispute with the United States was partly set aside with the signing of a treaty on "Arctic Cooperation" in which Canada and the United States sought to "facilitate navigation by their icebreakers in their respective Arctic waters and to develop cooperative procedures." The United States undertook to request Canada's consent for "all navigation by US icebreakers within waters claimed by Canada to be internal." However, the agreement applies only to US Coast Guard icebreakers and states that either country's legal position vis-à-vis Arctic waters is unaffected.

(78) Randy Boswell, "Canada, U.S. Hold Mock Arctic Ocean Talks," *The National Post*, 20 February 2008, p. A6.

(79) Dr. Michael Byers, "A Thaw in Relations," *The Ottawa Citizen*, 6 March 2008, p. A13.

mandatory Arctic shipping traffic system to protect the western approaches of the Northwest Passage, and Canada would be notified of foreign vessels coming toward Canada.[80] With its own mandatory notification system, the United States would not be in a position to object if NORDREG were made mandatory.[81]

A major recommendation of the Model Negotiation was a proposal to create a new Canada–US Arctic Navigation Commission to address the two countries' common interests "in navigation, environmental protection, security, safety, and sustainable economic development." The proposed Commission "would follow the model of the International Joint Commission by acting as a recommendatory body."[82]

Dr. Scott Borgerson of the (US) Council on Foreign Relations fully endorsed the proposed bilateral Commission when he appeared before the Committee. His presentation stressed that Canadian and American values and interests are similar, both countries have a long history of working together (e.g., in NATO, NORAD, the Arctic Council), and that good management of international shipping in the Arctic is in the best interest of both parties. Dr. Borgerson proposed that Canada and the United States therefore begin discussions on how they might work together to establish shipping lanes and infrastructure and jointly police the northern waters. Among other things, he suggested that Canada lay all Arctic issues on the table to achieve a "grand compromise" with the United States, including with respect to the disputed boundary in the Beaufort Sea. There should also be joint Canada–US leadership in the International Maritime Organization (IMO) for a mandatory polar code regarding international shipping.

K. Joseph Spears, Principal of the Horseshoe Bay Marine Group (a marine consulting firm), likewise advised that more dialogue is needed with the United States to "get beyond the rhetoric."[83]

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(80) The United States currently does not require vessels approaching from north of Alaska to notify the US government.

(81) Dr. Michael Byers (2008), p. A13. NORDREG, Canada's marine traffic system in Arctic waters where the AWPPA applies, is voluntary. Unlike the situation on Canada's east and west coasts, foreign vessels entering Canada's Arctic waters are not required to report under NORDREG.

(82) The International Joint Commission has jurisdiction over the waters of the Great Lakes and the St. Lawrence River, and other waters along the Canada–US border.

(83) K. Joseph Spears, Principal, Horseshoe Bay Marine Group, as an individual, *Committee Proceedings*, 27 May 2008.

While acknowledging that there should be close cooperation with the United States, Dr. Donat Pharand, a prominent legal authority on Canada's Arctic waters and a specialist on the Northwest Passage, considered the idea of a Canada–US Arctic Navigation Commission similar to the International Joint Commission (in place along the southern Canada–US border) as somewhat "dangerous,"[84] given the specific status of Canada's Arctic waters.

> We do not share sovereignty over the Northwest Passage with anyone. I do not think that we want to. I think that we must maintain our independence, if I can put it this way, and maintain our complete sovereignty over those waters but with, at the same time, the closest possible cooperation with the United States.

Dr. Pharand instead proposed that Canada negotiate a bilateral Transit Agreement under which "the United States would recognize Canada's sovereignty over the waters of the Archipelago, including those of the Northwest Passage." In return, "Canada would recognize a right of transit for American merchant ships and icebreakers, under stipulated conditions to ensure the protection of Canada's marine environment and related interests."[85]

As for the US position on the legal status of the Northwest Passage, Dr. Pharand informed the Committee that the 1982 LOS Convention does not clearly define an international strait; the definition is a matter of customary international law. In this regard, two criteria were said to have been applied by the International Court (in the *Corfu Channel Case*) in 1949. The first criterion requires that there be an overlap of 12-mile territorial waters, which was the case in the Barrow Strait of the Northwest Passage before Canada drew straight baselines in 1985.

The second condition is whether there has been a "useful route for international maritime traffic."[86] In Dr. Pharand's view, if foreign navigation takes place in the Northwest Passage without Canada having taken adequate control measures, the Passage could at some point become "internationalized" and subject to the right of transit passage. The waterway, he argued, may not have had a history as a useful route for international maritime traffic; but because of the remoteness of the region and the difficulties of navigation, comparatively little use for international navigation might be sufficient to make the Northwest Passage an international strait.[87]

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(84) Dr. Donat Pharand, *Committee Proceedings*, 6 May 2008.

(85) Dr. Donat Pharand, Brief submitted to the Committee, 6 May 2008.

(86) Ibid. The various routes of the Northwest Passage have seen a total of only 69 complete (known) transits by foreign ships from 1903 to the end of 2007.

(87) Ibid. See also Dr. Donat Pharand, "The Arctic Waters and the Northwest Passage: A Final Revisit," *Ocean Development and International Law*, Vol. 38, Issue 182, January 2007, pp. 23–69.

In Dr. Rob Huebert's view, the United States might be more inclined to support or recognize Canada's legal claim if Canada had the tools to enforce its laws and regulations. Dr. Donat Pharand similarly commented: "It seems to me the United States will never agree to recognize our full control over those waters unless they know that we have the capability to exercise that control, which we do not have at the moment." Dr. Michael Byers advised that the United States will not recognize Canada's claim in the Northwest Passage for one simple reason:

> They are not convinced that we are truly committed to stepping up to the plate and actually exercising the degree of authority needed to protect their interests. Their worst case scenario is to actually recognize Canada's sovereignty and then have us do nothing. If they recognize our sovereignty in the Northwest Passage and we do nothing or do not do enough, then they lose.

5. Outline of Federal Responses to Date

Climate change, receding sea ice and increased marine activity underscore the need for more monitoring and control over Canada's vast Arctic territory, particularly the waters of the Northwest Passage. The "Canada First Defence Strategy" unveiled on 12 May 2008 coalesced a number previously announced National Defence-related initiatives.[88] The federal government is also pursuing a vision for "a new North" called "Canada's Northern Strategy."

The responsibilities of the Canadian Forces (CF) in Canada's North include conducting sovereignty and aerial surveillance patrols of Canada's northern territory and its approaches, providing transportation in support of other government departments, assisting with ground search and rescue (SAR) operations, and providing logistical support to the Coast Guard in response to a maritime pollution accident. Air, land and sea exercises are also conducted annually with other government agencies, such as the Canadian Coast Guard and the RCMP, to improve coordination in responding to emergencies.

Among the northern assets currently maintained by the CF are: the headquarters of Joint Task Force North (JTFN) in Yellowknife, four CC-138 Twin Otter aircraft, the North Warning System (a series of unmanned radar stations), four forward operating locations capable of supporting aircraft operations, Canadian Forces Station (CFS) Alert (a signals intelligence-gathering station located on the northeast tip of Ellesmere Island, the world's northernmost permanently inhabited settlement), and approximately 1,500 Canadian Rangers (reservists).[89]

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(88) Office of the Prime Minister, "Canada First Defence Strategy," Media backgrounder, 12 May 2008, http://pm.gc.ca/eng/media.asp?id=2096.

(89) National Defence, "Canada First Defence Strategy – Canadian Forces' Contribution to Sovereignty and Security in the North," Backgrounder, 12 May 2008, http://www.forces.gc.ca/site/news-nouvelles/view-news-afficher-nouvelles-eng.asp?id=2645.

Recent initiatives to increase the presence of the CF in the Arctic, and to better respond to incidents and potential challenges to Canadian sovereignty include:

- six to eight new armed, ice-strengthened offshore patrol vessels ("Polar Class 5 Arctic/ Offshore Patrol Ships") to be added to the Navy fleet (announced in July 2007);[90]
- $100 million to develop a new naval base at the existing deepwater port of Nanisivik, in Nunavut (announced in August 2007);[91]
- a $4-million multi-purpose Arctic Training Centre at Resolute Bay (announced in August 2007) capable of supporting the Army Advanced Winter Warfare Course, army sovereignty operations and Canadian Forces Joint Exercises, SAR technician Arctic survival training, Canadian Rangers training, and a command and control centre for regional military and civilian disaster-response operations;
- plans to enhance the ability of the CF to conduct surveillance through the modernization and replacement of the Aurora patrol aircraft acquired in 1980, the use of unmanned aerial vehicle (UAV) technology, and the Polar Epsilon project;[92]
- the establishment of a permanent army reserve unit based in Yellowknife;[93]
- the expansion of the size and capabilities of the Canadian Rangers;[94] and
- the expansion of the Junior Canadian Rangers Programme.[95]

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(90) The vessels will be used to patrol Arctic approaches. The estimated acquisition cost was $3.1 billion, and another $4.3 billion will be required for operation and maintenance over their 25-year lifespan. The Navy expects to take first delivery in 2013.

(91) Located in sheltered Strathcona Sound inside the eastern entrance to the Northwest Passage, the base is expected to serve as a staging area for the new Arctic/Offshore Patrol Ships naval vessels, enabling them to resupply, refuel, embark equipment and supplies, and transfer personnel. Construction is planned to begin in 2010, with the new facility expected to be fully operational by 2015. Maintenance and operating costs are projected at approximately $200 million over 20 years.

(92) Polar Epsilon will provide *space-based surveillance using information from Canada's RADARSAT-2 satellite to produce imagery for military commanders during the conduct of operations. As the Committee noted in its June 2008 interim report, the f*ederal government blocked the proposed sale of RADARSAT-2 to a US-based company in April 2008.

(93) Announced by Canada's Minister of National Defence on 5 September 2008.

(94) Nationally, the Canadian Rangers are grouped into five Canadian Ranger Patrol Groups (CRPGs). "1 CRPG," which is responsible for the territorial north, has over 1,500 Rangers in 56 patrols and more than 1,500 Junior Canadian Rangers in 35 communities. See Department of National Defence, "1st Canadian Ranger Patrol Group, Joint Task Force North (JTFN)," http://www.army.dnd.ca/lf/English/7_5_4_1.asp.

(95) National Defence, "Minister MacKay Announces Support for Junior Canadian Rangers," News release, 21 August 2008, http://www.forces.gc.ca/site/news-nouvelles/view-news-afficher-nouvelles-eng.asp?id=2742.

The Speech from the Throne of 16 October 2007 broadened the federal focus of Canada's response by committing to the development of an integrated Northern Strategy in order to strengthen Canada's sovereignty, to protect environmental heritage, to promote economic and social development, and to improve and devolve governance so that northerners have greater control over their destinies.(96) The Speech from the Throne also committed to build a world-class research station in Canada's Arctic.(97)

Funding in support of the strategy announced in the 26 February 2008 Budget included:

- $720 million for a new Canadian Coast Guard icebreaker with greater icebreaking capabilities than the *CCGS Louis S. St-Laurent*, which is scheduled to be decommissioned in 2017;

- $20 million in additional funding (over the next two years) to carry out comprehensive mapping of Canada's seabed (in both the Arctic and Atlantic oceans), and to fund legal work in support of Canada's submission to the United Nations Commission on the Limits of the Continental Shelf;

- $8 million (over the next two years) for the construction, operation and management of a commercial fisheries harbour in Pangnirtung;

- $10 million annually (over the next two taxation years) to increase the residency deduction under the Northern Residents Deduction by 10% from $15 to $16.50;

- $34 million (over the next two years) to Natural Resources Canada for geological mapping (primarily focused in the North), and for logistical support for mapping activities provided by the Polar Continental Shelf Project; and

- an extension of the 15% Mineral Exploration Tax Credit until 31 March 2009 to help companies raise capital for mining exploration.(98)

Some aspects of the Integrated Northern Strategy relate to development and improved governance.(99) In August 2008, the Prime Minister announced that $100 million

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(96) Government of Canada, Speech From the Throne, 16 October 2007, http://pm.gc.ca/eng/media.asp?id=1863.

(97) Three locations are being considered for Canada's new High Arctic Research Station: Cambridge Bay, Pond Inlet and Resolute. INAC, "Canada Follows Through on Major Commitments to Arctic Research," News release, 20 February 2009, http://www.ainc-inac.gc.ca/ai/mr/nr/j-a2009/nr000000196-eng.asp.

(98) Office of the Prime Minister, "Northern Strategy," Backgrounder, 10 March 2008, http://pm.gc.ca/eng/media.asp?id=2016.

(99) Indian and Northern Affairs Canada, "Government Moves Ahead on Improvements to Northern Regulatory Regime," News release, 12 June 2008, http://www.ainc-inac.gc.ca/ai/mr/nr/m-a2008/2-3053-eng.asp?p1=209557&p2=6153.

would be invested over the next five years to map the North's geological resources.[100] As part of the federal government's integrated Northern Strategy, the Prime Minister also announced in 2008 that the Government of Canada would also extend the reach of its environmental laws and shipping regulations in the Canadian Arctic.[101]

The Speech from the Throne of 19 November 2008 indicated that economic development in the North, led by a new stand-alone agency, would be a key element of the Northern Strategy.[102]

Funding in support of the North announced in the 27 January 2009 Budget included:

- up to $17 million to accelerate the construction of the Pangnirtung Harbour;[103]
- $2 million to undertake a feasibility study for the proposed High Arctic research station;
- providing Indian and Northern Affairs Canada (INAC) with up to $85 million over the next two years to invest in maintaining or upgrading key existing Arctic research facilities;
- $50 million over five years to establish the new economic development agency in the North;
- $90 million over five years to INAC to renew the Strategic Investments in Northern Economic Development program, which will form the new development agency's core activity;[104]
- $200 million over two years in dedicated funding to support the renovation and construction of social housing units in the territories;[105]
- a one-year extension of the 15% Mineral Exploration Tax Credit;[106] and

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(100) Office of the Prime Minister, "Geo-mapping for Energy and Minerals Program," Backgrounder, 26 August 2008, http://pm.gc.ca/eng/media.asp?id=2243.

(101) Complementary initiatives under the Health of the Oceans component of the National Water Strategy include outfitting Arctic surveillance aircraft to track polluters, and co-leading the Arctic Marine Shipping Assessment. Transport Canada, "Canada Moves to Further Protect Its Sovereignty and Safeguard Arctic Waters From Pollution," News release, 3 December 2008, http://www.tc.gc.ca/mediaroom/releases/nat/2008/08-h233e.htm.

(102) Government of Canada, Speech From the Throne, 19 November 2008, http://www.sft-ddt.gc.ca/eng/media.asp?id=1364.

(103) Other infrastructure projects in the North include the construction of a bypass road in Yellowknife, water treatment projects in the Yukon, and a cultural facility in Clyde River (Nunavut).

(104) The federal government supports economic development in the North through the Strategic Investments in Northern Economic Development program.

(105) The Yukon and Northwest Territories are to receive $50 million each, while the remaining $100 million will be allocated to Nunavut.

(106) The net cost of the extension is estimated to be $55 million over the next two fiscal years.

- $37.6 million in the 2009–2010 fiscal year in support of environmental assessments, regulatory coordination, science and Aboriginal consultations related to the Mackenzie Gas Project.[107]

6. Integrated Approaches

Led by Indian and Northern Affairs Canada, the Northern Strategy focuses on four priorities: economic and social development, governance, environmental protection, and sovereignty. The federal government has been "working on broadening and deepening the Northern Strategy, particularly the people dimension."[108]

The evidence heard by the Committee indeed indicated a pressing need to integrate the views of northerners and Inuit in priority-setting, policymaking, and decision-making, as the following quotations from the transcripts of the Committee's hearings illustrate:

> Arctic policy tends to be read down as federal policy towards three territorial governments. … Repeated offers by Inuit of working in genuine partnership with the Government of Canada to create imaginative and energetic ways – outcomes that are win-win, that is outcomes that are both good for Inuit and Canada as a whole – are not squarely embraced.
>
> – John Merritt, Senior Policy Advisor, ITK, 15 April 2008

> The Speech from the Throne promised the development of an integrated northern strategy to include sovereignty and security measures. We look forward to being consulted on this strategy. … We only ask that we be included in the planning process. I think it is not too late and we can make the best of it.
>
> – Paul Kaludjak, President, NTI, 15 April 2008

> [Resolute Bay and Grise Fiord] will be affected by sovereignty activities. We are very concerned and would like to be kept up to date about what is happening on sovereignty issues for the sake of the two sovereignty communities in the high Arctic.
>
> – The Hon. Olayuk Akesuk, Nunavut Minister of the Environment, 2 June 2008

> [T]he federal government should be involving the people of Nunavut. The Nunavummiut live in the North, and have a land claim in the North. They are involved in activities in the Northwest Passage, and that involvement will not

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(107) The 2009 Budget also provides up to $200 million to dredge the approaches and accelerate the repair and maintenance of Canada's core commercial fishing harbours, including core harbours in the Northwest Territories. See Department of Finance, *Budget 2009: Canada's Economic Action Plan*, 27 January 2009, http://www.budget.gc.ca/2009/plan/bptoc-eng.asp.

(108) INAC, "Fact Sheet: Northern Strategy," http://www.ainc-inac.gc.ca/ai/mr/is/n-strat-eng.asp.

only benefit Nunavut but will show Canada's presence in the Arctic and in the northern parts of Canada.

– Earle Baddaloo, Nunavut Environment Department, 2 June 2008

DFO is not consulting with any Inuit stakeholders. If DFO is working or consulting with any other federal, provincial or territorial agencies or consulting with any other affected stakeholders we are not aware of it.

– John MacDougall, NTK, 2 June 2008

I would urge that you consult more with the adjacent communities and those affected by the resources leaving their waters.

– Leopa Akpalialuk, Vice-Chairman, Pangnirtung HTO, 5 June 2008

The Inuit have been very left out and ignored. … What the Government of Canada should be doing is working with the Government of Nunavut, the Government of the Yukon and the Métis and all the Aboriginal organizations living in this part of Canada to deal with Arctic sovereignty. The Government of Canada will find that it has a lot of friends that it is ignoring.

– John Amagoalik, 2 June 2008

The people of Nunavut have to be part of the process in determining how that gateway is going to be used, what the potential impacts are right down to the community level. … We need to be part of that process.

– Hal Timar, Baffin Regional Chamber of Commerce, 2 June 2008

The Inuit must also become part of this process because they bring in valuable skills and knowledge. … Bringing people together is key, as is bringing the 30,000 Canadians into the picture so that they have some say in the decision making.

– K. Joseph Spears, 27 May 2008

[A]ny talk about shipping, big ships from the south to the north, or through the Northwest Passage, … you have to include the Inuit. This is something that you cannot say well, Nunavut is just a territory so they have no power.

– Aaju Peter, 2 June 2008

[R]egional Inuit leaders have stated that the Government of Canada should work more closely with the Inuit people in expressing our sovereignty of the Arctic.

– Duane Smith, President, ICC (Canada), 1 April 2008

Northern Aboriginal people increasingly view themselves as masters in their own house. With the conclusion of the Nunatsiavut (Labrador) land claims agreement in December 2005, the entire northern half of Canada is now governed by comprehensive land

claims agreements.[109] These modern treaties have fundamentally changed the political landscape in the North and the way federal programs are delivered. The fishery management programs of the Department of Fisheries and Oceans, for example, are now conducted in conjunction with co-management boards, which are vehicles for shared decision-making and for responding to local priorities, needs and values.[110]

Under the 2003 Nunavut Land Claims Agreement (NLCA), the hunting and fishing rights enjoyed by Inuit in the Northwest Passage (their rights in relation to the operation of various co-management boards) were defined geographically to coincide with the seaward extent of Canada's 12-mile limit. John Merritt, Senior Policy Advisor of Inuit Tapiriit Kanatami (ITK),[111] indicated to the Committee that the NLCA espouses a high level of integration between land and marine areas, and between terrestrial wildlife and fish management. The land and marine areas that make up Inuit Nunaat (or the "Inuit homeland" in Inuktitut), he said, also include the northern regions of two provinces, namely Quebec (Nunavik) and Newfoundland and Labrador (Nunatsiavut),[112] a political reality that should be reflected in an integrated "Arctic strategy." In his view, federal policy also tends to mistakenly focus on Canada's three territories as land-only entities.[113]

The development of integrated approaches is a challenge in Canada's vast northern region because issues tend to cut across a number of government departments and agencies, with each having its own jurisdictional responsibilities and powers. Former Deputy Coast Guard Commissioner Michael Turner pointed out the natural tendency for these organizations to operate in a silo.[114]

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(109) The Nunavut territorial government is the only one in Canada that functions within the framework of a land claim agreement (the 1993 Nunavut Land Claims Agreement). A detailed description of each claim can be found at: http://www.ainc-inac.gc.ca/al/ldc/ccl/pubs/gbn/gbn-eng.asp.

(110) K. Burt Hunt, Regional Director, Fisheries and Aquaculture Management, Central and Arctic Region, DFO, *Committee Proceedings*, 1 May 2008.

(111) John Merritt, Senior Policy Advisor, Inuit Tapiriit Kanatami, *Committee Proceedings*, 15 April 2008. ITK is the national voice of Canada's Inuit and represents Inuit living in Nunatsiavut (Labrador), Nunavik (Northern Quebec), Nunavut, and the Inuvialuit region of the Northwest Territories.

(112) The Committee learned that the Quebec National Assembly had unanimously adopted a resolution in 2007 calling on the federal government to include Nunavik in the strategy.

(113) Together, the three territories contain two-thirds of Canada's marine (saltwater) coastline. They also comprise 40% of the country's land mass, and share 14% of the total Canada-US border. *Northern Connections: A Multi-Modal Transportation Blueprint for the North*, February 2008, p. 4, http://www.hpw.gov.yk.ca/pdf/northernconnections.pdf.

(114) Michael Turner, Former Deputy Commissioner of the Canadian Coast Guard, *Committee Proceedings*, 28 February 2008.

> This is not unexpected, given the British cabinet system of government we are all so familiar with, in which individual departmental programs and services with their enabling statutes report up through a department to a deputy minister and a minister who is accountable to Parliament. That in itself drives a certain insularity and intensity of focus within the department, which is a good thing. However, in our increasingly complex world, it becomes essential to cooperate, coordinate and collaborate across and between departments.

Joint exercises have therefore taken place in recent years to enhance inter-agency coordination and communication in the Arctic. Operation Nanook is one of three major sovereignty operations conducted each year by the Canadian Forces in the North. Last year in August, Operation Nanook 08 simulated a disease outbreak and hostage-taking on a cruise ship, a fuel spill form a cargo ship, and a fire on a Russian cargo ship. Approximately 600 Canadian Forces members worked alongside personnel from the RCMP, the Canadian Coast Guard, Public Safety, Health Canada, the Canada Border Services Agency, the Emergency Management Office Nunavut, and others.[(115)]

The testimony of Mr. Spears also underlined the need for a "whole-of-government response" when exercising jurisdiction in the Arctic, along with territorial, community and Inuit involvement. Mr. Spears felt strongly that northern issues need to be considered holistically, and suggested that an interdepartmental working group, similar to the Arctic Security Interdepartmental Working Group (ASIWG),[(116)] be created as a forum and a means to share information and perspectives in further developing a strategy for the North. He also advised the Committee that Canada needs to build on existing strengths, making the best use of all available national assets, including those at Canadian Forces Base Goose Bay, which, in his view, takes on increased strategic importance because of a changing Arctic. CFB Goose Bay could be used as:

- a centre to provide a marine component and training for sovereignty and environmental response;
- a staging area for CP-140 flights for increased Arctic sovereignty patrols;
- an airport for all military and other federal departmental aerial surveillance;

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(115) National Defence, "Operations & Exercises," http://www.navy.forces.gc.ca/cms/4/4-a_eng.asp?id=674.

(116) Established in 1999, ASIWG was designed to promote cooperation and interaction among levels of government and government departments, including National Defence, Citizenship and Immigration Canada, the Canada Revenue Agency, and INAC, on matters related to Canadian Arctic security.

- a centre of excellence for the development and coordination of UAVs used for surveillance;
- a base for the deployment of a fleet of fixed-wing SAR aircraft;
- a dedicated centre of excellence and multidisciplinary venue for SAR training for military and civilian interaction; and
- a staging area for increased military operations in the North.

The considerable testimony heard by the Committee suggests that Canada's sovereignty in the Arctic can be demonstrated to the world in a number of different ways,[117] and Inuit have an important role to play in this regard.

The Canadian Rangers were said to provide a good example by providing a military presence, serving as "the eyes and ears" of the Canadian Forces in Canada's sparsely populated northern coastal regions. Being highly skilled in the ways of the land, they contribute to the effectiveness of the CF by sharing their in-depth knowledge of the land and environment, providing training in Arctic survival skills, helping with SAR missions, reporting unusual activities or sightings, and conducting surveillance and sovereignty patrols under the command of Joint Task Force North.

Canadian Ranger patrols provide what is often described as a "boots-on-the-ground" Canadian presence in the North; but as K. Joseph Spears noted in his testimony, they currently lack marine capabilities. As a key component of any integrated northern strategy, he believed that marine-capable Canadian Rangers would be useful in the areas of pollution response, marine SAR, security (naval boarding), climate change research, and in the exercise of jurisdiction in conjunction with other federal departments.

Aboriginal land claims in the North were also said to support Canada's claims of sovereignty in the region. The key message Paul Kaludjak, President of Nunavut Tunngavik Incorporated (NTI),[118] left with the Committee was that, though important, military and Coast Guard activities and satellite surveillance do not by themselves constitute an effective strategy. The Government of Canada, Mr. Kaludjak argued, needs to fully implement all the Articles of the NLCA and to respect the Agreement's spirit and intent "to demonstrate Arctic sovereignty on-the-ground." The following examples are provisions which he said had gone unimplemented:

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(117) For example, in an effort to reinforce Canada's sovereignty, the federal government embarked on a six-week search led by Parks Canada to find Sir John Franklin's lost ships, *HMS Erebus* and *HMS Terror*, last seen in the Northwest Passage in the 1840s. Randy Boswell, "Solving An 'Indiana Jones Mystery'; Search for Lost Ships Starts Soon," *The Ottawa Citizen*, 16 August 2008, p. A5.

(118) Paul Kaludjak, President, NTI, *Committee Proceedings*, 15 April 2008. NTI's mission is to foster Inuit economic, social and cultural well-being through the implementation of the Agreement.

- Article 12 of the Agreement requiring "government, in cooperation with the Nunavut Planning Commission, to adopt a plan to monitor Nunavut's natural environment as well as Inuit social, cultural and economic well-being";

- Article 15 providing for "the establishment of a Nunavut Marine Council to bring together institutions of public government and government departments to focus on the offshore";[119] and

- Article 15.3.7, which recognizes "the principle of adjacency in allocating commercial fishing licences."

In December 2006, NTI initiated a legal suit to compel the Government of Canada to live up to its responsibilities under the NLCA. Mr. Kaludjak put the matter in the following terms: "We are now in court because the Government of Canada has failed to implement an agreement which, given full force and effect, would strengthen Canada's Arctic sovereignty."

Being at the forefront of polar research is another means of establishing a sovereign base. In support of Canada's sovereignty agenda, the Canadian Polar Commission recommended in June 2008 that a pan-northern network of research facilities be built to meet Canada's northern science needs over the next 25 years.[120]

National parks where visitors must register and where local residents from nearby communities are involved in the management of wildlife, are other concrete manifestations of sovereignty. Sirmilik National Park, for example, was established in 2001 to protect the ecological integrity of land areas of Lancaster Sound.[121] At a briefing by staff at the Park office in the community of Pond Inlet, the Committee learned that the 1993 Nunavut Land Claims Agreement provided for the establishment of national parks in the territory. Nunavut's

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[119] According to NTI, the Nunavut Marine Council "would further demonstrate that the offshore is part and parcel of Canada, but due to lack of government initiative and funding, this article … remains unimplemented." Article 15.4.1 states that the Nunavut Impact Review Board, the Nunavut Water Board, the Nunavut Planning Commission, and the Nunavut Wildlife Management Board "may jointly, as a Nunavut Marine Council, or severally advise and make recommendations to other government agencies regarding the marine areas, and Government shall consider such advice and recommendations in making decisions which affect marine areas."

[120] Canadian Polar Commission (CPC), *Beacons of the North: Research Infrastructure in Canada's Arctic and Subarctic*, 2008, http://www.polarcom.gc.ca/announce.php?annon=144.

[121] Sirmilik means "place of glaciers" in Inuktitut. At the eastern end of Sirmilik is Bylot Island Migratory Bird Sanctuary, a haven for Arctic marine birds. The other three national parks in Nunavut are Auyuittuq, Quttinirpaaq, and Ukkusiksalik, which are among the most remote and northerly parks in the world. See Parks Canada, "National Parks and National Historic Sites of Canada in Nunavut," http://www.pc.gc.ca/voyage-travel/pv-vp/itm8-/page2_e.asp.

four national parks are managed to benefit Inuit and to protect park resources in accordance with principles of Inuit knowledge, culture and practice.[122]

Lancaster Sound, the body of water that stretches across the eastern gateway of the Northwest Passage and a reputed whale breeding ground, was one of three additional marine protected areas mentioned in Budget 2007.[123] Canada's Oceans Action Plan was seen as an opportunity for community input and involvement in oceans management.[124] Lewis Gidzinski, Infrastructure Research Manager of the Nunavut Association of Municipalities, told the Committee that his organization had been working with others in the promotion of integrated coastal planning, as called for in the 1997 *Oceans Act*.[125]

The Canadian Coast Guard also has a critical role to play in reinforcing Canada's sovereignty in the Arctic and demonstrating Canada's presence and exercise of jurisdiction in the region, as do domestic policies and initiatives in support of northern Canadians, such as those related to commercial fisheries.

7. Continuous Inuit Use and Occupation

Canadians in general tend to view themselves as a northern people, but Canada's Arctic is first and foremost the homeland of Inuit who have been using the region and its resources since time immemorial. Their presence, and their continued use and stewardship of its resources on land and in the ocean, buttress Canada's sovereignty claim to the North.

Canada claims sovereignty (i.e., complete jurisdiction) over its Arctic waters on the basis of historic title and by virtue of straight baselines established around the Arctic Archipelago. The requirements for acquiring an historic title to waters are similar to those

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(122) On 22 August 2008, Canada's Environment Minister and NTI's Acting President announced the establishment of three new National Wildlife Areas on and around Baffin Island. The Inuit Impact and Benefit Agreement addresses obligations identified in the NLCA associated with Migratory Bird Sanctuaries and National Wildlife Areas. Environment Canada, "Canada's Government Announces Protection for Arctic Wildlife Sanctuaries," News release, 22 **August 2008,** http://www.ec.gc.ca/default.asp?lang=En&n=714D9AAE-1&news=1888CBF6-5A68-40A2-8653-25F4FCF188BF.

(123) DFO, "Health of the Oceans Initiatives – A Listing by Lead Department or Agency," http://www.dfo-mpo.gc.ca/oceans/management-gestion/healthyoceans-santedesoceans/initiatives-eng.htm#natmarine.

(124) See DFO, "Canada's Oceans Action Plan," http://www.dfo-mpo.gc.ca/oceans-habitat/oceans/oap-pao/page06_e.asp.

(125) Lewis Gidzinski, Infrastructure Research Manager, Nunavut Association of Municipalities, *Committee Proceedings*, 2 June 2008. Part II of the *Oceans Act*, on "Oceans Management Strategy," obliges the Minister of Fisheries and Oceans to lead the development and implementation of a national strategy for estuarine, coastal and marine ecosystems. The national strategy is to be based on three key principles: integrated management of oceans activities, sustainable development, and the precautionary approach.

for land: the exercise of exclusive state jurisdiction, long usage, and acquiescence by foreign states, particularly those whose interests are primarily affected. In Dr. Pharand's view, Canada does not have a strong case with respect to historic title, and the burden of proof is also heavy.[126] Straight baselines drawn around the Arctic Archipelago in 1985, on the other hand, fully meet all legal criteria for international validity.[127]

The Committee was advised that, in addition to Canada having the required geography to use the straight baseline system, Canada can invoke "certain economic interests peculiar to a region, the reality and importance of which are clearly evidenced by a long usage," as was done in the Anglo-Norwegian *Fisheries Case* of 1951. In that case, the International Court of Justice allowed Norway to rely on traditional fishing rights reserved to local inhabitants in certain large basins to support the validity of their enclosure by straight baselines. Canada, Dr. Pharand asserted, can similarly invoke the vital needs and economic interests of its Inuit population. The Inuit's historical rights and centuries-old use of Arctic waters and ice for fishing, hunting and trapping can be relied on to reinforce Canada's title to the enclosed waters.[128]

Prior to the formation of communities, Inuit were largely nomadic, living throughout the Arctic in dispersed hunting camps and following migratory wildlife. Inuit have fished, hunted and trapped in the waters and on the sea ice of the Archipelago – the various channels of the Northwest Passage – since time immemorial. Their very long history of use and occupation in marine areas is well-established and documented, the Committee was advised, and its geographic extent is as great as that on land.

The presence of Inuit continues to support Canada's sovereignty in the region. There are 52 communities in Canada's Arctic having large Inuit populations (see Map 2), and nearly all of them are located on the Arctic or Atlantic coasts.[129] According to the 2006 Census, about 40,000 Inuit live in Nunavut, Nunavik, the Inuvialuit region, and Nunatsiavut – the four regions collectively known as Inuit Nunaat.[130] Inuit make up the majority of the population in Inuit Nunaat, accounting for 90% of the total population in Nunavik, 89% in

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(126) Dr. Pharand was unaware of any British or Canadian explorers ever having taken possession of any part of the Arctic waters, especially not those of the Northwest Passage.

(127) Dr. Donat Pharand, *Committee Proceedings*, 6 May 2008; Brief submitted to the Committee, 6 May 2008.

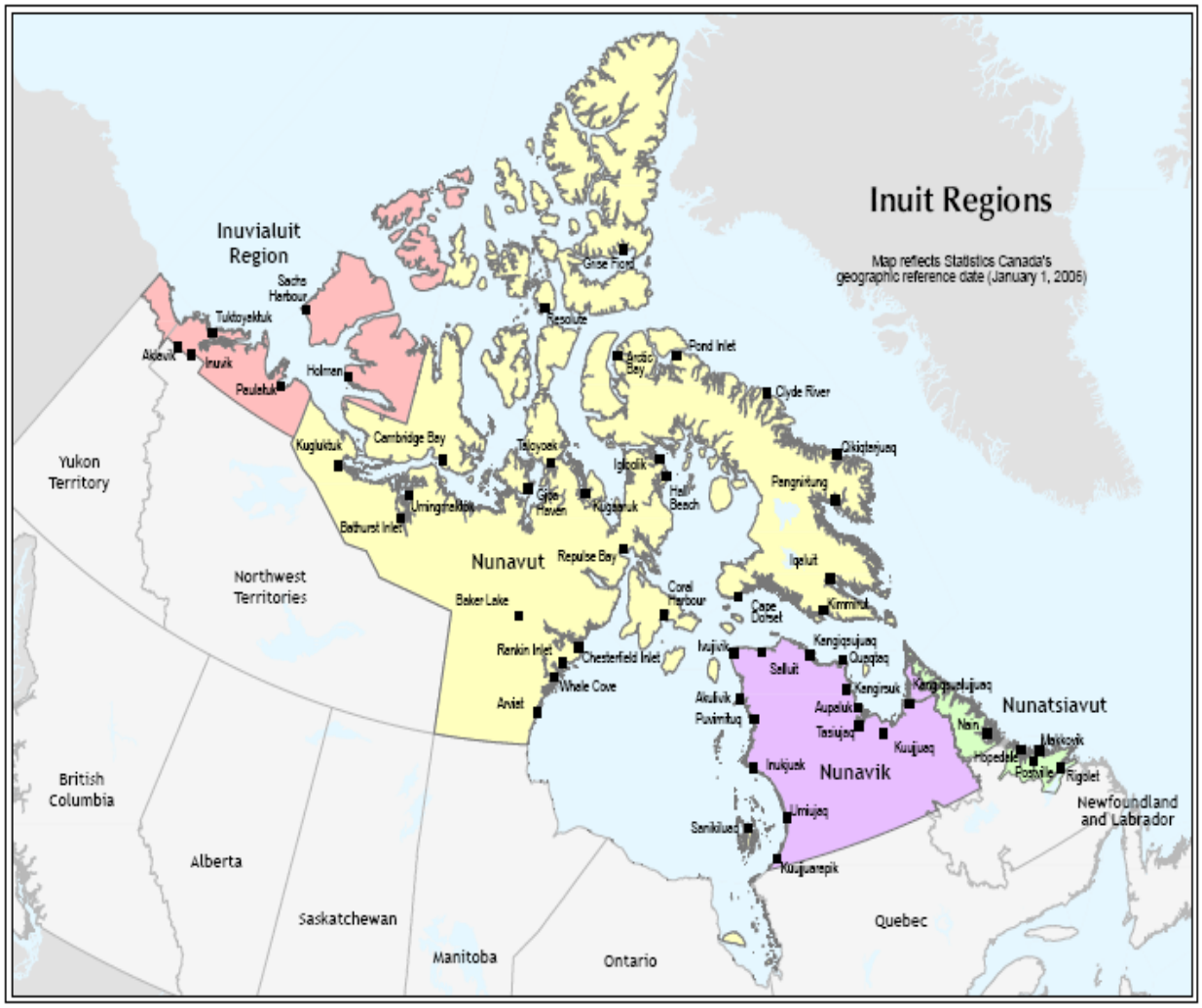
(128) Ibid.

(129) Statistics Canada, *Aboriginal Peoples in Canada in 2006: Inuit, Métis and First Nations, 2006 Census*, Catalogue No. 97-558-XIE, http://lpintrabp.parl.gc.ca/lopimages2/bibparlcat/16000/Ba413613.pdf. ITK and Makivik Corporation recognize 53 Inuit communities. Inuit in the community of Killiniq (or Taqpangajuk) in Nunavik were relocated in the mid to late 1970s. Although the community is currently uninhabited, the Inuit of Killiniq were recognized as signatory to the James Bay and Northern Quebec Agreement, and lands were allocated for this community.

(130) Ibid.

Nunatsiavut, 84% in Nunavut, and 55% in the Inuvialuit region.[(131)] Nunavut is divided into three administrative regions, as shown on Map 3.

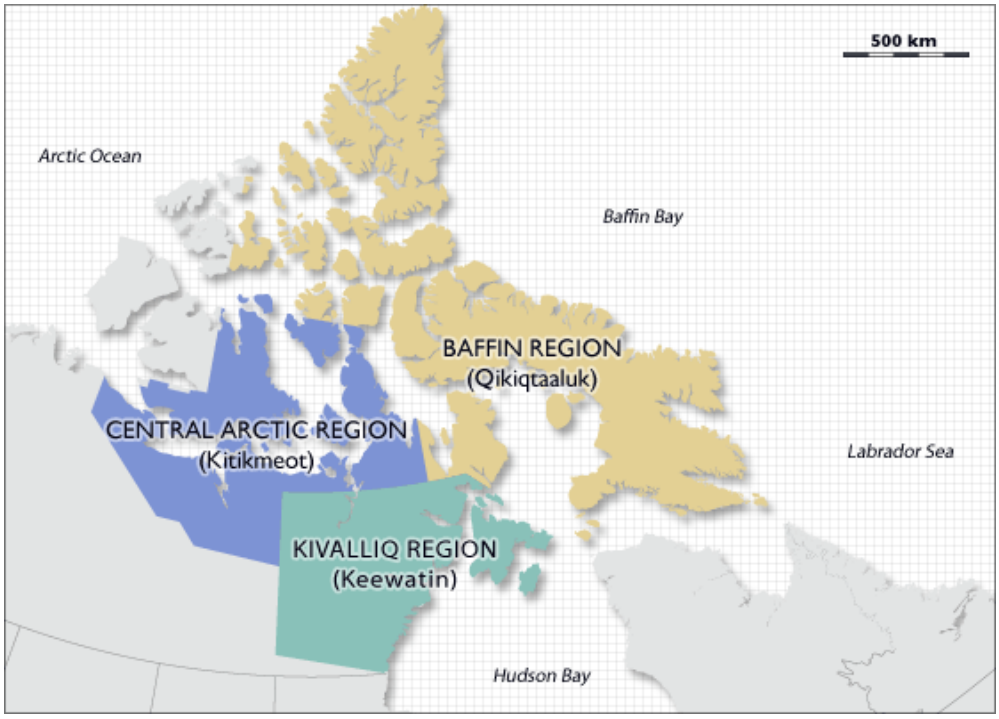
Map 2 – Inuit Nunaat



Source: Statistics Canada, *Aboriginal Peoples in Canada in 2006: Inuit, Métis and First Nations, 2006 Census*, Catalogue No. 97-558-XIE.

(131) Ibid.

Map 3 – Nunavut's Administrative Regions



Source: Library and Archives Canada, http://collectioncanada.ca/inuit/020018-1601-e.html.

Participants at our meetings frequently reminded the Committee that the federal government had in fact relocated Inuit families from northern Quebec and Pond Inlet to Resolute Bay and Grise Fiord (Canada's two northernmost communities) to bolster Canadian sovereignty in the High Arctic during the Cold War in the 1950s.

The Honourable Patterk Netser, Nunavut's Minister of Economic Development and Transportation, made a point of noting in his presentation that Canada's northern waters continue to support and sustain a way of life that is based largely on marine activities and resources.

> Long before our communities were settled people here set out in boats like umiaks and kayaks which are made out of seal skin to make their livelihood from the sea. This type of harvesting continues today and we expect this way of life to continue indefinitely. We consider the fishery to be one of the foundations of our economy. It was in the past, it is now, and will certainly be in the future.

The traditional use of marine resources, such as plants, whales, seals and other marine mammals, is vital to the survival and welfare of Inuit and essential to the preservation of their identity and the continuation of their way of life and culture. Ice platforms continue to be

used for fishing and hunting: Inuit and northerners rely on flat, solid first-year ice for travel and food in winter. In theory, Canada, in defending its sovereignty claim against other nations in regard to shipping in the Northwest Passage, could invoke the long unbroken history of Inuit usage of the lands and waters.(132)

In his testimony, K. Joseph Spears noted that when Canada drew straight baselines around the Canadian Arctic Archipelago in 1985, declaring all waters within the baselines to be Canada's internal waters (in response to the crossing of the US icebreaker *Polar Sea* through the Northwest Passage without Canada's prior consent), the policy of the government was to maintain the natural unity of "land, sea and ice" to preserve Canada's sovereignty. He quoted from then Secretary of State for External Affairs, the Right Honourable Joe Clark, who stated:

> Canada's sovereignty in the Arctic is indivisible. It embraces land, sea and ice. It extends without interruption to the seaward-facing coasts of the Arctic islands. These islands are joined and not divided, by the waters between them. They are bridged for most of the year by ice. From time immemorial Canada's Inuit people have used and occupied the ice as they have used and occupied the land.(133)

NTI president Paul Kaludjak noted that when Canada drew the straight baselines, the Department of Justice relied, in part, on Inuit occupancy to support this legal move – a fact reflected in Article 15 of the Nunavut Land Claims Agreement, which states that: "Canada's sovereignty over the waters of the arctic archipelago is supported by Inuit use and occupancy." Also, more broadly, the NLCA's Preamble states that the rights and benefits Inuit receive through the NLCA are "in recognition of the contributions of Inuit to Canada's history, identity and sovereignty in the Arctic." The presence of Inuit in the North, and Canada's ability to assert sovereignty and control over northern waters, are therefore "glued together" according to Mr. Kaludjak.

John Merritt, Senior Policy Advisor of Inuit Tapiriit Kanatami, warned that if Canada intends to rely on Inuit use and occupation of marine areas as an argument, the international community will expect Canada to have honoured its commitments to the Inuit.

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(132) John Merritt, *Committee Proceedings*, 15 April 2008.

(133) The Right Hon. Joe Clark, Statement to the House of Commons, Hansard, 10 September 1985.

> The concept of the honour of the Crown, which the Supreme Court of Canada reminds the federal government is relevant on a regular basis in court decisions, can be served only if there is a genuine partnership with Inuit, and that means respecting land claims agreements and developing a northern strategy in some partnership with Inuit, not leaving Inuit on the margins.

8. Conclusion and Recommendations

Canada's position is that the waters of the Northwest Passage are internal waters over which it enjoys full sovereignty. That sovereignty includes the right to unilaterally pass laws and regulations to protect Canadian interests, including those of our northern residents and particularly the Inuit – the people who have long inhabited the lands, and lived and worked on the ice in Canada's North.

So far, the presence of ice hazardous to international shipping has protected Canadian and Inuit interests. But the testimony heard by the Committee strongly suggests that, in view of the warming Arctic climate and receding polar ice, maintaining the status quo is no longer a viable long-term option for Canada. The effects of climate change will open up Arctic waters and the Northwest Passage to maritime traffic.

The Committee heard evidence that oil and gas, mining and other activities in the Arctic will expand. No one knows exactly when this will happen, but the Government of Canada needs to plan and prepare for the eventuality. In so doing, Canada must retain full control over shipping in order to adequately protect the exceptionally fragile marine environment and Canadian security interests.

With the exception of Hans Island, there is broad international recognition that the islands of the Arctic Archipelago are exclusively under Canada's jurisdiction; but this is not the case with respect to their surrounding waters. Canada faces a potential challenge to its sovereign right to control shipping activity in the Northwest Passage. Not all countries agree with Canada's position that the Northwest Passage is part of our internal waters and thus a national – not international – sea route requiring Canada's consent for foreign use. Canada will need the capacity to exercise control over and defend our sovereignty in the Northwest Passage if those who call Canada home in the North are to have their interests and values protected.

The United States considers the waterway to be an international strait subject to the right of transit passage, a right nearly as extensive as on the high seas under international law. The United States might be more inclined to recognize Canada's legal claim if Canada had the tools to monitor and enforce its laws and regulations. Its position is based on a criterion of potential use, rather than one of actual use.

Although no country has yet taken Canada to court over the matter, Canada should nonetheless take any opportunity to negotiate acceptance of our position with other countries, in particular the United States. If adequate control measures are not taken with respect to unauthorized shipping activity, the waterway could become progressively "internationalized" and subject to the right of transit passage, with potentially serious environmental and security consequences.

Oil and gas development is now regarded as a year-round activity. Receding ice and new technologies, such as double-bowed tankers, increase the likelihood that one day oil and liquefied natural gas will be transported through the Northwest Passage by ship. Increased maritime activity will bring greater environmental risks. Canada therefore needs to ensure that international standards and regulations conform to domestic standards, and work within the Arctic Council and the International Maritime Organization to this end.[134]

The coastal states in the Arctic will continue to pursue their own interests in the region. The extent to which they will lay claims to the continental shelf beyond their 200-nautical-mile EEZs will be a matter to be determined by the Commission on the Limits of the Continental Shelf in accordance with specific rules laid down in the LOS Convention. However, in considering submissions, the CLCS does not make a determination, final or otherwise, other than to say that a country's submission seems reasonable from a scientific standpoint. Disputes concerning overlapping claims could therefore arise.

The historic and continued use by Inuit of the Arctic's resources on land, at sea and on the ice for fishing, hunting and trapping can be relied on to reinforce Canada's sovereignty claim to the waters of the Northwest Passage. As Michael Turner (and other witnesses) pointed out to the Committee, it is Canada's "ability to live in and use the territory, lands, waters and ice of the Arctic that is so important in making a case later on," should Canadian sovereignty be challenged. Inuit must be brought into the process of developing a strategy for the North, in an active partnership that will meet their economic and social needs while also buttressing Canada's sovereignty claim.

Arctic issues cut across a number of federal government departments. In developing an integrated Northern Strategy, an "all-of-government" approach is needed, with the involvement of northern residents and the territorial governments.

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(134) Canada and Russia have stricter requirements for shipping operations in Arctic waters than international standards set out by the International Maritime Organization. Transport Canada, "Canada Moves to Further Protect Its Sovereignty and Safeguard Arctic Waters From Pollution," News release, 3 December 2008.

Recommendation 1:

The Committee recommends that Canada uphold its position that the waters of the Northwest Passage are its internal waters, and that Canada should be prepared to defend any legal challenge.

Recommendation 2:

The Committee recommends that Canada develop a much stronger year-round, national presence and enforcement capability to show the world that Canada is serious about controlling the Northwest Passage, protecting Canadian interests and Canada's northern residents, and making the waterway a safe and efficient shipping route.

Recommendation 3:

The Committee recommends that the Government of Canada consider Goose Bay, Labrador, as a sub-Arctic staging area for the coordination and support of Coast Guard, fisheries, search and rescue, surveillance and other Arctic activities.

Recommendation 4:

The Committee recommends that the Nunavut Marine Council (Part 4, Article 15.4.1 of the 2003 Nunavut Land Claims Agreement) be created as a forum for priority setting and planning, and as a practical means to enhance Canada's sovereignty in marine areas.

Recommendation 5:

The Committee recommends that Canada assume a leadership role in promoting international cooperation on: (a) issues relating to continental shelf claims; and (b) the development of a mandatory common code relating to the construction, manning and equipment of all vessels operating in the Arctic Ocean equal to Canada's domestic standards.

Recommendation 6:

The Committee recommends that Canada demonstrate its commitment to international co-operation within the Arctic Council by re-establishing the position of Ambassador for Circumpolar Affairs (which was eliminated in 2006).

Recommendation 7:

The Committee recommends that the Department of National Defence make the Canadian Rangers an integral part of the Canadian reserves and provide them with marine capability.

Recommendation 8:

The Committee recommends that the Government of Canada establish an Arctic Strategy Advisory Committee, lead by Indian and Northern Affairs Canada, to monitor and to advise in the development and implementation of an effective and integrated strategy for the North. The new Arctic Strategy Advisory Committee should comprise representatives from the federal government departments and agencies with a mandate in the Arctic, with particular emphasis on the Coast Guard, the various Aboriginal/Inuit groups in the region, and the three territorial governments.

B. The Canadian Coast Guard

1. Projecting and Consolidating Sovereignty

The Canadian Coast Guard has a critical role to play in demonstrating to the world Canada's sovereignty over the waters within the Arctic Archipelago, and its sovereign rights to the seabed inside and beyond the 200-mile Exclusive Economic Zone. The testimony heard by Committee strongly suggested that Canada would be in a much stronger position to argue that the Northwest Passage is part of its internal waters by showing more active management in that area.

Initiatives to increase the presence and capacity of the Canadian Forces in the Arctic, though important, are only part of the solution with respect to the challenges faced by Canada in the Arctic.[(135)] K. Joseph Spears, for instance, believed that Canada's sovereignty in the North cannot be defended solely through military force, and that Canada should exercise its jurisdiction by using "all its sovereign powers to control, monitor, regulate and enforce its laws over international shipping."

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(135) A Sun Media-Léger Marketing online poll released in February 2007 found that a majority of Canadians (52%) believed that Canada's sovereignty in the Arctic should be asserted "through international legal channels." Another 18% thought Canada should be "stationing troops at strategic northern points," while 12% preferred "continuing with existing practices." The online poll surveyed a representative national sample of 3,092 adult Canadians from 27 December 2006 to 5 January 2007. The results were considered accurate within 1.8 percentage points, 19 times out of 20. Kathleen Harris, "Tighten Northern Grip: Poll," *The Ottawa Sun*, 23 February 2007, p. 6.

Former CCG Deputy Commissioner Michael Turner made the point that Canada's ability to maintain an active presence in the Arctic – the capability of government organizations, including the CCG, to deliver programs and services in the region, including those of the Canadian Coast Guard – is an extremely important aspect of sovereignty. Sovereignty, he argued, is based on "the 80/20 rule": the ability of a country to demonstrate the effective management and administration of its territories and the waters over which it claims jurisdiction represents 80% of sovereignty, with the other 20% being the ability to defend and repel an aggressor nation.

Dr. Louis Fortier noted that future challenges faced by Canada in the Arctic will involve more than patrolling or conducting military surveillance. He underlined the fact that several major mining projects are being developed in the Arctic, which will require Coast Guard icebreaking support and other services. In Nunavut, the Committee learned of an imminent boom in the Kitikmeot region (the central/western part of the territory, just south of Bathurst Inlet), and of an immense iron ore project in northern Baffin Island (the Mary River Project).[(136)] Waguih Rayes, General Manager of Desgagnés Transarctik Inc. (a sealift provider), was of the opinion that demand for Coast Guard escorts through ice would soon outstrip the agency's ability to deliver such services.

Ice-free northern waters are expected to increase vessel traffic in the Arctic and to stimulate oil and gas exploration, production and delivery. A number of participants at our meetings, such as ICC Canada president Duane Smith, felt that a greater Coast Guard presence in the Arctic would be needed to give other countries "a clear indication" of Canada's sovereignty in the region. It was also impressed on us that virtually all of Canada's ice operations capabilities are now with the Coast Guard (a result of government decisions taken over 50 years ago).[(137)] Testimony indicated that experienced ice captains are considered one of the Coast Guard's most valuable assets.

In performing its considerable and critical work in the Arctic, the Coast Guard's red and white icebreakers and helicopters are arguably Canada's most visible federal marine presence and the most visible symbol of Canada's sovereignty. Many of the challenges faced by

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(136) Over one hundred exploration projects were reportedly active in the territory in 2007, with projected exploration expenditures of approximately $230 million. Capital expenditures for sites already under development reached approximately $185 million. Government of Nunavut, Department of Finance, *Budget 2008: Supplementary Documents*, 20 February 2008, http://www.gov.nu.ca/finance/mainbudgets/feo.pdf.

(137) The Canadian Navy has not operated a fully ice-capable vessel built for operation in the Arctic since 1957.

Canada in consolidating sovereignty are in fact related in various ways to the Canadian Coast Guard. Dr. Donat Pharand suggested that the agency's important sovereignty assertion role in the Arctic should be part of the Canadian Coast Guard's school curriculum.

2. Current Operations

The Canadian Coast Guard is a national Special Operating Agency of the Department of Fisheries and Oceans. It provides marine safety and environmental protection services to Canadians, and essential at-sea support to other federal government departments and agencies, including the DFO itself.

Each year, from late June to early November, the CCG deploys two heavy icebreakers, four medium icebreakers and one light icebreaker to the Arctic to perform a broad range of important tasks in support of economic and commercial development – escorting ships through the ice-covered waters, keeping navigation channels open, breaking ice for commercial shipping, clearing ice in harbours, and maintaining navigation aids. The vessels deliver supplies to remote settlements and to Environment Canada and National Defence sites, and provide annual icebreaking support to the US Military Sealift Command at Thule, Greenland.(138) They operate in a harsh climate, in some of the most challenging ice conditions in the world. The Coast Guard's icebreakers are often the first ones into the Arctic each shipping season, and the last to leave.(139)

The Coast Guard also provides considerable support for scientific activity. In this respect, DFO depends heavily on its fleet. Examples of important DFO-specific scientific work supported by the agency include:

- stock assessments of marine mammals, fish, and emerging fisheries in Nunavut;
- aquatic ecosystem assessments, including examination of the impact of various development activities;
- hydrographic surveys for the production of navigational products and services (to support an anticipated increase of ocean-going transport in the Arctic); and
- bathymetry in support of Canada's submission to the United Nations Commission on the Limits of the Continental Shelf.(140)

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(138) In return, the US provides icebreaker support for Canadian missions in the western Arctic.

(139) George Da Pont, Commissioner, Canadian Coast Guard, *Committee Proceedings*, 5 February 2008. Three vessels also operate on the Mackenzie River and Beaufort Sea delta.

(140) Ibid.

Canadian and other scientists make use of Coast Guard vessels as platforms for a wide variety of scientific missions pertaining to climate change and the northern environment. "Canada's Three Oceans" for example, the largest of the DFO-led IPY projects, employed the *CCGS Sir Wilfrid Laurier* and the *CCGS Louis S. St-Laurent* to cover 15,000 square kilometres of ocean over a two-year period. The goal was to study how the Pacific, Arctic and North Atlantic oceans interconnect and to establish a "scientific fence" around all of Canada's ocean waters in support of Canadian sovereignty in the Arctic. The *CCGS Amundsen*, Canada's first dedicated Arctic science icebreaker (formerly known as the *CCGS Franklin*) was also used to facilitate three major federal scientific initiatives: the Inuit Health Survey (which uses the icebreaker as a floating medical centre), the Circumpolar Flaw Lead System Study, and the ongoing work of ArcticNet.

CCG icebreakers also provide logistical and platform support to the RCMP and the Canadian Forces. The Coast Guard's experience and expertise are recognized worldwide, and most of its commanding officers have over 20 years' experience in the Arctic.(141) Close to 70 employees in DFO's Central and Arctic Region are assigned to northern operations on a seasonal basis.(142)

Icebreakers are not the Coast Guard's only presence in the Arctic, however. Other essential services are delivered in Canada's northern seaways, which are used for the resupply of communities, the export of raw materials, tourism, and science-related activity. These services include:

- Marine Communications and Traffic Services (MCTS), including radio operations, to help ensure the safety of people at sea and the protection of the environment through effective traffic management and efficient movement of shipping;

- Aids to Navigation, to help ensure vessels' safety by reducing the risks of grounding and collision. The Coast Guard places and maintains over 1,500 visual and aural aids to navigation on the Mackenzie River from Great Slave Lake to Tuktoyaktuk, over 300 across the Arctic Ocean and some 30 or so in Hudson Bay and James Bay. Navigation safety information is provided through the publication of monthly Notices to Mariners, lists of lights and buoys, and an annual edition of *Notice to Mariners*;

- Search and Rescue (SAR), typically involving pleasure craft or local community vessels; on average, there are 11 marine SAR cases per year;

- Environmental Response, given that the Coast Guard has the primary response lead for pollution incidents or marine spills north of 60 degrees;

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(141) Ibid.

(142) CCG, *Business Plan 2008–2011*, June 2008, p. 70, http://www.ccg-gcc.gc.ca/eng/CCG/Publications.

- Waterways Management, which includes forecasting water levels during the summer navigation season on the Mackenzie, Liard and Peel rivers (in the western Arctic); and

- cargo management and coordination for Iqaluit (Nunavut), an important transshipment and resupply route.(143)

A national review of levels of service to clients, including all Coast Guard services in the Arctic, is ongoing. In June 2008, the Minister of Fisheries and Oceans informed the Committee of his decision to implement a three-year moratorium on marine navigation service fees for specified Arctic transits, including the Arctic sealift, in order to reduce the cost of transportation for northern residents who rely on marine resupply.(144)

3. Renewing Canada's Aging Icebreaking Fleet

The Canadian Coast Guard is an important element of Canada's projection of sovereignty in the Arctic. Its role in the Arctic, a region of tremendous potential, will become ever more critical in the coming years. Canada's icebreaking fleet, however, will not be adequate once shipping increases.

Each year, Coast Guard icebreakers are deployed to the Arctic in June. Because they are incapable of operating there in winter, they are redeployed south by early November. Although these vessels are maintained in excellent condition, Dr. Louis Fortier, ArcticNet's scientific director, pointed out that they were originally built to operate in the St. Lawrence Seaway, not the Arctic Ocean.

According to former CCG Deputy Commissioner Michael Turner, Canada's vessels are less powerful than the three icebreakers operated by the US Coast Guard. Even those US vessels have limited capability: Dr. Scott Borgerson of the [US] Council on Foreign Relations stated that the United States is ill-equipped to exert a significant presence in the Arctic because of the advancing age of its icebreakers.(145)

At our meetings, other countries were said to operate at least one heavy research icebreaker, including Germany, Sweden, China and, soon, South Korea.

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(143) George Da Pont, *Committee Proceedings*, 5 February 2008.

(144) Previously, marine navigation service fees applied to Canadian commercial ships transiting to and from waters north of 60, but no fees were charged when voyages took place entirely north of 60. Minister of Fisheries and Oceans, Letter to the Chair of the Standing Senate Committee on Fisheries and Oceans, 17 June 2008.

(145) Not surprisingly, the February 2008 "Model Negotiation on Northern Waters" agreed to recommend that Canada and the United States "accelerate the acquisition of new icebreakers."

With its fleet of nuclear and conventional fuel-powered heavy icebreakers, Russia is by far the best-equipped icebreaking nation in the world. For instance, *NS Yamal*, launched in October 1992, is 10 times larger than the *CCGS Amundsen*, Canada's research icebreaker. Russia, the Committee learned, has had the capacity to keep the Northern Sea Route (along the Siberian coast) open for domestic navigation since the Soviet era, and we were advised that Russia's icebreaking capability is what empowers it to make a claim for a large part of the Arctic Ocean.(146)

At present, the Coast Guard has a limited capacity to navigate in Canada's Arctic. As sea ice recedes and navigation increases, greater icebreaking capability will be required.(147) The Committee was advised that as the polar cap breaks up, what multi-year ice is left in the Arctic Ocean will continue to shift toward the western channels of the Canadian Arctic Archipelago, moved by winds and currents known as the Beaufort gyre.

> The longer thaw season of a warmer climate will promote a longer period of weakness in the pack, resulting in more rapid drift of Arctic Ocean multi-year ice through the Arctic Archipelago and into the Northwest Passage. This will tend to maintain, or even increase, the hazard to shipping in the Northwest Passage as long as there is a supply of ice from the Arctic Ocean.(148)

In the future, Canada will need heavy icebreakers capable of operating year-round in the Archipelago and on the extended continental shelf.

In February 2007, the Auditor General of Canada reported that the estimated useful life of an icebreaker was 30 years and that Canada's icebreakers would be between 40 and 48 years old when they reach their currently scheduled replacement date.(149) The February 2008 Budget announced $720 million in funding to replace the 40-year-old flagship *CCGS Louis S. St-Laurent* with a new polar icebreaker (to be named after the Right Honourable John G. Diefenbaker) with greater capabilities and able to operate in the Arctic for nine months of the year. Participants at our meetings welcomed the announcement, but also wondered if there would be sufficient political follow-through on the project. The Committee was frequently reminded that an

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(146) Dr. Louis Fortier, *Committee Proceedings*, 13 May 2008. Operating on close to 100,000 horsepower, Russia's nuclear-powered icebreakers are able to cruise at about 11 knots in three metres of ice.

(147) Ibid.

(148) Natural Resources Canada, *From Impacts to Adaptation: Canada in a Changing Climate 2007*, 2008, Chapter 3, Northern Canada, sections 4.5 "Transportation," and 4.5.1 "Marine Traffic."

(149) Auditor General of Canada, *2007 February Status Report*, Chapter 4, "Managing the Coast Guard Fleet and Marine Navigational Services – Fisheries and Oceans Canada," 13 March 2008, paragraph 4.78.

all-season icebreaker, the *Polar 8*, had been promised in 1985 but was later cancelled. Had it been built, that vessel would be performing superbly today.[150]

Built in 1969, the *CCGS Louis S. St-Laurent*, the Coast Guard's most capable icebreaker, is scheduled to be decommissioned in 2017. Former CCG Deputy Commissioner Michael Turner indicated that the ship is at the point where replacement is essential if Canada's presence in the Arctic is to be taken seriously. In Dr. Fortier's view, a new polar-class icebreaker is long overdue; moreover, two polar-class icebreakers are really needed "for a circum-annual presence over the entire Canadian archipelago and the deep Arctic basin." A number of participants at our meetings felt that Canada needed more than one new icebreaker.

Witnesses pointed out that the rest of the fleet is also aging (see Table 1), and that Canada should therefore be planning for the replacement of the remaining vessels as well. Canada's newest icebreaker, the *CCGS Henry Larsen*, is now over 20 years old. The *CCGS Terry Fox*, built in 1983 and the only icebreaker other than the *CCGS Louis S. St-Laurent* with true Arctic capability, was said to be fast approaching the end of its operational life, necessitating its replacement within the next 10–15 years. The science icebreaker *CCGS Amundsen* will be reaching the end of its life span in less than 15 years.[151]

According to CCG Commissioner George Da Pont, it takes considerable lead time to replace an icebreaker: 8–10 years from decision to replacement. They are complex, unique ships.

Table 1 – Heavy and Medium CCG Icebreakers

Icebreaker	Year Built
*CCGS Louis S. St-Laurent**	1969
*CCGS Terry Fox**	1983
CCGS Henry Larsen	1987
CCGS Pierre Radisson	1978
CCGS Des Groseilliers	1982
*CCGS Amundsen***	1979

* Heavy icebreaker.

** Dedicated to science in the summer.

Source: Canadian Coast Guard, "Icebreaking Fleet," http://www.ccg-gcc.gc.ca/eng/CCG/Ice_Fleet.

(150) In response to the US icebreaker *Polar Sea's* crossing of the Northwest Passage in 1985, Canada announced on 10 September 1985 a number of measures to exercise more control over its Arctic waters, including *Polar 8*, an all-season polar icebreaker. The project was cancelled four years later, however, in the name of deficit control.

(151) The Canadian Polar Commission's two-year study on research infrastructure released in June 2008 recommended the replacement of the science icebreaker *CCGS Amundsen*, which will require major refits and science upgrades during the next 15 years, with a new vessel capable of conducting science programs in open ocean and in the waters of the Archipelago. CPC, *Beacons of the North: Research Infrastructure in Canada's Arctic and Subarctic*, 2008, p. 45.

In July 2007, the federal government announced that six to eight new armed, ice-strengthened offshore patrol vessels would be added to the Navy fleet ("Polar Class 5 Arctic/ Offshore Patrol Ships"). The vessels have an estimated acquisition cost of $3.1 billion, and another $4.3 billion will be required for operation and maintenance over their 25-year lifespan. The Navy expects to take first delivery in 2013. Michael Turner, who served many years in the Coast Guard, including several years as Deputy Commissioner and Acting Commissioner, advised the Committee that, although ice-strengthened, the naval patrol ships:

- will be capable of sailing through first-year ice only and will have far less capability than even the lightest of the CCG icebreakers now operating in the Arctic;
- are unlikely to operate in any but the lightest and safest ice conditions, given that Canada's entire complement of marine officers skilled in operations is within the Canadian Coast Guard and a small number of private-sector companies;
- are not expected to have any role in the Arctic outside the navigation season and will end up being used on Canada's southern coasts for most of the year as offshore patrol vessels; and
- of necessity, will be of hybrid design with limited capability in open water.

Canada relies on Coast Guard icebreakers as a primary means of projecting its sovereignty in the Arctic. Understandably, some witnesses were concerned that the government may be reluctant to replace its aging fleet of icebreakers with new vessels, given the significant public expenditure made on the acquisition and operation of the new offshore patrol ships for the Navy.

Witnesses pointed out that even though it does not have an enforcement mandate,[(152)] the Coast Guard has far more experience and expertise in the North than the Navy. The agency also supports Canada's security community by assisting other government departments that do have a direct role. Coast Guard vessels conduct security surveillance and carry officers from Customs, Immigration, the RCMP, DFO and Transport Canada on possible interdiction missions.[(153)] Many participants in our study favoured the use of multi-use

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(152) Unlike its counterpart in the United States, Canada's Coast Guard is a civilian organization and does not have a legislated mandate for enforcement related to maritime security. The enforcement of Canada's maritime sovereignty is the responsibility of the Canadian Navy (the Canadian Forces Maritime Command); the RCMP is responsible for the enforcement of laws in Canada's territorial sea; and DFO fishery officers are responsible for fisheries enforcement in saltwater.

(153) See CCG, *Fleet Annual Report 2006–2007*, section 4.1.4, "Maritime Security Services," http://www.ccg-gcc.gc.ca/eng/CCG/Careers_Our_Service#a4_1_4.

icebreakers as platforms to support the full range of federal government programs in the Arctic, including support for the Canadian Forces. Although he did not advocate the use of force to the degree where military confrontation would result, Dr. Donat Pharand, for example, suggested that Coast Guard vessels be equipped with small armaments capable of giving firm and serious notice to unauthorized foreign vessels if necessary.

According to Michael Turner, the replacement of the rest of Canada's aging fleet with an appropriate number of Arctic-class, multi-mission icebreakers operated by the Coast Guard would be a cost-effective response to Canada's surveillance and sovereignty patrol needs in the Arctic. National Defence personnel, for example, could form a detachment to be carried on-board at certain times. Vessels could be armed, but the weaponry would be under the control and management of National Defence. Other countries were said to have found effective ways of combining the two responsibilities.

Mr. Turner noted that, elsewhere in Canada, the Coast Guard appeared to be returning to the fuller, multi-mission, "all-of-government" support role for which it was originally intended. For instance, funding had been approved to provide new vessels as platform support for the RCMP in the area of maritime security on the Great Lakes, and the Coast Guard would be one of the agencies supporting the National Defence–managed Marine Security Operations Centres on the east and west coasts. As well, the agency already provides considerable platform support for scientific research in the Arctic.

The consensus among industry, researchers and northern communities is that all new icebreakers should be multi-tasked ships, according to Dr. Louis Fortier.[(154)] Dr. Michael Byers was also very much in favour of multi-purpose Coast Guard platforms.

> The emphasis has to be on the multi-purpose nature of the platform. It makes no sense to invest in an Arctic purpose-built vessel and give it to the navy because the navy will not use it in that multi-purpose way, not because the navy is not a very competent organization. I have great regard for the Canadian Forces. However, the Coast Guard is the agency that does the multi-purpose exertion of Canadian maritime ability in the North. They do it very well with what they have, and they will do it even better when they get the equipment they need.

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(154) The Canadian Polar Commission's study released in June 2008 looked at the status of research facilities and logistics in the North. It concluded that "ship platforms … would provide a highly significant demonstration of sovereignty – far more than any amount of activity at a single location." CPC, *Beacons of the North: Research Infrastructure in Canada's Arctic and Subarctic*, 2008, p. 36.

In Dr. Rob Huebert's view, the Coast Guard needs the capability to provide "a pan-Canadian response" in the Arctic, and both icebreakers and offshore naval patrol vessels are absolutely needed, for two reasons. First, ice conditions are expected to vary considerably in the Canadian Arctic from year to year. In some years, the ice cover will be substantial. Second, the involvement of both the Coast Guard and the Canadian Forces in the Arctic will bring northern issues and policy to the greater attention of Cabinet.

> [If] we are serious about Arctic sovereignty, control of our Arctic regions, we have to ensure that our instruments and those who are maintaining them are properly funded. We have not been serious on that. … [W]e are facing an Arctic situation for which we no longer have the luxury of allowing [the Coast Guard] to proceed on a shoe-string budget. … There are changes of such magnitude that even if we did not want to spend the required money, the Arctic would find us and we would need to spend the money reactively.

4. NORDREG

The further diminishment of multi-year ice is expected to make the Arctic's resources much more accessible to industry, leading to more shipping. Witnesses warned that Canada needs to prepare for the eventuality that other nations will want to use the Northwest Passage in order to save time and reduce fuel costs.

The environmental risks associated with increased vessel traffic include the introduction of invasive species from the emptying of ballast tanks, and oil spills. Climate change and new technologies, such as double-bowed oil tankers, increase the likelihood that one day oil and gas will be shipped by tankers in the region. International shipping will develop and drive issues, "whether we like it or not."[(155)] A great deal of uncertainty lies ahead, according to Dr. Huebert:

> We will have winters where the ice conditions will be horrific. We will have years in which the ice conditions are great. We will have years when we will say, "We did not realize the South Koreans were spending billions of dollars building this new capacity that all of a sudden will show up on Canadian doorsteps. We did not know the Japanese were interested in terms of exploration." They will be up there. All of a sudden, we will have this traffic.

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(155) K. Joseph Spears, Brief submitted to the Committee, 27 May 2008.

Oil spills are especially worrisome in the Arctic, where the ecosystems upon which Inuit depend for their livelihoods, traditional diets and survival are exceptionally sensitive and fragile. Paul Kaludjak, President of Nunavut Tunngavik Incorporated, called in his testimony for "full and complete" Canadian sovereignty over the Northwest Passage to ensure that rigorous shipping standards and procedures are applied. Participants at our meetings frequently mentioned the *Exxon Valdez* disaster off Alaska in 1989 as a reminder of what could happen in the absence of such standards.

Transport Canada oversees the marine-pollution prevention, preparedness and response regime as a whole.(156) The Department is responsible for a number of Acts dealing with Arctic navigation issues;(157) of these, the main ones related to marine safety are the *Canada Shipping Act, 2001* (which establishes requirements for construction, equipment and operation of ships in Canadian waters) and the *Arctic Waters Pollution Prevention Act* (which supplements the *Canada Shipping Act, 2001* in Arctic waters). Coast Guard services assist in safe navigation, and ship owners are responsible for having qualified crews and the necessary experience to operate safely in ice-covered waters.(158)

As the following excerpt from the AWPPA's preamble makes clear, the Act was passed in 1970 to protect the unique nature of the marine environment(159) and preserve the traditional way of life of Inuit:

> Whereas Parliament recognizes that recent developments in relation to the exploitation of the natural resources of arctic areas, including the natural resources of the Canadian arctic, and the transportation of those resources to the markets of the world are of potentially great significance to international trade and commerce and to the economy of Canada in particular;
>
> And whereas Parliament at the same time recognizes and is determined to fulfil its obligation to see that the natural resources of the Canadian arctic are developed and exploited and the arctic waters adjacent to the mainland and islands of the Canadian arctic are navigated only in a manner that takes cognizance of Canada's responsibility for the welfare of the Inuit and other inhabitants of the Canadian arctic and the preservation of the peculiar ecological balance that now exists in the water, ice and land areas of the Canadian arctic … .

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(156) Since December 2003, the policy functions related to pollution prevention and response, as well as navigable waters, pleasure craft, and marine navigation services, have been with Transport Canada.

(157) Transport Canada is responsible for six major Acts when dealing with Arctic navigation issues: the *Canada Shipping Act, 2001*, the *Navigable Waters Protection Act*, the *Marine Transportation Security Act*, the *Marine Liability Act*, the *Coasting Trade Act*, and the *Arctic Waters Pollution Prevention Act*.

(158) William J. Nash, Director General, Marine Safety, Transport Canada, *Committee Proceedings*, 15 May 2008.

(159) K. Joseph Spears, *Committee Proceedings*, 27 May 2008.

The AWPPA applies in waters up to 100 nautical miles from shore, a distance that Transport Canada officials said takes in most shipping activity north of 60 degrees. The AWPPA was described to the Committee as a zero-tolerance Act (no person or ship shall deposit or permit the deposit of waste of any type in Arctic waters, except where explicitly authorized). The AWPPA regime includes two key sets of regulations.(160)

First, there are the Arctic Waters Pollution Prevention Regulations, which govern such matters as the deposit of domestic and industrial waste, certificates of insurance that ship owners or operators must provide, and the limits of liability for ships with insurance. Second are the Arctic Shipping Pollution Prevention Regulations, which deal with such matters as the construction standards for ships in 16 different Shipping Safety Control Zones (each zone having an entry and exit date for various ship types and vessel ice classes),(161) bunkering stations, special certificates that owners or operators must obtain before sailing through certain Arctic waters, the use and qualifications of ice navigators, supplies of fuel and water, and authorizations and standards for sewage from ships.(162)

Within the Shipping Safety Control Zones, the Coast Guard has operated the Arctic Canada Traffic System known as NORDREG since 1977. The objectives of the system are: (1) the enhancement of safety and movement of traffic; (2) the strengthening of Canadian sovereignty in Arctic waters; and (3) the prevention of pollution of Arctic waters by establishing a method of screening vessels entering Arctic waters with respect to their fitness.(163) The intent is to ensure that vessels comply with the *Canada Shipping Act, 2001* and the AWPPA.

For the Arctic, there are two Coast Guard Marine Communications and Traffic Services Centres, one in Inuvik and the other in Iqaluit. The Centre in Iqaluit, which the Committee visited in June 2008, operates from mid-June until mid-November, at which time services are maintained from St. John's, Newfoundland. MCTS is responsible for monitoring

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(160) William J. Nash, *Committee Proceedings*, 15 May 2008.

(161) For example, in Zone I, which has the most severe ice conditions, Arctic "class 10" vessels can enter any zone at any time of the year, but a "class 3" is allowed transit only from August to 15 September.

(162) William J. Nash, *Committee Proceedings*, 15 May 2008. Because the zone/date system makes little allowance for actual ice conditions, Transport Canada introduced the Arctic Ice Regime Shipping System in 1996, which takes into account ice conditions and a vessel's ice capabilities when determining where it may be permitted to navigate. This was said to allow for more flexibility. Transport Canada's Marine Safety Directorate decides whether vessels are allowed to transit the zones outside the entry dates.

(163) CCG, "Vessel Traffic Reporting Arctic Canada Traffic Zone (NORDREG)," http://www.ccg-gcc.gc.ca/eng/MCTS/Vtr_Arctic_Canada.

international marine radio distress frequencies, for broadcasting marine weather information and notices to shipping, for regulating the movement of commercial shipping, and for screening ships entering Arctic waters to ensure safety.[164]

All vessels over 300 tonnes, Canadian and otherwise, within 100 miles of the nearest Canadian land (in waters where the AWPPA applies)[165] are requested to report to MCTS 24 hours before entering the NORDREG system, which is based in Iqaluit.[166] When vessels report, they are asked about their compliance with the Arctic Shipping Pollution Prevention Regulations. This information is passed on to Transport Canada to determine whether they may be allowed to enter. If a vessel uses the ice regime system, it must report before entering and after exiting the Shipping Safety Control Zones. Staff at the MCTS Centre in Iqaluit informed the Committee that there were 84 vessels in the NORDREG zone in 2007 (for a total of 133 trips), compared to the average for the previous five years of 62 vessels (for a total of 97 trips).

That said, unlike the mandatory systems used in Canada's traffic zones on the Pacific and Atlantic coasts,[167] the NORDREG system is voluntary. In the Arctic, "mariners are encouraged to participate fully to receive the maximum benefit"[168] of services – ice information, ice routing, icebreaker assistance, and search and rescue. Fishing vessels and pleasure craft are exempt, and many such craft do not report their whereabouts.[169] We heard that Scandinavian families in sailboats have been appearing in Canadian waters, and that three of them had actually crossed the Northwest Passage in 2007.

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(164) The functions of MCTS are derived from a regulatory framework based primarily on the AWPPA, the *Canada Shipping Act, 2001*, the IMO, the Safety of Life at Sea Convention, the IMO Search and Rescue Convention, and the International Telecommunications Union – Radio Regulations.

(165) NORDREG includes the waters of Ungava Bay and Hudson Bay south of 60 degrees; the AWPPA excludes the two bays.

(166) Ships engaged in towing or pushing a vessel with a combined weight of 500 tonnes or more, and vessels carrying a pollutant cargo or dangerous goods are also requested to report.

(167) The Atlantic system, known as ECAREG, obliges incoming vessels over 500 gross tonnes to provide detailed safety and security information and to report in at certain checkpoints.

(168) CCG, *Marine Communications and Traffic Services, Radio Aids to Marine Navigation (Pacific and Western Arctic), Annual Edition 2008*, http://www.ccg-gcc.gc.ca/folios/00026/docs/ramn_pacific2008-eng.pdf.

(169) At least eight foreign pleasure craft were attempting to sail the Northwest Passage (a record high) in mid-August 2008. Bob Weber, "Arctic: Ice-Free Passage Draws Sailors," *The Globe and Mail*, 12 August 2008, p. A8.

When Transport Canada and Coast Guard officials were questioned about the voluntary nature of NORDREG, they said that historical data suggest that 98% of all ships notify Canada of their presence.[170] This high level of compliance was attributed to the services that vessels can receive from the Canadian Coast Guard if their positions are made known to Canada.[171] However, when asked about the remaining 2% of vessels that do not comply, the officials said they knew nothing about them (e.g., what they were). When asked whether anything was being done about these ships, the answer was: "That becomes an enforcement and compliance issue. The system is voluntary."[172]

How does Canada know whether foreign vessels are in Canadian waters? Under Canada's *Marine Transportation Security Act* and its regulations, foreign boats greater than 100 gross tonnes are required to report detailed information to Canadian authorities at least 96 hours before arriving in Canada's *12-mile territorial waters*.[173]

A number of participants at our meetings were in favour of making NORDREG compulsory to ensure safety and demonstrate Canadian sovereignty.[174] According to Transport Canada officials, this could be done entirely through the regulatory process (without having to amend legislation). The *Canada Shipping Act, 2001* already empowers Transport Canada to regulate Vessel Traffic Services in all Canadian waters. Officials informed the Committee in May 2008 that departmental work had in fact already started on making NORDREG mandatory, and that all stakeholders in Canada support making the system compulsory. We were advised, however, that there could be some opposition or comments from foreign states, particularly the United States, if Canada were to proceed.[175]

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(170) Steven Troy, Director, Safety and Environmental Response Systems, Canadian Coast Guard, *Committee Proceedings*, 15 May 2008.

(171) William J. Nash, *Committee Proceedings*, 15 May 2008.

(172) Steven Troy, *Committee Proceedings*, 15 May 2008.

(173) William J. Nash, *Committee Proceedings*, 15 May 2008. The Marine Transportation Security Regulations pertain to security issues, not safety and environmental protection. In addition to MCTS, aerial surveillance in the Arctic is conducted by Transport Canada and National Defence. Satellite imagery can also assist.

(174) Article 234 of the 1982 LOS Convention allows coastal states to adopt and enforce non-discriminatory, science-based regulations concerning the prevention and control of marine pollution from vessels, where climatic conditions are severe and ice coverage hazardous, within their entire 200-mile EEZs.

(175) Victor M. Santos-Pedro, Director, Design, Equipment and Boating Safety, Transport Canada, *Committee Proceedings*, 15 May 2008.

In August 2008, the Prime Minister announced the Government of Canada's intention to extend the AWPPA's enforcement zone out to 200 nautical miles *(*from the present 100 nautical miles) in the next sitting of Parliament. New regulations would also require all ships entering Canada's Arctic waters to report to NORDREG (which the Committee recommended in its June 2008 interim report).(176)

On 28 January 2009, Bill C-3, An Act to amend the Arctic Waters Pollution Prevention Act, was introduced in the House of Commons by the Minister of Transport, Infrastructure and Communities and received first reading.(177) It consists of an amendment to the definition of "arctic waters" in the AWPPA to extend the geographic application of the Act from 100 to 200 nautical miles offshore Canadian land north of the 60th parallel of north latitude. The Bill received second reading on 25 February 2009.

5. Environmental Response

As a navigation route, the Northwest Passage would offer international shipping companies significant savings in time and cost. If the sea ice recedes sufficiently, a marine route could be created directly over the North Pole.

More shipping and navigation, and more resource development activity will increase the risk of environmental incidents. At present, only 20% of the Arctic is charted to modern hydrographic standards.(178)

Transport Canada oversees the marine pollution response regime in the Arctic. The Canadian Coast Guard is the lead federal agency for responding to marine spills north of 60 degrees. The agency provides a federal monitoring officer or on-scene commander role, coordinates interdepartmental activities in support of ship-source or mystery spills, has clean-up responsibilities in the Arctic, and maintains a level of preparedness capacity.(179)

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(176) Office of the Prime Minister, "PM Announces Government of Canada Will Extend Jurisdiction Over Arctic Waters," 27 August 2008, http://pm.gc.ca/eng/media.asp?id=2248.

(177) The bill is identical to an earlier Bill C-3, which was introduced on 3 December 2008, during the 1st Session of the 40th Parliament, and died on the *Order Paper* when Parliament was prorogued the following day. See Transport Canada, "Canada Moves to Further Protect Its Sovereignty and Safeguard Arctic Waters From Pollution," News release, 29 January 2009, http://www.tc.gc.ca/mediaroom/releases/nat/2009/09-h023e.htm.

(178) K. Joseph Spears, *Committee Proceedings*, 27 May 2008.

(179) George Da Pont, *Committee Proceedings*, 5 February 2008.

The federal government, through Budget 2007, provided $2.2 million (over three years) to the Coast Guard to ensure Canada has a capacity to respond to oil spills in the Arctic. In carrying out this initiative, the agency will: assess Canada's ability to respond to oil spills in the Arctic; identify areas in the Arctic at high risk for oil spills; purchase the equipment and first-response systems needed to contain and recover spilled oil; and engage the various communities in the North.[180]

So far, the Coast Guard's capacity to deal with spills in the Arctic has been largely untested.[181] With respect to infrastructure, we learned that there are 14 environmental response locations situated across the Arctic, 10 of which are community depots where equipment (e.g., booms, skimmers) is stockpiled. More equipment is stored in three large depots located in Tuktoyaktuk, Iqaluit and Churchill (which is south of 60 degrees), and significantly more at an environmental response base in Hay River (Northwest Territories).[182]

If vessels got into trouble in the Passage or drifted into the Canadian Archipelago, how would Canada respond?

In the case of a major pollution incident, the cleanup effort would obviously be more difficult in the Arctic. Steven Troy, Director of the Canadian Coast Guard's Safety and Environmental Response Systems, noted that response time would depend on the ability to move the equipment in time. Dr. Louis Fortier told the Committee that Canada has "virtually no capacity for rapid, efficient intervention" in extreme ice conditions: if a catastrophe such as the *Exxon Valdez* were to happen near Resolute Bay, for example, nothing could be done to mop up the disaster.

When Commissioner George Da Pont, the Coast Guard's chief executive officer, appeared before the Committee, he said he was personally worried about Canada's level of preparedness in responding to a major incident because of the limited number of Coast Guard vessels capable of operating in ice-covered waters. According to former CCG Deputy Commissioner Michael Turner, the Coast Guard would be hard pressed to respond adequately in the event of a major spill in ice-covered waters because of the operational challenges that would create. With respect to Coast Guard funding, he believed that more attention should be paid to

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(180) The Coast Guard expects to spend $1.25 million on environmental response equipment for the Arctic in 2008–2009. CCG, *Business Plan 2008–2011*, June 2008, p. 47.

(181) Last year, the agency was aware of 28 spills in the previous six years, which ranged from a few to roughly a thousand litres. Steven Troy, *Committee Proceedings*, 15 May 2008.

(182) George Da Pont, *Committee Proceedings*, 5 February 2008.

the agency's capacity to react to a major fuel or cargo spill.[183] Mr. Turner also suggested that the Coast Guard and DFO, in concert with Transport Canada and Environment Canada, need to assess current capabilities and levels of risk.

Lewis Gidzinski, Infrastructure Research Manager of the Nunavut Association of Municipalities, warned that shipping activity associated with mining in Nunavut needs to be looked at more closely, or else "we will have missed the boat with regard to pollution." Duane Smith, President of ICC (Canada), asked that Inuit be trained in oil spill containment and decontamination, as had been suggested by a working group of the Arctic Council in guidelines dating back to 1996. Spills occur to varying degrees when fuel is transferred to communities, he said, and local people should be trained to contain them. Ron Mongeau, Senior Administrative Officer of the community of Pangnirtung, indicated that the town council would welcome an opportunity to meet with the Coast Guard to discuss preparedness issues.

The Committee learned that the tasks performed by the Canadian Coast Guard have an international component, and that the agency has been working collaboratively on issues with counterparts who face similar operational challenges in other northern countries. For example, at the 2007 inaugural meeting of the newly formed North Atlantic Coast Guard Forum (NACGF), Canada agreed to chair an Environmental Response Working Group. The Committee also learned that the Coast Guard would be participating (in September 2008) in a joint environmental response exercise in Ilulissat (Greenland) with the United States and Denmark, the host country of the 2008 NACGF.[184]

6. Search and Rescue

Obviously, more shipping and navigation, resource development activity and tourism will increase the risk of search and rescue (SAR) incidents. Witnesses considered the ability to provide SAR to be an important means for Canada to demonstrate its commitment to sovereignty in the vast and sparsely populated region that is the Canadian Arctic.

The lead minister responsible for Canada's National SAR Program (NSP) is the Minister of National Defence, but the Canadian Coast Guard is responsible for the marine component of the NSP. The Coast Guard defines SAR as "the search for, and the provision of

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(183) In southern Canada, oil companies fund pollution response equipment depots through a system of levies and train people to operate them. This is not the case in the Arctic.

(184) George Da Pont, *Committee Proceedings*, 5 February 2008. The NACGF is a non-binding and voluntary organization.

aid to, persons, ships or other craft which are, or are feared to be, in distress or imminent danger."[185] The agency performs a number of other SAR-related tasks, including the detection of maritime incidents, the conduct of prevention programs, and the oversight of activities of the Canadian Coast Guard Auxiliary, a volunteer organization that has units in Hay River, Yellowknife, Cambridge Bay, Rankin Inlet, Iqaluit, Inuvik, Port Resolution, and Chipewyan, as well as a new unit in Aklavik.[186]

Joint Rescue Coordination Centres manage the National Defence and the Coast Guard response to air and maritime SAR incidents. The Canadian Forces provide fixed- and rotary-wing SAR aircraft from CFB Trenton and CFS Yellowknife, while the Coast Guard relies primarily on its helicopters and icebreakers (which do not operate year-round in the region).[187]

SAR in the Arctic is not without its challenges. K. Joseph Spears felt that Canada should be very concerned about the increase in the number of commercial polar flights over Canadian Arctic airspace, which he said necessitate increased Canadian SAR capability. Dr. Louis Fortier felt that if a flight-related accident were to happen in the vast Arctic, Canada would have little or no response capability, especially in winter.

Polar tourism is expected to grow in coming years, as awareness of the effects of climate change draws worldwide attention to the Arctic. The likely increase in the number of tourist cruises was frequently mentioned at our meetings, along with the concern that vessels may not necessarily be suited for navigation in Arctic waters. So far, there have been fewer cruise ship excursions in Canadian waters than in Greenland,[188] but their number was said to be increasing each year. Participants at our meetings wondered whether Canada would be able to respond to an incident similar to the sinking of the cruise liner *M/V Explorer* in the Antarctic in November 2007.

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(185) CCG, Maritime Search and Rescue (SAR) in Canada, "National Search and Rescue Program (NSP)," http://www.ccg-gcc.gc.ca/eng/CCG/SAR_Maritime_Sar.

(186) George Da Pont, *Committee Proceedings*, 5 February 2008.

(187) Ibid.

(188) There were 29 sailings to the communities of Resolute Bay, Pangnirtung, Qikiqtarjuaq, Pond Inlet, Grise Fiord, Kimmirut, Cape Dorset and Iqaluit in 2007. Government of Nunavut, Department of Finance, *Budget 2008: Supplementary Documents*, 20 February 2008, p. 16. That year, there were reportedly over 200 cruise ship voyages around Greenland, up from 27 in 2004. Andrew C. Revkin, "Experts Urge US to Increase Icebreaker Fleet in Arctic Waters," *The New York Times*, 17 August 2008, p. 6. Greenland expected some 55,000 tourists in 2008 in vessels that can accommodate more than 2,000 passengers. Bob Weber, "Cruise Ships Are the New Kids on the Ice Block in Eastern Arctic," *The Globe and Mail*, 18 August 2008, p. A5; Jane George, "Nunavut Cruise Traffic Jumps in 2008," *Nunatsiaq News*, 18 July 2008, http://www.nunatsiaq.com/test/archives/2008/807/80718/news/nunavut/80718_1373.html.

ICC (Canada) president Duane Smith indicated that the lack of infrastructure in the Arctic was a crucial SAR issue. Mr. Spears felt that SAR would in future require community involvement, staging areas throughout the Arctic, and dedicated aircraft. Ron Mongeau, Pangnirtung's senior administrative officer, described the situation in his community as follows:

> [W]e lack the basic infrastructure to address major incidents if they were to happen. If a cruise ship ran aground at the mouth of the fjord, we would have a difficult time to go out there and adequately rescue the people. … The Coast Guard does not have a presence close enough, I believe, to provide anywhere near an immediate response.

7. Political Support and Future Role

Witnesses described the Coast Guard as having been "an orphan" within the federal bureaucracy – inadequately supported and funded over successive administrations. Canada will in future need to ensure that the agency has the capacity, tools and equipment to do the job for which it is mandated.(189)

The history of what is now known as the Canadian Coast Guard dates back to the Department of Marine and Fisheries in 1867.(190) It moved to the Department of Transport in 1936, and then to DFO in 1995. In December 2003, the policy functions related to pleasure craft, marine navigation services, pollution prevention and response, and navigable waters were shifted back to Transport Canada. In April 2005, the Coast Guard became a Special Operating Agency within DFO to affirm its role as a national institution, to allow the agency more autonomy and operational flexibility, and to ensure that the fleet provides services to its government clients, which include National Defence, Environment Canada, the RCMP, DFAIT, Transport Canada, Natural Resources Canada, and the Natural Sciences and Engineering Research Council of Canada.(191)

Staffing issues will present a challenge in the coming years. CCG Commissioner George Da Pont indicated to the Committee that little recruitment had taken place since the merger with DFO in 1995, and that attracting new people was difficult because of domestic and worldwide competition for well-trained mariners. With nearly a quarter of experienced CCG marine personnel expected to retire in the next five to seven years, the Commissioner said

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(189) The mandate of the Canadian Coast Guard is stated in the *Oceans Act* and the *Canada Shipping Act, 2001*. See CCG, "Mission, Vision and Mandate," http://www.ccg-gcc.gc.ca/eng/CCG/Mission.

(190) CCG, "History," http://www.ccg-gcc.gc.ca/eng/CCG/History.

(191) CCG, *Business Plan 2007–2010*, 1 June 2007, p. 42, http://www.ccg-gcc.gc.ca/folios/00018/docs/Business_Plan_v19-eng.pdf.

there could eventually be a shortage of qualified people to operate Coast Guard vessels,[192] and that one aspect of future recruitment will be to target northerners and Aboriginal people.[193]

In his testimony, former Deputy CCG Commissioner Michael Turner talked about the difficulties encountered in trying to amalgamate the Coast Guard with DFO, two organizations having very different structures and corporate cultures. DFO and Coast Guard management tended to take a narrow view of the Coast Guard's role over the decade that followed the 1995 merger. The focus was on cost reduction and efficiency; a consequent lack of funding resulted in fleet tie-ups. The larger concept of a Coast Guard with multi-mission capacity, he said, had been seriously eroded during this period.

The Committee heard that the federal government had at one point considered moving the Coast Guard to National Defence. In 2006, the Standing Senate Committee on National Security and Defence recommended that the agency be transferred to the Department of Public Security and Emergency Preparedness Canada.[194]

In Dr. Rob Huebert's opinion, the issue is not about where to place the Coast Guard; rather, it concerns political support and funding. The agency, he said, is so good that it always figures out a way of doing more with less; in some ways, its professionalism is its own worst enemy. He pointed out that the Coast Guard has no outside champions or a community of interests to defend its role in safeguarding Canadian values and interests in the Arctic. On defence issues, for example, the federal government established the Security and Defence Forum in 1967. The Forum links National Defence and the Canadian Forces with the academic community, helping to establish a body of Canadian expertise and independent capability in analyzing defence-related issues. Another example given was DFAIT, which had been effective in fostering communities of interest in the areas of human security and peacekeeping.[195] There is no counterpart for the Canadian Coast Guard.

Only recently has it been recognized that the Coast Guard needs to be rebuilt. The 27 January 2009 Budget earmarked $175 million for the procurement of 98 new vessels and to undertake refits and vessel life extensions for 40 aging vessels. The February 2008 Budget

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(192) More than half (53%) of CCG employees work on vessels. CCG, *Canadian Coast Guard Strategic Human Resources Plan 2008–2011*, p. 6, http://www.ccg-gcc.gc.ca/e0003189.

(193) There would appear to be no formal process to train and recruit Inuit for the Coast Guard. Efforts are, however, made to employ individuals from the communities whenever permanent or part-time employment opportunities arise. Steven Troy, *Committee Proceedings*, 15 May 2008.

(194) Standing Senate Committee on National Security and Defence, *Managing Turmoil: The Need to Upgrade Canadian Foreign Aid and Military Strength to Deal with Massive Change*, October 2006, Recommendation 40.

(195) Dr. Rob Huebert, *Committee Proceedings*, 13 March 2008.

announced $720 million in funding to acquire a new polar icebreaker. Between February 2006 and March 2007, more than $750 million in funding was announced for the purchase and maintenance of three offshore fisheries science vessels, one offshore oceanographic science vessel, and 12 midshore patrol vessels.(196)

Dr. Huebert believed Canada to be unprepared for the crises he saw looming in the Arctic. As the expert agency on the maritime situation facing Canada, the Coast Guard needs to formulate a long-term strategic vision to guide it into the future, a vision that – in his view – should come from the agency itself, not from DFO. The Canadian Navy, he said, provided a good example of such "visioning" when in 2001 it produced *Leadmark: The Navy's Strategy for 2020* under the authority of the Chief of the Maritime Staff and Commander of Maritime Command. *Leadmark* considered "Canada's geo-strategic location, interests and history, as well as the dramatic shifts within the international system in the recent past and the uncertainty of the decades to come."(197) The Committee was also made aware that long-term visions and strategies had been articulated by the Air Force and the Army.(198)

> [The Coast Guard] understands full well what it needs to do from a tactical perspective and it executes that outstandingly. However, if you ask the Coast Guard, "What is your strategic vision for Arctic sovereignty?," they would say, "We do not have a vision. We simply enforce and do what we are told." The Coast Guard must be asking, "What is our mission statement above and beyond being the best we can be?"

In Dr. Louis Fortier's view, the Coast Guard needs infrastructure, including icebreakers, to carry out what will become an expanding role in the Arctic. The region is changing rapidly, but "the fleet is aging as quickly as things are changing." Dr. Fortier envisioned a major role for the Coast Guard in controlling development in the Arctic. He felt

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(196) The competitive bidding process for the patrol vessels was cancelled in August 2008 because of higher than anticipated cost estimates. On 26 February 2009, Public Works and Government Services Canada issued a draft Request for Proposals (RFP) to provide industry with the opportunity for input. On 1 April 2009, the Government of Canada announced that a final RFP had been issued. Government of Canada, "Government Seeks Bids For Mid-Shore Patrol Vessels," News release, 1 April 2009, http://news.gc.ca/web/article-eng.do?crtr.sj1D=&mthd=tp&crtr.mnthndVl=&nid=440439.

(197) National Defence, *Leadmark: The Navy's Strategy for 2020*, 2001, http://www.navy.dnd.ca/leadmark/pdf/ENG_LEADMARK_FULL_72DPI.PDF.

(198) *Strategic Vectors*, one of several Air Force planning documents, established a long-term vision and strategy to guide its development. The Army, for its part, produced *Advancing with Purpose*, which sets out the broad guidelines for the *Army of Tomorrow*.

that northern communities need to be actively engaged in defining its future role, and that Inuit need to be recruited into the agency.

> My vision would be for the Coast Guard to incorporate the development aspirations of the Aboriginal peoples as it broadens its mandate, which it has no choice but to do in the Arctic. The opening of the Northwest Passage will create jobs, a bit like the St. Lawrence Seaway. These people should be trained to administer and work in these sectors so that they can benefit directly from them. … The potential is there, but their aspirations must be taken into account. They will tell us what they want.

8. Conclusion and Recommendations

The further diminishment of multi-year ice is expected to make the Arctic's resources much more accessible to industry, leading to more shipping. Canada needs to prepare for the eventuality that other nations will want to use the Northwest Passage in order to save time and reduce fuel costs. Many of the challenges faced by Canada in defending and consolidating Canada's sovereignty in the Passage are related in various ways to the Coast Guard, the agency that helps safeguard the values and environmental and economic interests of Canadians, especially those who live in the North.

The Coast Guard performs considerable and critical work in the Arctic. The agency supplies isolated northern communities, breaks ice for northern commercial shipping, maintains navigation aids in northern seaways, and provides for marine pollution response. Vessels and commerce depend on it for marine communications and traffic management. Everyone relies on the Coast Guard for marine search and rescue. It supports other government departments and agencies by providing ships, helicopters and other services. Research on fisheries, oceanography, seabed mapping, and marine climate depends on its vessels. Canada relies on Coast Guard icebreakers as a primary means of projecting its sovereignty in the Arctic.

The Committee believes that the Coast Guard's vital role in the Arctic, a region of tremendous potential, will become ever more critical in the coming years. Canada will need to build up its Coast Guard with added capabilities and equipment, and provide it with adequate funding. Given its enormous importance, more thought – and greater support – will need to be given to its future role in a rapidly changing Arctic.

With nearly a quarter of experienced marine personnel expected to retire in the next five to seven years, staffing issues will present a challenge. In addressing its human resources needs, the Canadian Coast Guard should actively recruit Inuit as part of its efforts to become a more representative organization.[199]

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[199] CCG, *Canadian Coast Guard Strategic Human Resources Plan 2008–2011*, p. 22.

Unlike the mandatory systems used in Canada's traffic zones on the Pacific and Atlantic coasts, NORDREG, Canada's marine vessel traffic and reporting system in Arctic waters, is voluntary. Foreign vessels over 300 tonnes entering Canada's Arctic waters are not required to report with respect to their location, planned route, or ability to comply with the *Arctic Waters Pollution Prevention Act*,[200] which defines Canada's Arctic waters as extending 100 miles seaward of its land masses (north of 60 degrees).

In August 2008, the Prime Minister announced the Government of Canada's intention to extend the AWPPA's enforcement zone out to 200 nautical miles, and to make NORDREG a mandatory vessel reporting system, which the Committee strongly supports. By making NORDREG compulsory, Canada would be sending the message internationally that it is committed to its claim that the Northwest Passage is part of its internal waters.

The Committee believes that Canada will need a much stronger, year-round capability in the Arctic to:

- Enforce a mandatory vessel traffic system in Canada's Arctic waters.
- Map Canada's continental shelf, exercise jurisdiction and ensure that exploration or development within and outside its 200-mile Exclusive Economic Zone are conducted in accordance with Canadian rules and standards.
- Provide year-round search and rescue capability, given expected increases in sea traffic and development activity, including new commercial fisheries and the growth of tourist cruises in Arctic waters.
- Accommodate an expected increase in the demand for vessels in support of scientific research.
- Provide adequate rapid, efficient intervention in response to major environmental accidents.
- Exercise effective control of the Northwest Passage, and develop it into a safe and efficient shipping route.

Judging from what we heard, Canada's icebreaking fleet will not be adequate once shipping increases. Paradoxically, as sea ice recedes and navigation increases, greater icebreaking capability will be required because sea ice will continue to form in winter. As the polar ice cap breaks up, heavy ice conditions are expected to persist for some years in certain

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[200] See CCG, "Vessel Traffic Reporting Arctic Canada Traffic Zone (NORDREG)," http://www.ccg-gcc.gc.ca/eng/MCTS/Vtr_Arctic_Canada.

areas because the ice pack tends to be pushed toward the Canadian Arctic Archipelago. Ice conditions are expected to fluctuate considerably from year to year.

As sea and air commercial traffic increases, the potential for accidents will rise. Much of the Northwest Passage remains poorly surveyed. Canada will need to develop a year-round SAR capability. The ability to provide SAR in ice-covered waters is an important means for Canada to demonstrate its commitment to sovereignty in the vast and sparsely populated region that is the Canadian Arctic.

At present, the Coast Guard has a limited capacity to navigate in Canada's Arctic. The February 2008 Budget announced $720 million in funding to replace the 40-year-old flagship *CCGS Louis S. St-Laurent* with a new polar icebreaker with greater capabilities. The rest of Canada's icebreaking fleet, however, is also aging and will need to be replaced with an appropriate number of Arctic-class, multi-mission icebreakers operated by the Coast Guard. The Committee believes this would be a cost-effective response to Canada's surveillance and sovereignty patrol needs in the Arctic. Coast Guard icebreakers could serve as platforms in support of all at-sea Government of Canada programs and missions in the Arctic (e.g., security and enforcement, search and rescue, environmental response, icebreaking, and resupply), including platform support for the RCMP and Canadian Forces.

The announced new icebreaker will have the capacity to operate in the Arctic for only nine months of the year. In future, Canada will need heavy icebreakers capable of operating year-round in the Archipelago and on the extended continental shelf. Because icebreakers are complex and unique ships, the lead time to put a new vessel out to sea is 8–10 years from decision to replacement. Canada therefore needs to plan and prepare for what is likely to become a much busier Arctic.

Recommendation 9:

The Committee recommends that Inuit, with their unique knowledge of the region, be recruited for the Coast Guard whenever possible.

Recommendation 10:

The Committee recommends that the Coast Guard, as the expert agency on the maritime situation facing Canada in the Arctic, formulate and implement a long-term strategic vision to guide it for the future.

Recommendation 11:

The Committee recommends that NORDREG, Canada's current voluntary vessel traffic system in the Arctic, be made compulsory. All foreign ships that enter Canada's Arctic waters should be required to register with NORDREG, regardless of vessel size.

Recommendation 12:

The Committee recommends that the federal government amend the definition of Arctic waters in the *Arctic Waters Pollution Prevention Act* to include the waters beyond the Arctic Archipelago to the 200-nautical-mile Exclusive Economic Zone, which is the case with other Canadian legislation, such as the *Oceans Act* and the *Canada Shipping Act, 2001*.

Recommendation 13:

The Committee recommends that Canada develop a long-term plan for the acquisition of new multi-purpose heavy icebreakers made in Canada and capable of operating year-round in its Arctic Archipelago and on the continental shelf as part of an integrated approach to vessel procurement recognizing the complementarity of Coast Guard and naval vessels.

Recommendation 14:

The Committee recommends the deployment of multi-mission polar icebreakers operated by the Coast Guard as a cost-effective solution to Canada's surveillance and sovereignty patrol needs in the Arctic.

WITNESS LIST

Thursday, June 5, 2008	
Legislative Assembly of Nunavut	The Honourable Peter Kilabuk, Member of the Legislative Assembly for Pangnirtung, Speaker of the Legislative Assembly
Municipality of Pangnirtung	Adamie Komoartok, Deputy Mayor of Pangnirtung Ron Mongeau, Senior Administrative Officer
Pangnirtung Hunters and Trappers Organization	Leopa Akpalialuk, Vice-Chairman
Pangnirtung Fisheries	Don Cunningham, General Manager Manasa Evic, Chairman of the Board
Cumberland Sound Fisheries	Joopa Gowdluapik, Chairman of the Board
Baffin Fisheries Coalition	Johnny Mike, Director
As individuals	Levi Evic Eric Joamie Gita Laidler Davidee Arnankak Noah Metiq Jamesie Mike
Monday, June 2, 2008 (morning meeting)	
Department of Environment, Government of Nunavut	The Honourable Olayuk Akesuk, M.L.A., Minister of Environment, Government of Nunavut
Department of Economic Development and Transportation, Government of Nunavut	The Honourable Patterk Netser, M.L.A., Minister of Economic Development and Transportation, Government of Nunavut
Department of Environment, Government of Nunavut	Simon Awa, Deputy Minister Wayne Lynch, Director, Fisheries and Sealing Earle Baddaloo, Director, Environmental Protection
Department of Economic Development and Transportation, Government of Nunavut	Rosemary Keenainak, Deputy Minister John Hawkins, Acting Deputy Minister, Transportation Branch
Legislative Assembly of Nunavut	Peter Kattuk, Member of the Legislative Assembly for Hudson Bay
Nunavuummi Tasiujarjuamiuguqatigiit katutjiqatigiingit (NTK)	John MacDougall

Monday, June 2, 2008 (afternoon meeting)	
City of Iqaluit	Glenn Williams, Councilor
Nunavut Association of Municipalities	Lewis Gidzinski, Infrastructure Research Manager
Nunavut Economic Forum	Glenn Cousins, Executive Director
Baffin Regional Chamber of Commerce	Hal Timar, Executive Director
Nunavut Wildlife Association	Michael d'Eca, Legal Advisor Jim Noble, Chief Operating Officer
Monday, June 2, 2008 (evening session)	
As an individual	John Amagoalik, Director, Lands and Resources, Qikiqtani Inuit Association
Desgagnés Transarctik Inc.	Waguih Rayes, General Manager
As an individual	Aaju Peter
Thursday, May 15, 2008	
Canadian Coast Guard	Steven Troy, Director, Safety and Environmental Response Systems
Transport Canada	William (Bill) J Nash, Director General, Marine Safety Victor M. Santos-Pedro, Director, Design, Equipment & Boating Safety. Richard Day, Director, Operations and Environmental Programs
Tuesday, May 13, 2008	
ArcticNet	Louis Fortier, Scientific Director
Tuesday, May 6, 2008	
As an individual	Donat Pharand, Professor emeritus, Faculty of Law, University of Ottawa
Thursday, May 1, 2008	
Fisheries and Oceans Canada	Michelle Wheatley, Regional Director, Science, Central & Arctic Region K. Burt Hunt, Regional Director, Fisheries and Aquaculture Management, Central and Arctic Region
Tuesday, April 15, 2008	
Inuit Tapiriit Kanatami	John Merritt, Senior Policy Advisor
Nunavut Tunngavik Incorporated	Paul Kaludjak, President Gabe Nirlungayuk, Director of Wildlife
Tuesday, April 8, 2008	
Council on Foreign Relations	Scott G. Borgerson, PH. D., International Affairs Fellow

Tuesday, April 1, 2008	
Inuit Circumpolar Council (Canada)	Duane Smith, President Chester Reimer, Strategic and Policy Advisor
Thursday, March 13, 2008	
University of Calgary	Rob Huebert, Associate director of the Centre for Military and Strategic Studies, Associate Professor, Department of Political Science
Thursday, March 6, 2008	
University of Bristish Columbia	Michael Byers, Professor, Canadian Research Chair in International Law and Politics
Thursday, February 28, 2008	
As an individual	Michael Turner
Tuesday, February 12, 2008	
Foreign Affairs and International Trade Canada	Alan H. Kessel, The Legal Adviser John Hannaford, Deputy Legal Adviser and Director General, Legal Affairs Bureau Wendell Sanford, Director, Oceans and Environnmental Law Division
Tuesday, February 5, 2008	
Fisheries and Oceans Canada	George Da Pont, Commissioner, Canadian Coast Guard Charles Gadula, Acting Deputy Commissioner Gary Sidock, Director General, Fleet Directorate

FACT-FINDING

Friday, June 6, 2008	
Legislative Assembly of Nunavut	Cindy Ann Rennie, Public Affairs Officer
Thursday, June 5, 2008	
Pangnirtung Fish Plant	Don Cunningham, General Manager
Auyuittuq National Park	Delia Borrouard, Park Manager
Wednesday, June 4, 2008	
Hunters and Trappers Organization (HTO)	Levi Nutaraluk, Member HTO Lootie Toomasie, Chairman HTO
Municipality of Qikiqtarjuaq	Tony Atsanik, Qikiqtarjuaq Hamlet Council Loasie Audlaqiaq, Mayor of Qikiqtarjuaq Meeka Newkungnck, Deputy Mayor, Qikiqtarjuaq Jeannie Kooneeluigi, Qikiqtarjuaq Councillor Hanna Audlakiak, Qikiqtarjuaq Councillor
Sirmilik National Park	Carey Elverum, Park Manager

	Terry Kalluk, Patrol Person Andrew Arrear, Patrol Person Brian Koonoo, Park Warden and Vice Chairman of the Nattinak Hunters and Trappers Organization
Municipality of Pond Inlet	Israel Mablick, Communications and Deputy Mayor, Pond Inlet Abraham Kublu, Mayor of Pond Inlet
Tuesday, June 3, 2008	
Hunters and Trappers Organization (HTO)	Simon Idlout, Vice Chairman, HTO Resolute Philip Manik, HTO Resolute Allie Salluviniq, HTO Resolute Tabitha Mullin, HTO Resolute Imooshie Nutarajuk, HTO Grise Fiord
Polar Continental Shelf Project	Brenda Eckalook, Office Administrator Barry Hough, Logistics Manager Tim McCagherty, Base Manager George Benoit, Stores Supervisor
Environment Canada	Dr. Grant Gilchrist, Environment Canada Dr. Mark Mallory, Environment Canada
Municipality of Arctic Bay	Councillor Olayuk Naqitaruik, Hamlet of Arctic Bay
Ikajutit Hunters and Trappers	Tommy Kilabuk, Chair of the Ikajutit Hunters and Trappers
Fisheries and Oceans Canada	Keith Pelley, Department of Fisheries and Oceans Luc Beland, Canadian Coast Guard JP Lehnert, Canadian Coast Guard