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Oceans Governance in the Arctic

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Abstract

Global warming is bringing rapid change to the Arctic. The melting of sea ice and glaciers is increasing faster than scientists predicted even a year ago. Environmental change is forcing legal and economic developments, which in turn will have serious environmental and social consequences. However, the potential for conflict has been greatly exaggerated. The 1982 United Nations Convention on the Law of the Sea (LOSC) has established the international legal regime governing the division of ocean space, sovereign rights over ocean resources, protection of the marine environment and the conduct of activities in and under the Arctic Ocean. Furthermore, a number of global environmental and maritime conventions apply to the Arctic. All the land territory, with its resources, is subject to national jurisdiction, as are the maritime zones proceeding seawards to the limits set out in the LOSC. While there is no multilateral political organisation with the power to regulate activities or to take legally binding decisions, there is a cooperative mechanism in the Arctic Council. Once all the maritime boundaries in the Arctic are delimited, the exploitation of resources can begin. However, first, precautionary measures should be adopted to ensure that the environment is protected as much as possible from increases in shipping and fishing as well as oil and gas development. This would require the elaboration of a regional seas agreement for the Arctic, incorporating elements of the Arctic Council, that reiterates the general principles in Part XII of the LOSC as well as those in the UN Fish Stocks Agreement, including the precautionary approach and the ecosystem approach.

Keywords

Arctic governance, marine environment, climate change

Introduction

On 2 August 2007, a Russian submarine planted a flag on the Arctic seabed, bringing to a theatrical climax several months of headlines on Arctic issues. Hardly a day passes, without media reports and photographs of melting ice and distressed polar bears. Global warming is bringing rapid, rather alarming change to the Arctic, and the melting of sea ice and Greenland glaciers is increasing faster than scientists predicted even a year ago. The consequences of climate change for the Arctic are many and inter-connected. They are legal, political, social, economic and environmental. Environmental change is

forcing legal and economic developments, which in turn will have serious environmental and social consequences. However, the potential for conflict has been greatly exaggerated.

The symbolic gesture of the planting of a Russian flag was highly misleading. Contrary to some commentators' fantasies of a new "cold war", the five Arctic coastal states are not engaged in a military or economic conflict in the melting north. There is no "gold rush" or race for unclaimed resources. The Arctic coastal states are only rushing to meet a deadline to collect scientific data to support their claims to an "outer continental shelf" over 200 nautical miles (nm) from their coasts on the seabed of the Arctic Ocean.¹ Contrary to some media reports, they are not claiming either additional land territory or the "North Pole". The North Pole does not even exist in a real physical sense. It is just a notional point in the midst of the ice-bound Arctic Ocean, which is surrounded by the land territories of Canada, Denmark (for Greenland), Norway, Russia and the United States.

Furthermore, neither the planting of flags nor military might will determine which state has sovereign rights over the mineral and fisheries resources of the Arctic. The 1982 United Nations Convention on the Law of the Sea (LOSC)² has established the international legal regime governing the division of ocean space, sovereign rights over ocean resources, protection of the marine environment and the conduct of activities in and under the Arctic Ocean. Thus, all ocean-related issues fall to be governed by the provisions of the LOSC. All the land territory, with its resources, is subject to national jurisdiction, as are the maritime zones proceeding seawards to the limits set out in the LOSC.

As for the Arctic region as a whole, both land and sea, there is no over-arching international legal regime and no multilateral political organisation with the power to regulate activities or to take legally binding decisions. However, there is a cooperative mechanism: the Arctic Council, created by the eight states in the region³ as a forum for discussion of all issues in the Arctic, in particular the protection of the environment, sustainable development and the interests of the native people.⁴ In addition, there are a number of global

¹ The deadline is 2009 or ten years from their ratification of the United Nations Convention on the Law of the Sea (LOSC).

² Adopted at Montego Bay, 10 December 1982, in force 16 November 1994, 21 ILM 1245 (1982).

³ The five Arctic coastal states, plus Finland, Iceland and Sweden.

⁴ See *Joint Communiqué and Declaration on the Establishment of the Arctic Council* (1996) 35 ILM 1382.

environmental and maritime conventions that apply to the Arctic with respect to various activities and sources of environmental degradation.

In the light of misleading media reports and a statement by the European Commission⁵ citing territorial claims, sovereignty disputes, and the threat of war over territory and resources, it seems advisable to clarify the physical and political status of the Arctic, to outline the main economic and environmental issues, and to consider whether a new legal regime is necessary, especially in view of the massive environmental and economic changes already taking place, with more to come in the very near future.

Background

The Physical, Political and Legal Situation in the Arctic

The Arctic consists of a large body of water—the Arctic Ocean—surrounded by land, which is under the sovereignty of the five Arctic coastal states: Canada, Denmark (for Greenland), Norway, Russia and the United States. Although their coasts do not abut the Arctic Ocean, Finland, Iceland and Sweden are also considered to be Arctic states, as their territory extends to the Arctic Circle, at about 66°32'N. The sovereignty of these states over their land territory is not in dispute, except for Hans Island, which is claimed by both Canada and Denmark. Canadian sovereignty over the islands in the Arctic Archipelago has never been challenged. However, there is active disagreement about the status of the waters between the Canadian islands, the fabled Northwest Passage.

The so-called race to claim “the North Pole” relates to claims by the Arctic coastal states for an outer continental shelf (seabed), extending from their coasts and lying beneath the waters surrounding the geographic North Pole. Other claims relate to a number of unresolved bilateral maritime boundary disputes between the states in the region. Under the law of the sea, each coastal state has jurisdiction and sovereign rights over resources in the water column and the seabed up to 200 nm from its coasts. Beyond that limit, the waters are high seas, open to all states, but a portion of the seabed may be claimed by coastal states if they can prove that it constitutes a “natural prolongation” of their land territory.

⁵ “Climate Change and International Security”, Paper from the High Representative and the European Commission to the European Council, S113/08, 14 March 2008, available at: www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/reports/99387.pdf.

Most of the ocean and the land territory of the Arctic have been frozen ever since human beings arrived. When Western Europeans first ventured into the Arctic, various native peoples had inhabited the land territory and some had used the sea ice for many thousands of years. At present, approximately 10% of the four million inhabitants in the Arctic are native people from a number of different ethnic groups in Alaska, Canada, Greenland, Russia, and northern Scandinavia (not Iceland).⁶ In the Canadian Arctic, the native people have their own quite extensive autonomous territory called Nunavut, created as a result of a land claim settlement.⁷ Greenland has a substantial degree of home rule, except for foreign relations.

Environmental Change in the Arctic

Climate change is having a dramatic impact on Arctic ecosystems and severe repercussions are expected to increase in the future, as temperatures continue to rise. Recent scientific studies have indicated that temperatures in the Arctic are increasing twice as quickly as elsewhere, and that various feedback effects are causing glaciers and sea ice to melt at an unprecedented rate.⁸ The Greenland glaciers have been thinning more rapidly than expected, and melted water under the ice sheets is causing accelerated sliding towards the sea. The melting of all Greenland glaciers could cause several metres of sea level rise, adding considerably to the sea level rise already caused by thermal expansion.

Sea ice in the Arctic has decreased in volume and extent to unprecedented levels, leaving the Northwest Passage completely free of ice at the end of the 2007 summer season and open to navigation for the first time in recorded

⁶ Information on website of the Arctic Council; available at: <http://www.arctic-council.org>.

⁷ Nunavut (the Inuktitut word for “our land”) was created as a territory of Canada on 1 April 1999 as a result of the Nunavut Land Claims Agreement, adopted into law by the Canadian Parliament in the Nunavut Act (1993, c.28, N-28.6) and the Nunavut Land Claims Act (1993, c.29, N-28.7), available at: <http://laws.gc.ca/en/result>.

⁸ *Arctic Climate Impact Assessment (ACIA)*, 2005, Cambridge University Press, 1042 pp., website: <http://www.acia.uaf.edu>; Intergovernmental Panel on Climate Change (IPCC), *Fourth Assessment Report*: O.A. Anisimov, D.G. Vaughan, T.V. Callaghan, C. Furgal, H. Marchant, T.D. Prowse, H. Vilhjálmsson and J.E. Walsh, 2007: *Polar regions (Arctic and Antarctic). Climate Change 2007: Impacts, Adaptation and Vulnerability*. Contribution of Working Group II to the Fourth Assessment, Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, (eds.), Cambridge University Press, pp. 653–685; UNEP, *GEO 4*, Chapter 4, Water, 2007, website: <http://www.unep.org>. The scientific information in this article on the consequences of climate change in the Arctic has been synthesized from all the reports listed above, as well as from the individual research papers and governmental websites referred to in the footnotes.

history. Melting sea ice is exposing greater areas of darker water, causing increased absorption of heat from the sun and further melting. On 1 October 2007, the US National Snow and Ice Data Center (NSIDC)⁹ announced that sea ice in September was at its lowest known level and 25% lower than the previous low set in 2005. At the same time, the Northern Sea Route north of Russia, while relatively free of ice in the west, was still blocked in places in the east. NSIDC scientists predicted that sea ice might disappear by 2030, potentially opening up the Arctic to ice-free year-round shipping and to offshore mineral exploration and exploitation. Yet, this could happen even sooner. In December 2007, another group of scientists concluded that the latest modelling studies indicate that northern polar waters could be ice-free in summer by 2012–2013.¹⁰

Melting ice on land, including from permafrost, glaciers and rivers means sea levels will rise, and more freshwater entering the oceans will change their composition and their circulation patterns. Melting rivers will also convey more sediment, nutrients and contaminants to coastal areas. Sea level rise, permafrost melting and stronger wave action are causing coastal erosion. The tree line is moving northwards, but forest fires and increasing numbers of pests are killing the trees. The melting permafrost is potentially causing damage to settlements and infrastructure, including buildings, roads and pipelines. Furthermore, methane gas currently frozen underground in permafrost could be released when the frost melts, thereby increasing the greenhouse effect that causes global warming. Methane is a more potent greenhouse gas than CO₂.

Because of these changes in Arctic ecosystems and in their habitats, both the flora and fauna have to adapt to new circumstances and some might not be able to survive. Polar bears are likely to become extinct because they travel and hunt over sea ice, which is diminishing in extent and duration. Furthermore, their main food is seals, which are also endangered. Bears in the Hudson Bay area of Canada are in poor condition due to insufficient food and are not producing as many cubs as usual. Because seals use the ice as a breeding habitat, they are having difficulty reproducing due to a reduction in sea ice. Reindeer/caribou cannot feed properly, because in place of easily removed snow covering the mosses and lichens they live on, changing temperatures

⁹ See http://nsidc.org/news/press/2007_seaiceminimum/20070810_index.html. For the most recent news, click on Arctic Sea Ice News and Analysis. Spring 2008 observations point to a significant decrease in the thickness and extent of sea ice.

¹⁰ Presentation by Professor Wieslaw Maslowski of the Naval Postgraduate School, Monterey, California, to the American Geophysical Union, BBC News, 12.12.2007; AGU Fall Meeting 2007 Abstracts, at http://www.agu.org/meetings/fm07/fm07-sessions/fm07_U33B.html.

have brought rain, which turns to solid ice on the ground, sealing off the vegetation. In addition, reindeer migratory patterns are being affected by melting ice. Arctic flora and fauna are also increasingly affected by insects, parasites and diseases, which are moving north. Some animals and fish will not be able to find enough to eat, as they feed on organisms living in the edges of the receding ice. While some fish, animals and vegetation are moving north, others may not be able to adapt to warmer temperatures. Bird migration is changing because of loss of habitats and food sources.

Human Consequences of Environmental Change

The serious adverse consequences of climate change on the physical environment and on Arctic biodiversity are already affecting the lives of people in the Arctic who have lived by hunting, fishing, gathering and herding for thousands of years. As a consequence of sea ice melting, they are increasingly prevented from using the ice for hunting, fishing, and travelling. In addition, the animals native people have hunted for thousands of years are becoming fewer in number, are changing location and may even become extinct.

Furthermore, the melting of the permafrost and softening of the ground result in damage to buildings, ice roads, pipelines and other kinds of infrastructure, including ports. Waste and contaminants that have been frozen in the ice will be released. Because coasts are being eroded, some settlements will have to move inland at considerable cost. The local population is already suffering some dislocation, and the social and cultural impacts could be quite severe. Further change will come along with economic development, in particular mining, oil and gas exploitation, and increased shipping and industrial fishing. Although the native people are adapting to these changes, many are in danger of losing their traditional way of life.

The Division of Ocean Space and Jurisdictional Issues

With a single small exception, there are no disputes concerning sovereignty over territory in the Arctic. The Arctic states enjoy absolute sovereignty and jurisdiction over their land territories and may take any necessary action to mitigate or deal with the environmental consequences of climate change and economic development on land.¹¹ However, the situation with respect to

¹¹ Resources disputes concerning Svalbard are an exception.

ocean space and resources is more complex. As stated above, the LOSC provides the rules for the division of ocean space, sovereign rights over resources, the exercise of jurisdiction over activities and for the protection of the marine environment. However, in some cases resources are shared (fisheries), while the protection of the marine environment and conservation of marine biodiversity require cooperation on a regional basis.

The division of ocean space relates to the maritime zones to which coastal states are entitled, the bilateral maritime boundaries with other states between these maritime zones, and the seaward limits of their continental shelves. The outer limits of the continental shelves form the boundary between seabed areas under national jurisdiction and the international seabed “Area”, administered by the International Seabed Authority¹² for the benefit of all states. Both bilateral and outer continental shelf boundaries have to be delimited before Arctic states and their nationals can engage in resource extraction in areas where sovereign rights and jurisdiction are disputed or uncertain.

Maritime Zones

Under the LOSC, coastal states are entitled to claim several maritime zones extending seawards from their coasts. As a first step, states have to draw baselines along their coasts from which the other maritime zones will be measured. These lines will either follow the low water mark along the sinuosities of the coast, or be drawn as straight baselines following the general direction of the coast, where the coast is deeply indented or fringed with islands, as in Norway or the Canadian Arctic archipelago. Landward of the baselines, the sea constitutes “internal waters”, over which coastal states have absolute sovereignty.¹³ Foreign vessels may not enter internal waters without the permission of the coastal state.

Seawards of the baseline, states may claim a territorial sea up to a limit of 12 nm and an exclusive economic zone (EEZ) for a maximum of 200 nm from coastal baselines. States have sovereignty over their territorial sea; however, foreign vessels have a right of innocent passage, subject to the rules in Part II of the LOSC. Under Part V of the LOSC, states have sovereign rights

¹² The regime for the Area is set out in Part XI of the LOSC and the Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea, adopted 28 July 1994, in force 28 July 1996; 33 ILM 1309 (1994). See website of the ISA for further information: <http://www.isa.org.jm>.

¹³ Articles 5, 7 and 8 of the LOSC. The rules regarding sovereignty in internal waters are customary international law.

over the living and non-living resources of the EEZ and jurisdiction to protect the marine environment and control marine scientific research up to a limit of 200 nm from the coastal baselines.

Under Part VI of the LOSC, all coastal states may claim a continental shelf (underwater extension of its land territory) up to the 200 nm limit of the EEZ. If the physical shelf extends beyond 200 nm, states may claim sovereign rights over the resources of the shelf up to the edge of its natural prolongation, pursuant to the rules set out in Article 76 of the LOSC. The resources of the shelf include mineral resources (mainly oil and gas) and sedentary species of living resources, that is, animals that are attached to the shelf or cannot move except in constant contact with it. Because the rights of the coastal state over its outer continental shelf do not affect the status of the superjacent waters, those waters retain their identity as high seas, open to all states.

Although limitations of space do not permit a full discussion, it should be borne in mind that in the Arctic, special problems with the determination of baselines will be exacerbated with the melting of sea ice and glaciers. First, in some cases, the edge of the ice has been used as equivalent to territory in establishing the baselines. Where the ice has melted to expose the actual land, baselines will have to be adjusted. Second, the coastal erosion described above may also require changes in basepoints and baselines before any delimitation is undertaken.

*The Outer Continental Shelf*¹⁴

The LOSC provides for a legal means to determine the outer limit of the continental shelf. States are required to collect scientific information demonstrating how their claim to an outer continental shelf conforms to the provisions of Article 76. This information is presented to the Commission on the Limits of the Continental Shelf (CLCS or the Commission), an expert scientific body established under Article 76 and Annex II of the LOSC. The CLCS will examine the material submitted and make recommendations as to the location of the outer limit. The coastal state then must establish its outer limit on the basis of the recommendations. This procedure provides a means to establish limits that are internationally recognised and legally binding. Flags on the seabed have no legal value.

¹⁴ This term is not used in the LOSC, but is used here for convenience following the precedent set in the 2006 maritime boundary delimitation between Barbados and Trinidad and Tobago. For the text of the Arbitral Award of 11 April 2006, see the website of the Permanent Court of Arbitration, at: <http://www.pca-cpa.org>.

The real purpose of the Russian expedition in the summer of 2007 was to collect additional material to support the Russian claim to an outer continental shelf in the Arctic. Arctic coastal states have been preparing their submissions to the CLCS to claim as much continental shelf as possible, with a view to exploiting its mineral resources. Russia was the first state to make a submission, in December 2001.¹⁵ After examining the submission, the Commission requested more data on the claim in the central Arctic, and information on its bilateral maritime boundaries once these were finally established. The CLCS may not make recommendations in an area that is in dispute without the agreement of all parties. Norway made a submission in 2006.¹⁶ Meanwhile Canada and Denmark are engaged in underwater surveys¹⁷ to collect data to support their claims. They have cooperated in a joint scientific expedition to the Arctic to determine whether the Lomonosov Ridge is linked to their shelves. Russia also claims the ridge as part of the natural prolongation of its shelf.

As the United States is not a party to the LOSC, it cannot submit a claim to an outer continental shelf. However, the issue of accession to the LOSC is before the US Senate and some commentators believe (or hope) that the lure of Arctic riches could finally induce the Senate to make a positive decision.¹⁸ In early 2008, US researchers announced that they had determined that the US shelf extended 100 nm further seawards than had previously been estimated.¹⁹ In order to preserve its position and to present its views on technical issues, the United States has sent letters to the CLCS commenting on various submissions, including that of Russia.²⁰

¹⁵ See website of the CLCS at <http://www.un.org/Depts/los> for executive summaries of all the submissions, comments by other states, and statements of the Chairman of the CLCS reporting on the work of the Commission.

¹⁶ *Ibid.*

¹⁷ Foreign Affairs and International Trade Canada, “International Collaboration”, http://geo.international.gc.ca/cip-pic/geo/international_collaboration-en.aspx. Canada has also discussed the possibility of collaboration with Russia and the United States.

¹⁸ Reuters, “U.S. Senate Panel backs Law of the Sea treaty”, 31 October 2007, at <http://www.reuters.com/articlePrint?articleId=USN31335584>. The Senate Foreign Relations Committee has voted in favour of ratification, but the convention has to be approved by the full Senate. For the view of Senator Stevens, see his press release of 3 April 2008, “STEVENS CALLS FOR AGGRESSIVE APPROACH TO PROTECT ARCTIC OCEAN FISHERIES”. This reports on a Senate hearing in which several participants, including Senator Stevens, advocated US accession to the LOSC as a means to protect and control the Arctic. See: http://commerce.senate.gov/public/index.cfm?FuseAction=PressReleases.Detail&PressRelease_ID=6d0aa600-467e-4c.

¹⁹ National Oceanic and Atmospheric Administration (NOAA), “UNH-NOAA Ocean Mapping Expedition Yields New Insights into Arctic Depths”, Press release, 11 February 2008, http://www.noanews.noaa.gov/stories2008/20080211_arctic.html.

²⁰ See note 15 *supra*.

On 18 April 2008, Denmark invited the four other countries with Arctic coasts to a meeting in Greenland on 27–28 May 2008 to discuss their Arctic claims. While it is unclear exactly what will be discussed, it is possible that Denmark wishes to propose collaboration in preparing claims for the CLCS. It also wishes states to agree not to negotiate any new Arctic treaty until the CLCS process is complete.²¹

Territorial and Resource Disputes

There is only one territorial dispute in the Arctic and it is literally a very small one. Both Canada and Denmark claim sovereignty over tiny uninhabited Hans Island (1.3 square kilometres), which lies between Canada's Ellesmere Island and Greenland. On 18 February 2008, Denmark announced that it had proposed to Canada to discuss Hans Island at the United Nations in September 2008. Meanwhile, Canadian and Danish scientists are establishing a joint weather station on the island to study winds and currents in the area.

Norway, as sovereign, disagrees with Iceland and Russia about the exploitation of the resources around the Svalbard archipelago in the Arctic Ocean north of Norway. Although Norway's sovereignty over the islands was recognised in the 1920 Svalbard Treaty²² between Norway and several other states, the other parties were granted certain equal rights of hunting and fishing in the territories, as well as "liberty of access" and the right to carry on "all maritime, industrial, mining and commercial operations on a footing of absolute equality". There is some disagreement as to the meaning of these provisions in the light of the extended maritime zones established subsequently: the EEZ and the continental shelf. Do the rights of other states exist only on land and in the territorial sea, or do they extend to the new zones established since 1920?²³

Maritime Boundaries

Bilateral maritime boundaries separate the maritime zones of coastal states where their basic entitlements to a territorial sea, EEZ and/or continental

²¹ CBC News at: <http://www.cbc.ca/canada/north/story/2008/04/18/arctic-meeting.html>.

²² Treaty Concerning the Archipelago of Spitsbergen, 1920, in force 1925, 2 L.N.T.S. 7, text also available in the Australian Treaty series, at: <http://www.austlii.edu.au/au/other/dfat/treaties/1925/10.html>.

²³ For a recent analysis, see T. Pedersen, "The Svalbard Continental Shelf Controversy: Legal Disputes and Political Rivalries", (2008) 37 *Ocean Development and International Law* 339–358.

shelf overlap. The LOSC Articles 15, 74 and 83 provide basic rules for determining these boundaries in bilateral negotiations. However, if states cannot reach agreement in negotiations, they may opt for third party settlement under Part XV of the LOSC. There is a choice of taking their dispute to the International Court of Justice, the International Tribunal for the Law of the Sea, or to *ad hoc* arbitration under the LOSC Annex VII.

The continental shelf boundary between Canada and Greenland has already been delimited in a 1973 bilateral agreement, except for a small area around Hans Island and in the Lincoln Sea.²⁴ However, Canada's maritime boundary with the United States in the Beaufort Sea off the coasts of the Yukon Territory and Alaska is still in dispute. This issue may be settled by negotiation or adjudication outside of the LOSC.²⁵ On the western side of Alaska, the United States and Russia concluded an agreement in 1990 on the delimitation of their boundary in the Bering Strait.²⁶ However, thus far, the Duma (Russian Parliament) has refused to ratify it. Moving westwards, the maritime boundary between Norway and Russia in the Barents Sea is still under negotiation. When Norway submitted its claim for an outer continental shelf to the CLCS in 2006, Russia sent a letter stating that it did not object to the Commission's considering the data.²⁷ This means that the outer limit may be determined before the bilateral boundary. Some distance west of mainland Norway, the maritime boundary between its Jan Mayen Island and Greenland was delimited by the International Court of Justice in 1993.²⁸ Denmark and Greenland have concluded an agreement with Norway on the maritime boundary between

²⁴ *Agreement between the Government of the Kingdom of Denmark and the Government of Canada relating to the Delimitation of the Continental Shelf between Greenland and Canada*, 17 December 1973, available at: <http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/DNK-CAN1973CS.PDF>. For a discussion of issues involved in Arctic boundaries, see: A.G. Oude Elferink and D. Rothwell (eds.), *The Law of the Sea and Polar Maritime Delimitation and Jurisdiction*, Martinus Nijhoff, The Hague, 2001.

²⁵ Because Canada rejected adjudication under the LOSC by a declaration on ratification on 7 November 2003, judicial determination of the boundary could only be effected by mutual consent. See Canadian declaration at: http://www.un.org/Depts/los/convention_agreements/convention_declarations.htm#Canada. Canada and the United States have already taken one maritime boundary dispute to the International Court of Justice. See *Delimitation of the Maritime Boundary in the Gulf of Maine Area (Canada/United States of America)*, ICJ Reports 1984.

²⁶ *Agreement between the United States of America and the Union of Soviet Socialist Republics on the Maritime Boundary*, 29 ILM 941 (1990).

²⁷ Letter dated 21 February 2007, *supra*, note 15.

²⁸ *Maritime Delimitation in the Area between Greenland and Jan Mayen (Denmark v. Norway)*, ICJ Reports 1993.

Greenland and Svalbard.²⁹ Iceland's boundaries with Greenland and Jan Mayen have been settled.³⁰

Like the claims for an outer continental shelf, the bilateral maritime boundaries are important because they determine which state may exercise sovereign rights over the resources in the area of overlap in the EEZ and the continental shelf. This includes both living (fish, crustaceans and molluscs) and non-living resources (mainly oil and gas).

Economic Development in the Arctic

The warming temperatures and the melting of sea ice, permafrost and glaciers promise to bring economic development to the Arctic. The three main developments would be: 1) increased mineral exploitation, especially offshore; 2) shipping through the Canadian Northwest Passage and the Northern Sea Route in the Russian Arctic, both for general cargo vessels and for tankers and other vessels servicing mineral development; and 3) increased fishing to follow fish stocks moving northwards. In addition, tourism is already expanding and melting sea ice should tempt cruise vessels into longer voyages. It is also possible that bioprospecting may seem attractive, for the same reasons as in the Antarctic, where it is a major issue.³¹

Exploitation of Mineral Resources in the Arctic

Since significant oil and gas reserves are already being exploited on land and close to shore in Alaska, Canada and the Russian Arctic, the Arctic states anticipate that additional reserves lie beneath the frozen ocean.³² In 2000, the

²⁹ Agreement between the government of the Kingdom of Norway and the Government of the Kingdom of Denmark together with the Home Rule Government of Greenland, 20 February 2006, available at: <http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/STATEFILES/DNK>. See analysis by A.G. Oude Elferink, "Maritime Delimitation Between Denmark/Greenland and Norway", 38 *Ocean Development and International Law*, 375–380 (2007).

³⁰ Agreement between Iceland and Norway of 28 May 1980 in the Continental Shelf Area between Iceland and Jan Mayen, 20 ILM 797 (1981).

³¹ See D. Leary, "Bi-polar Disorder? Is Bioprospecting an Emerging Issue for the Arctic as well as for Antarctica?" (2008) 17 *RECIEL* 41–55 and UNU-IAS Report, *Bioprospecting in the Arctic*, United Nations University, Institute of Advanced Studies, Yokohama, Japan, 2008, 45 pp.

³² For comprehensive information on current and possible future exploitation and its environmental consequences, see "Arctic Oil and Gas 2007", Arctic Monitoring and Assessment

US Geological Survey (USGS) estimated that 25% of the world's oil and gas reserves lay beneath the Arctic. In 2007, it initiated a new survey based on improved data, the results of which should be published in the summer of 2008.³³ Before the recent melting, offshore reserves under permanent sea ice would have been difficult to exploit and transport. The melting of the ice should make the minerals more accessible and the transport of oil by sea much easier. Exploratory activities will be facilitated, as will the installation of oil rigs, the transport by ship of supplies and services and the transport of oil to markets.

However, visions of a “gold rush” in the Arctic might not be realised as soon as some anticipate, for most of the reserves are believed to be gas, rather than oil, and the technology to keep oil rigs ice-free has not yet been developed. Furthermore, scientists have warned that in the foreseeable future, melting ice might make Arctic waters more, rather than less hazardous (see below). In addition, concerns that increased exploitation of oil and gas could cause environmental damage through accidents and disturbance of the native flora and fauna³⁴ may at least delay the commencement of commercial exploitation, pending environmental impact assessments.

Onshore, in addition to oil and gas, the interest is in gold, diamonds and other minerals, which are already being exploited. However, while exploration and exploitation may become easier when the permafrost melts, transportation will become more difficult, as roads and pipelines are becoming unstable. This could lead to increased shipping to service the mining operations and to take the output to markets.

Navigation in the Arctic

The Northwest Passage (NWP) is the sea route from the Atlantic to the Pacific Oceans passing through the islands of the Canadian Arctic archipelago, north of the Canadian mainland. Until recently, the route had always been blocked with sea ice and was almost impassable. However, in September 2007, the passage was completely ice-free for several weeks. If the ice melts sufficiently to leave the NWP permanently ice-free during the summer months, ships going through it could potentially save a considerable amount of time, fuel and money in comparison with the existing route through the Panama Canal.

Programme (AMAP), commissioned by the Arctic Council, available from the AMAP Secretariat or online at: <http://www.amap.org>.

³³ USGS Energy Resources Program, see online at: <http://energy.usgs.gov/arctic/>.

³⁴ See below for information on environmental effects.

On the other hand, scientists and shipping experts have warned that the Arctic could remain dangerous for navigation for some time to come. Not only is there a huge year-to-year variability in ice conditions, but also multi-year ice can drift into the shipping lanes. Because it is thicker and harder than first-year ice, multi-year ice will stop any ship except a high-powered ice-breaking vessel.³⁵ In addition, there could be an increased number of icebergs, especially as the ice sheets and glaciers melt and break up. As a consequence, in the next few years, navigation in the Arctic is likely to be more, rather than less, dangerous.

The United States contends that the NWP is an international strait, open to use by all states, while Canada insists that the sea between the Canadian islands has the legal status of internal waters.³⁶ This means that Canada enjoys full sovereignty and no foreign vessels may enter the strait without Canadian permission. Furthermore, if the NWP lies through internal waters, Canadian law would apply, including rules for environmental protection that could be stricter than international rules and standards. In 1970, Canada adopted the Arctic Waters Pollution Prevention Act,³⁷ giving it the power to apply special measures to protect the environment up 100 nm from the coast. Although the US protested the Act, during the negotiations for the LOSC, Canada, the US and the USSR (now succeeded by Russia) together worked on Article 234, which gives coastal states the jurisdiction to adopt special measures to protect the marine environment in ice-covered areas in the EEZ. However, such measures must have “due regard to navigation”. Exactly what this means is unclear.

The Canadian position on internal waters is based on a historic claim, as the Inuit have used the islands and the waters between them for millennia; on the rules for using straight baselines to enclose internal waters; and on the fact that very few ships have ever navigated through the strait.³⁸ In the past 40 years, only two vessels have transited the NWP without Canadian permission, a US-owned ice-strengthened tanker in 1969 and a US Coast Guard ice-

³⁵ National Research Council Canada, “Safe Northern Passage”, January 2007, at http://www.nrc-cnrc.gc.ca/highlights/2007/0701passage_e.html. For views of navigational experts, see *Fairplay*, 3 April 2008.

³⁶ See statement by the Legal Bureau of the Canadian Department of External Affairs made on 21 May 1987, reproduced in 25 *Canadian Yearbook of International Law* at 406 (1987). Most recently, the Canadian military has announced that henceforth, they will refer to the NWP as the “Canadian Internal Waters”, CanWest News Service, 9 April 2008, at <http://www.canada.com/>.

³⁷ Statutes of Canada, Chap.47, 18-18 Eliz. II, 1969–70.

³⁸ For a thorough up-to-date analysis, see: D. Pharand, “The Arctic Waters and the Northwest Passage: A Final Revisit”, (2007) 38 *Ocean Development and International Law* 3–69.

breaker in 1985.³⁹ Following the latter incident, Canada drew straight baselines around the Arctic islands, declaring the waters landward of the baselines to be internal waters.⁴⁰ These baselines conform to the requirements in Articles 7 and 8 of the LOSC, which allow coastal states to draw straight baselines around coasts that are deeply indented and fringed with islands, and to designate the sea area within as internal waters.

There is also a Northern Sea Route (NSR or the Route) in the Arctic north of Russia extending from Novaya Zemlya in the west to the Bering Strait in the east. At present, the NSR is mainly traversed by local vessels supplying northern towns and servicing oil and gas installations. With longer ice-free periods, it could be used by ships on voyages from the Pacific to the North Sea and the Atlantic. It would also be convenient for tankers exporting oil and gas over longer distances. The Russian government officially opened up the NSR to foreign vessels in 1991 and from 1993–1999 participated in the International Northern Sea Route Programme (INSROP), an international, multidisciplinary research programme to create an extensive knowledge base about the ice-strewn shipping lanes north of the Russian mainland. One hundred and sixty-seven technical reports were produced and an international conference was held in 1999.⁴¹ However, for a number of reasons, the route is not being used for through traffic even today. It is still dangerously infested with ice; some areas are shallow; the Russian authorities charge high rates for ice-breaking escorts and ice pilots; insurance rates are high; and the construction of large, ice-strengthened vessels would be prohibitively expensive. Nevertheless, in 2007, the Russian government appears to have decided to revive the Route.⁴²

The United States has argued that both the NWP and the NSR are international straits, passage through which is governed by Articles 34 to 45 in Part III of the LOSC. Briefly, these provisions grant the vessels of all states freedom of navigation and overflight without impediment, termed “transit passage” in “straits used for international navigation”. Coastal states enjoy much less control over passage through international straits than they do over passage through the territorial sea. In particular, to protect the environment in

³⁹ However, the first had a Canadian officer on board and was escorted by a Canadian ice-breaker, while the second also had Canadians on board. See Pharand, *op. cit.*, *supra*, note 38, for details of all transits up to 2005.

⁴⁰ Order in Council P.C. 1985–2739, adopted 10 September 1985, effective 1 January 1986. The statement of the Secretary of State for External Affairs is reproduced in 24 ILM 1723–27 (1985).

⁴¹ Reports and information available at: <http://fni.no/insrop>.

⁴² See, for example: “Russia set to overhaul its Arctic fleet”, Russian News and Information Agency, 09/04/2007, at: <http://en.rian.ru/analysis>.

international straits, coastal states may only adopt and apply regulations “giving effect to applicable international regulations regarding the discharge of oil, oily wastes and other noxious substances”. Although Canada, Russia and the US have all adopted legislation and regulations for navigation through the Arctic, with Russia expressly relying on Article 234, the relationship between transit passage and Article 234 is unclear.⁴³

Because of the increased melting of Arctic sea ice and an expectation of foreign vessels attempting to transit the NWP, in 2007, the Canadian Prime Minister announced a number of measures to “enhance” Canadian sovereignty in the Arctic, including the building of 6–8 naval patrol ships, a new military training facility and the development of Canada’s first Arctic deepwater port near Iqaluit.⁴⁴

However, the real issue is the protection of the fragile Arctic environment from extensive shipping activity. There are serious concerns that large numbers of ships transiting the Arctic straits might cause significant damage to the very sensitive environment, not only from oil spills, but also from operational pollution, the introduction of alien species and the disturbance of wildlife by movement, habitat fragmentation and noise. This threat would be even greater if the expectations of exploiting oil and gas deposits in the Arctic were realised, and the straits were extensively used by ships servicing a large number of offshore oil and gas installations, with the concomitant risks of operational and accidental pollution and constant disturbance.

Living Resources of the Sea

Fisheries are already being transformed, as certain species alter their distribution by moving north to seek food and colder water. The fisheries in the Barents and the Bering Seas, among the most productive in the world, are changing as commercial fishers follow the redistribution of the stocks. The IPCC considers that with an increase in open water, primary and secondary production south of the ice edge will increase, benefiting almost all of the most

⁴³ See comparison and discussion by D. Brubaker, “Navigation and pollution in the Northern Sea Route”, in D. Vidas (ed.) *Protecting the Polar Marine Environment*, pp. 221–243 (Cambridge University Press, Cambridge, 2000), as well as Pharand, *op. cit.*, *supra*, note 38.

⁴⁴ See BBC News, “Canada ‘to reclaim Arctic waters’”, at <http://news.bbc.co.uk/go.pr.fr/-/hi/americas/6287436.stm>, dated 2007/07/10; “Canada to strengthen Arctic claim”, at <http://news.bbc.co.uk/go.pr.fr/-/hi/americas/6941426.stm>, dated 2007/08/10.

important commercial fish stocks in Arctic and sub-Arctic seas, such as cod and herring in the north Atlantic and walleye pollock in the Bering Sea.⁴⁵

However, other species will not be able to survive a rise in temperature, different ocean depths, differences in algal blooms and plankton and other environmental changes such as ocean acidification and an influx of alien species. For example, northern shrimp and king crab may lose habitat. Animals that live off organisms in the ice may starve because the ice is melting or forming at different times. Others may proliferate because of a lack of predators. In addition, rising temperatures will lead to a risk of harmful algal blooms, marine pests and pollution, problems that will be exacerbated by an increase in shipping. As a consequence, some species may increase while others decrease, and the ecosystems will experience many changes that cannot be predicted.

Yet, the effect of a change in climate on future yields of commercial stocks may be less important than sound fisheries policies and their effective enforcement. As fish cross international boundaries into new habitats, existing bilateral and multilateral agreements for fisheries management and conservation may have to be amended and new arrangements entered into. Fisheries disputes between Norway and Russia around Svalbard⁴⁶ have been exacerbated and conflicts have arisen between Russian and American fishermen in the Bering Sea.⁴⁷ Although some existing fisheries agreements touch its fringes, there is no overall regional fisheries agreement for the Arctic.

Environmental and Social Consequences of Economic Development

Climate change alone is already having a significant impact on the entire Arctic ecosystem through the physical alterations caused by higher temperatures on land and sea. The Arctic environment will also be affected by the increased economic development in the Arctic region expected to occur as a consequence of the melting of the sea ice and the permafrost. This includes not only mineral exploitation, fishing, shipping, tourism and bioprospecting, but also infrastructure development, such as new roads, ports, pipelines and towns, as

⁴⁵ *Fourth Assessment Report, op. cit., supra*, note 8, section 15.4.3, is the basis for most of this section.

⁴⁶ “Russia to protect its trawlers in Spitzbergen waters”, *BarentsObserver*, 2008-03-27, available at: www.barentsobserver.com/russia-to-protect-its-trawlers-in-spitsbergen-waters.4469904-16179.html.

⁴⁷ “U.S. Coast Guard ramps up to patrol more-open Arctic waters”, presentation by Rear Admiral Arthur Brooks, commander of the 17th Coast Guard District, at the Alaska Business Roundtable on Climate Change, 14 February 2008, reported by the *Alaska Star*, 28 February 2008, www.alaskastar.com/stories/022808/new_20080228006.shtml.

well as an influx of people from the south. While economic development may seem desirable, especially in depressed regions with few opportunities for employment, current and future changes will have a very high cost, in environmental, human and financial terms.

Oil and Gas Development

Increased oil and gas development on land and new development offshore could have serious adverse environmental consequences, from accidental spills, operational pollution and general disturbance, during both the construction and the operational phases of oil rigs.⁴⁸ In the Arctic marine environment, large oil spills are usually considered to be the greatest threat, because they are difficult, if not impossible to clean up, although smaller diffuse releases may also have a serious adverse impact. Because of the vulnerability of the fragile Arctic environment, the impact of a large oil spill could be severe for Arctic species and ecosystems. Research into the aftermath of the Exxon Valdez spill in Alaska in 1989 has shown that the deleterious effects of oil spills on marine organisms and ecosystems can last for decades.⁴⁹

Environmental groups have condemned the sale in the pristine Chukchi Sea of oil and gas leases that open nearly 30 million acres of the sea to oil and gas exploitation. They attempted to have polar bears listed as endangered species in the hope that such a listing would impede oil and gas development in vulnerable areas, and complained about a long delay in listing, despite a finding by the US Geological Survey that two-thirds of the world's polar bears, including all of Alaska's bears, could disappear by 2050.⁵⁰ Although the listing has now taken place, albeit after the sale of the oil and gas leases in the Chukchi Sea, the current US government seems determined not to allow the listing to impede the development of energy resources.⁵¹

⁴⁸ "Arctic Oil and Gas 2007", *op. cit.*, *supra*, note 32.

⁴⁹ *Ibid.*

⁵⁰ "Arctic Oil Lease Sale Could Spell Disaster for Polar Bears, WWF says", <http://world-wire.com/news/0802060002.html>; "Feds seek more time for decision on listing polar bears", Associated Press (AP) 17 April 2008, www.auburnpub.com/articles/2008/04/17/ap/regional/us/d9040utg3.txt; U.S. Fish and Wildlife Service Alaska, <http://alaska.fws.gov/>; USGS Report: "Polar Bears in the Southern Beaufort Sea Ice: Survival and Breeding in Relation to Sea Ice Conditions, 2001–2006" by E. V. Regehr, C.M. Hunter, H. Caswell, S.C. Amstrup, and I. Stirling, at: <http://www.usgs.gov/newsroom/special/polar-bears/>.

⁵¹ Environmental News Service, "U.S. Lists Polar Bear as Threatened But Balks at New Protection", May 14, 2008, at: <http://www.ens-newswire.com/ens/may2008/2008-05-14-10.asp>.

Recently, Russian scientists have expressed concern about the environmental effects of exploiting the mineral resources of the continental shelf. A Russian news report in May 2008 stated that the Arctic has huge hydrocarbon reserves and that shallow shelf seas occupy 30% of the Arctic, 70% of which belongs to Russia. Russian experts maintain that the reserves of gas hydrates and condensates in the eastern Arctic shelves are comparable to their entire resources on land. Yet, it would be difficult to exploit them, as this would require huge investment, and entirely new technical potential, and innovative methods. Scientists are seriously worried about the negative consequences of economic activity on the shelves. For example, Professor Mikhail Flint, Deputy Director of the Institute of Oceanology, has said that:

The life of the ecosystems in the Arctic is short—from two to two and a half months. Unregulated navigation, active construction, and irrational mining may turn these sensitive systems into a heap of waste, which will be very hard to clean up. Any intervention into these systems is dangerous. A good example is the imprints left by SUVs in the tundra; they do not disappear for decades. Heat exchange starts in the grooves, which exerts a negative influence on the permafrost. The same may happen in the sea.⁵²

Ships and Shipping

As noted above, the environmental consequences of increased commercial shipping in the Arctic could also be quite serious, not only from accidental oil spills, but also from increased pollution caused by operational discharges of oils and chemicals. Arctic ecosystems will be affected by pollution, noise, alien species, ships colliding with marine mammals, habitat fragmentation, and general disturbance, including of feeding and breeding areas. Problems would be caused by ships involved in oil and gas exploration and exploitation, including tankers, as well as by general cargo vessels, naval vessels, fishing vessels, tourist cruise ships, and even scientific research vessels. Despite the seriousness of rare catastrophic oil spills, chronic low-level pollution over many years from all kinds of ships poses the greatest threat to the environment and may affect all ecosystems within a given area. Contaminants accumulate in the body fat of Arctic organisms because they have evolved to store food for use in their bodies when none is available in the frozen environment.

⁵² Novosti (Russian News and Information Agency), “The Arctic—melting ice reveals mineral wealth”, 01/05/2008, at: <http://en.rian.ru/analysis/20080501/106332122>.

These contaminants are then passed up through the food chain, even to human beings.⁵³

Tourism has increased dramatically in the Arctic, because of increased awareness of its beauty and grandeur and also because of a desire to see it before the ice melts and the animals disappear. However, excessive tourism could cause environmental damage, both from the usual problems caused by an increasing number of vessels and because waste from garbage and sewage would have to be disposed of.⁵⁴ More generally, as noted above, even if all the new single-year sea ice melts, navigation in the Arctic could remain hazardous for some time to come, as multi-year ice will linger and so will icebergs, in particular those calving off melting glaciers. This could result in more accidents, causing further problems, including pollution by leaking heavy fuel oil from cruise ships.⁵⁵

Fishing

In addition to problems caused by an increasing number of fishing vessels, uncontrolled fishing could bring other forms of damage in its wake, such as over-fishing; excessive by-catch, especially of sea birds; marine debris from discarded nets; habitat destruction; and various destructive fishing practices, such as bottom trawling. Fishing is considered to be possibly the greatest threat to the marine environment and marine biodiversity.

Marine Scientific Research and Bioprospecting

Although marine scientific research is essential for understanding marine ecosystems and for devising ways to protect the marine environment and marine biodiversity, scientific research is not always entirely benign and care must be taken not to damage the marine environment in the course of scientific inves-

⁵³ See, for example, K. A. Moe, “NSR activities—Environmental assessments”, in papers of the Northern Sea Route User Conference, at: <http://www.fni.no/insrop/execsum.htm>.

⁵⁴ The US Environmental Protection Agency recently published a Draft Cruise Ship Discharge Assessment Report regarding ships operating in Alaska that found ships routinely discharge massive amounts of poorly treated sewage and highly contaminated raw grey water into harbours and coastal waters, available at: http://www.epa.gov/owow/oceans/cruise_ships/disch_assess_draft.html.

⁵⁵ The parties to the Antarctic Treaty have asked the International Maritime Organization to prohibit ships operating in the Antarctic area from using heavy fuel oil, IMO DOC MEPC 57/21.

tigations. In addition, there are a number of problems associated with bioprospecting in extreme environments. Investigations with a commercial purpose should be controlled to ensure they do not harm the organisms they are targeting or the supporting ecosystem.⁵⁶

Consequences of Arctic Climate Change

In conclusion, the consequences for the Arctic of climate change *per se* could range from disturbing to devastating. Various feedback effects are exacerbating already unprecedented rapid change, with uncertain short- and long-term consequences. Furthermore, the prospects of economic development brought on by warmer temperatures and the melting of ice and permafrost, while welcome in many ways, could prove to be immensely destructive of fragile Arctic ecosystems and social systems, if not subjected to rigorous planning and control. Economic development must be carefully planned and controlled in order to be environmentally sustainable.

How is this to be achieved? The first step should be to investigate more thoroughly the current situation in the Arctic, to try to assess future developments, and to conduct environmental impact assessments as the basis for action. This means more intensive scientific research. As governments and scientists are becoming more aware of the enormity of the problems in the Arctic, this enhanced research is already taking place. Since all the states in the Arctic share the same or a similar environment and similar problems, the second step would be to elaborate collectively a sustainable development plan on the basis

⁵⁶ For a more detailed discussion of marine biodiversity and bioprospecting beyond national jurisdiction, see several reports by the United Nations, at: <http://www.un.org/Depts/los>: Reports of the Secretary-General on Oceans and the law of the sea, 2003–2007, with areas of focus for the United Nations Informal Open-ended Consultative Process on Oceans and the Law of the Sea (ICP): “Protection of vulnerable marine ecosystems”, A/58/95, 2003; “New, sustainable uses of the oceans, including the conservation and management of the biological diversity of the seabed in areas beyond national jurisdiction”, A/59/122, 2004; A/60/99, 2005; “Ecosystems and oceans”, A/61/156, 2006; “Marine Genetic Resources”, A/62/66, 2007; Report of ICP-8, A/62/169, 2007; Report for the first meeting of the Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction, A/60/63/Add.1, 2005; Report for the second meeting of the Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction, A/62/66/Add.2, 2007; and by the same author, “A New Regime for the Conservation and Sustainable Use of Marine Biodiversity and Genetic Resources Beyond the Limits of National Jurisdiction”, *International Journal of Marine and Coastal Law*, forthcoming.

of scientific assessments. The third step would then be to adopt decisions to implement the plan in a cooperative manner. To a certain extent, the first two steps have already been taken.

Scientific Research in the Arctic

Scientific research is essential for understanding and mitigating environmental change and degradation in the Arctic. In recent years, mounting concern and interest in rapid climate change in the Arctic has prompted intensified scientific research. In 2000, the Arctic Council commissioned a study of climate change in the Arctic, released in 2004 as the Arctic Climate Impact Assessment (ACIA). An important aspect of the study was an examination of the impact of climate on people in the Arctic. Other studies have followed. The Arctic Council has on-going programmes of monitoring, research and assessment of activities in the Arctic adversely affecting the environment and the inhabitants, including studies relating to climate change, acidification in the Arctic Ocean, Arctic haze, ultraviolet radiation, radioactivity, persistent organic pollutants, biodiversity, shipping, oil and gas, ecosystem-based management, environment and health, sustainable development, etc.⁵⁷ The Arctic Council is also involved in the International Polar Year (see below).

In April 2007, the IPCC issued its Fourth Report. Its Working Group II described some of the consequences of climate change in the Arctic and predicted further changes in the future. The IPCC explicitly relied on the ACIA for much of its assessment. It is important to note that the IPCC was examining the results of research that has to a certain extent been overtaken by subsequent discoveries. Further scientific research and observations published since the launch of the Fourth IPCC Report have shown that the Arctic climate is changing more rapidly than expected. At the same time, the United Nations Environment Programme (UNEP) was working on a report on the status of ice and snow on a world-wide basis, containing material on the Arctic that was more up to date. This report, the *Global Outlook for Ice and Snow*,⁵⁸ was launched at UNEP's annual celebration of International Environment Day in June 2007 with the theme "Melting Ice—A Hot Topic".⁵⁹ UNEP's *Global Outlook* was compiled in part to support the International Polar Year.

Just prior to the release of the IPCC report, the International Polar Year (IPY) was launched in Paris. In this major initiative of the World Meteor-

⁵⁷ See reports on Arctic Portal website, at <http://www.arcticportal.org/en/arctic-council2>.

⁵⁸ Available at http://www.unep.org/geo/geo_ice.

⁵⁹ For information see www.unep.org/wed/2007 and <http://www.wed.npolar.no>.

logical Organisation and The International Council for Science, thousands of scientists from over 60 countries are collaborating from March 2007 to March 2009 in a wide range of scientific research programmes covering both the Arctic and the Antarctic. They will take a full two years to investigate scientific questions through the seasons at both poles and in some cases will make comparisons between the situations at the north and the south poles. Fifty years ago, a similar international research programme, the International Geophysical Year 1957–58, led to the elaboration of the Antarctic Treaty, adopted in 1959, which established an international legal regime for the Antarctic, preserving it as a peaceful continent where sovereignty claims were frozen and dedicating it to international cooperation and scientific exploration (see further below).

A New Regime for the Arctic

A number of commentators have suggested that an agreement similar to the Antarctic Treaty be elaborated in order to establish a legally binding regime for the Arctic, focussing on the protection of the environment and the sustainable exploitation of the natural resources of the region.⁶⁰ Others consider that existing instruments suffice or that a legally binding agreement would be difficult to conclude.⁶¹ Certainly, up to the present there has been strong resistance to such proposals, in particular from the United States, and now, possibly from Denmark (see above). This could be, at least, in part, due to sovereignty concerns, including a wish to maintain cooperation with respect to land-based activities on a strictly voluntary basis. Moreover, it is highly unlikely that the Arctic states would be willing to give up or “freeze” their sovereignty, to refrain from resource exploitation, and to “internationalise” the area, turning it into a marine park or marine protected area, similar to the

⁶⁰ For example, see discussions of various proposals in: T. Koivurova and D. Vanderzwaag, “The Arctic Council at 10 Years: Retrospect and Prospects”, (2007) 40 *U.B.C. Law Review* 121; T. Koivurova, “Alternatives for an Arctic Treaty—Evaluation and a New Proposal”, (2008) 17 *RECIEL* 14–26, R. Rayfuse, “Melting Moments”, (2007) 16 *RECIEL* 196–216 and “Protecting Marine Biodiversity in Polar Areas Beyond National Jurisdiction”, (2008) 17 *RECIEL* 3–13. Two other proposals are somewhat confused from a legal point of view: WWF, “a new sea”, (2007), available at: <http://www.panda.org/arctic/>; and B.G. Sobel, I. Smith and A. Rosencranz, “The Melting and Partitioning of a Global Commons”, (2007) 37/6 *Environmental Policy and Law* 467–470.

⁶¹ For example, H. Corell, “Reflections on the Possibilities and Limitations of a Binding Legal Regime for the Arctic”, (2007) 37/4 *Environmental Policy and Law* 321–324.

Antarctic continental regime. Perhaps more surprisingly, states have also been unwilling to enter into a binding agreement on protection of the marine environment in the Arctic. However, because of recent events and the drastic alterations in the Arctic environment, attitudes may begin to change.

In its press release commenting on the findings of the IPCC on the impact of climate change in the Arctic, UNEP called for a sustainable development plan for the region.⁶² Thus, there are two parallel proposals to ensure the sustainable development of the Arctic: a comprehensive convention or a sustainable development plan. Which would be more effective, and which would be more feasible? In which forum would these instruments be negotiated and who would participate? How would this relate to the Arctic Council? In fact, the two proposals are not necessarily opposed, but could be combined, by negotiating a sustainable development plan within the context of a binding legal regime. Furthermore, a basis for a detailed and up-to-date sustainable development plan has already been elaborated in the form of the Arctic Marine Strategic Plan,⁶³ together with a number of other plans and assessments adopted by the Arctic Council.

The Existing Regime in the Arctic

Although there is no overall international legal regime governing the Arctic, a number of international treaties apply, in particular the LOSC, which, as stated above, provides rules concerning maritime boundaries, claims to an outer continental shelf, sovereign rights over resources, and the protection of the marine environment. All the Arctic states are parties to the LOSC, except the United States, whose Senate is currently contemplating accession.

Other relevant global conventions include: the United Nations Framework Convention on Climate Change, the Convention on Biological Diversity (CBD), a broad range of conventions and other instruments adopted by the International Maritime Organization, the London (Dumping) Convention 1972 and its 1996 Protocol, the Convention on International Trade in Endangered Species (CITES), the Stockholm Convention on Persistent Organic Pollutants (POPs), and the Ramsar Convention on Wetlands of International

⁶² UNEP, “Adaptation to Climate Change Key Challenge for Arctic Peoples and Arctic Economy: Thawing Permafrost, Melting Sea Ice and Significant Changes in Natural Resources Demands Comprehensive Sustainable Development Plan”, press release 10 April 2007, <http://www.unep.org>.

⁶³ Adopted 24 November 2004, available at: <http://arcticportal.org/pame/amsp>.

Importance. Non-binding instruments include the Declaration of Principles and Agenda 21 adopted by the 1992 United Nations Conference on Environment and Development and the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, as well as the 2002 World Summit on Sustainable Development and its Johannesburg Plan of Implementation.⁶⁴

Some regional conventions are also relevant, including the Convention on the Protection of the North-East Atlantic (OSPAR) and the Convention on Future Multilateral Co-operation in the North East Atlantic Fisheries (NEAFC), both of which extend to a certain extent into the Arctic region. As noted above, cooperation for the protection of the Arctic environment is undertaken within the Arctic Council.

While the LOSC establishes the rules concerning the division of ocean space, activities on and under the high seas, sovereign rights over resources, and jurisdiction over marine scientific research and protection of the environment, in many cases, in particular in relation to fisheries and environmental protection, these provisions are expressed at the level of general principles. In such cases, the Convention requires states to adopt, keep under review and revise global and regional agreements concerning international fisheries and the protection of the marine environment.

With respect to international fisheries, Articles 63 and 64 require states to cooperate in the conservation and management of straddling fish stocks and highly migratory fish stocks, and to establish regional fisheries organisations to this end.⁶⁵ Articles 116–119 on fisheries on the high seas require states to cooperate for the conservation and management of high seas fisheries and to establish subregional or regional fisheries organisations, if appropriate. A considerable number of international agreements have been adopted to implement these provisions at both the regional and the global levels. At the global level, instruments include the UN Fish Stocks Agreement, and several instruments adopted under the auspices of the Food and Agricultural Organization of the United Nations (FAO), including: the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (FAO Compliance Agreement) and the FAO Code of Conduct for Responsible Fisheries. (See below for more information.)

In Part XII on the Protection and Preservation of the Marine Environment, Articles 192 to 237 require states to protect the marine environment, rare and

⁶⁴ See also list compiled for the seminar on Multilateral Environmental Agreements and their relevance to the Arctic, held 21–22 September 2006, Arendal, Norway: <http://polar.grida.no/activities.cfm?pageID=5>.

⁶⁵ If appropriate under Article 63, and mandatory under Article 64.

fragile species and habitats and to adopt multilateral agreements to address specific issues of marine degradation. Section 1 enunciates general principles; section 2 mandates global and regional cooperation; section 3 provides for technical assistance to developing countries; section 4 requires monitoring and environmental assessment; section 5 requires states to adopt international and national legislation to protect the marine environment from degradation from all sources; section 6 covers enforcement; section 7, safeguards and section 8, ice-covered areas. Included in these provisions are requirements for notification of imminent or actual damage, joint contingency plans by states in an area, scientific studies and research programmes, monitoring of risks of environmental damage, publication of reports and environmental impact assessments.

Article 197 requires states to cooperate on a global and, as appropriate on a regional basis, to elaborate international rules, standards and recommended practices and procedures for the protection and preservation of the marine environment, taking into account characteristic regional features. Part IX of the LOSC, comprising Articles 122 and 123, requires states surrounding enclosed or semi-enclosed seas to:

- 1) cooperate with each other in the management, conservation, exploration and exploitation of the living resources of the sea,
- 2) coordinate their work on the protection and preservation of the marine environment,
- 3) coordinate their scientific research policies and undertake joint programmes of research, and
- 4) invite other states to cooperate with them in furtherance of the provisions of the article.

Furthermore, Article 234 on ice-covered areas recognises the need for coastal states to take special measures to protect the environment in ice-covered areas. Taken together, these provisions seem to be a mandate for regional cooperation on marine issues in the Arctic, not only on an *ad hoc* voluntary basis, as with the Arctic Council, but also in the form of a binding regional agreement.

Regional Seas and Fisheries Agreements and the Antarctic Treaty as Models

Many precedents and models already exist for an Arctic regional agreement dealing with marine issues, in the form of regional seas agreements and regional fisheries agreements.

Regional Seas Agreements

In order to implement Part XII of the LOSC at the regional level, states have concluded 18 regional seas agreements and/or action plans.⁶⁶ More than 140 countries participate in 13 Regional Seas programmes established under the auspices of UNEP: the Black Sea, Wider Caribbean, East Africa, South East Asia, ROPME Sea Area, Mediterranean, North-East Pacific, North-West Pacific, Red Sea and Gulf of Aden, South Asia, South-East Pacific, Pacific, and West and Central Africa. Furthermore, there are independent programmes for the Antarctic, Baltic Sea, Caspian Sea and North-East Atlantic Regions. Most regional agreements have annexes or protocols dealing with the various aspects of protection of the environment called for in Part XII of the LOSC and some have adopted an ecosystem approach to managing human activities and to the protection of biodiversity and the marine environment.

Perhaps the most relevant regional instrument and one to provide inspiration for a future Arctic regime is the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention).⁶⁷ Furthermore, because the geographic scope of OSPAR extends into the Arctic, cooperation with a new Arctic regime would be essential. The OSPAR

⁶⁶ See website for the regional seas at: <http://www.unep.org/regionalseas/> for more information and links to the texts of convention sites. The conventions are: Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention); Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region; Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region; Convention for Co-operation in the Protection and Development of the Marine and Coastal Environment of the West and Central African Region; Convention on the Protection of the Black Sea Against Pollution; Convention for Cooperation in the Protection and Sustainable Development of the Marine and Coastal Environment of the Northeast Pacific; Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment; Kuwait Regional Convention for Cooperation on the Protection of the Marine Environment from Pollution; Convention for the Protection of the Marine Environment and Coastal Areas of the South-East Pacific; Convention for the Protection of Natural Resources and Environment of the South Pacific Region; Antarctic Treaty, Protocol on Environmental Protection to the Antarctic Treaty, The Convention on the Conservation of Antarctic Marine Living Resources; Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki Convention); Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention).

⁶⁷ The Convention for the Protection of the Marine Environment of the North-East Atlantic (Paris), 22 September 1992, 21 *International Legal Materials* 1068 (1993); see website at: <http://www.ospar.org> for more information, and for background see: L. de La Fayette, "The OSPAR Convention Comes into Force: Continuity and Progress", (1999) 14 *International Journal of Marine and Coastal Law* 247–297.

Convention is one of the most developed of the regional seas conventions, with a main convention containing general obligations and principles and five annexes covering: 1) the prevention and elimination of pollution from land-based sources, 2) the prevention and elimination of pollution by dumping and incineration, 3) the prevention and elimination of pollution from offshore sources, 4) the assessment of the marine environment, and 5) the protection and conservation of ecosystems and biological diversity of the maritime area. Implementation of the OSPAR Convention is carried out by the OSPAR Commission and several subsidiary groups working in accordance with the ecosystem approach. OSPAR has adopted six strategies on the following subjects: protection and conservation of marine biodiversity and ecosystems, eutrophication, hazardous substances, offshore oil and gas industry, radioactive substances and monitoring and assessment. OSPAR has had joint meetings to discuss issues of mutual concern with NEAFC and the Helsinki Commission, which implements the Convention on the Protection of the Marine Environment of the Baltic Sea Area.⁶⁸

While the work of OSPAR could provide a model for a new Arctic regime to a certain extent, it does not cover navigation or fisheries, and the management of both is essential for the application of an integrated ecosystem approach.

International Fisheries

The LOSC, the UN Fish Stocks Agreement (UNFSA)⁶⁹ and the FAO Code of Conduct for Responsible Fisheries⁷⁰ all provide for the conservation and management of international fisheries through regional fisheries agreements and arrangements and regional fisheries management organisations (RFMOs).⁷¹ The UNFSA, which was designed to provide more detail for the implementa-

⁶⁸ Done at Helsinki, 9 April 1992, 2099 UNTS 197. For text of the Helsinki Convention and information about measures taken by the Helsinki Commission, see website at: <http://www.helcom.fi>.

⁶⁹ Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, signed 4 December 1995, in force 11 December 2001, 34 ILM 1542 (1995). Information and text at: www.un.org/Depts/los.

⁷⁰ For texts of the UNFSA, the FAO Compliance Agreement and the FAO Code of Conduct, see: Food and Agricultural Organization of the United Nations, *International Fisheries Instruments with Index*, Division for Ocean Affairs and the Law of the Sea, United Nations, New York, 1998. FAO instruments are also available online at: <http://www.fao.org/fi>.

⁷¹ For a list and description of regional fisheries bodies, see the website of the FAO Fisheries Division, at: <http://www.fao.org/fi>.

tion of Articles 63 and 64 of the LOSC, relies on regional fisheries agreements for its implementation and provides considerable guidance for their establishment and functioning. These address either particular species, such as tuna, or all fisheries within a specific region. The United Nations General Assembly has urged states to establish new RFMOs where none exist and to expand the competence of existing RFMOs to apply the ecosystem and precautionary approaches and to protect biodiversity from destructive fishing practices.⁷² The regulatory area of NEAFC extends to a certain extent into the Arctic⁷³ and the North Atlantic Salmon Organisation (NASCO)⁷⁴ applies to salmon migrating into the Arctic; however, there is no regional fisheries agreement covering the entire Arctic Ocean. Up until now, this has not been a problem because there has not been extensive fishing in the central Arctic Ocean, but with some fish stocks moving north, cooperation in conservation and management of fisheries will be required.

The Antarctic Treaty System

The Antarctic Treaty system, comprising several instruments (see below), could provide some inspiration for an Arctic regime, at least on the level of general principles and issues covered. However, the geographical and political situation in the Antarctic is very different from its northern counterpart and the system has grown in an *ad hoc* manner over the years. Geographically, the Arctic is the exact opposite of the Antarctic, which is a large body of ice-covered land surrounded by sea. Although sovereignty over most of the Antarctic land territory is claimed by several states, these claims have not been universally recognised and have been “frozen” by the Antarctic Treaty, which established a legal regime for the area, including the surrounding waters, up to 60°S. Other differences with the Arctic are the lack of a permanent indigenous population in Antarctica and a ban on the exploitation of mineral resources in the 1991 Madrid Protocol on Environmental Protection. The legal situation regarding claims to the outer limits of the continental shelf is unclear.

⁷² UNGA Resolution 62/177, adopted on 18 December 2007; see also paras. 5, 82, 85, and 93; available at <http://www.un.org/Depts/los>.

⁷³ See NEAFC website at: <http://www.neafc.org>. There is also a “bilateralist” regime in the Barents Sea. See O.S. Stokke, “The Loophole of the Barents Sea Fisheries Regime”, in O.S. Stokke (ed.) *Governing High Seas Fisheries: The Interplay of Global and Regional Regimes*, Oxford University Press, 2001, pp. 273–301.

⁷⁴ See NASCO website at: <http://www.nasco.int>.

The Antarctic Treaty System (ATS) includes: the Antarctic Treaty, 1959;⁷⁵ the Convention for the Conservation of Antarctic Seals, London, 1972 (CCAS); the Convention on the Conservation of Antarctic Marine Living Resources, Canberra, 1980 (CCAMLR);⁷⁶ and the Protocol on Environmental Protection to the Antarctic Treaty, Madrid, 1991.⁷⁷ The Treaty provides that Antarctica is to be used for peaceful purposes only and that its main purpose is to facilitate scientific research. The underlying principles of the entire regime are cooperation among the parties for: the governance of Antarctica, protection of the environment, conservation of natural resources and scientific research. A large number of Measures and Decisions adopted by the parties at their biennial, and later annual, meetings aim to protect the environment, including the marine environment of the Antarctic area. Recent issues that have assumed increasing importance over the years are the threat posed by excessive tourism and the question of whether and how to regulate bio-prospecting for genetic resources.

Ideas that might be taken from the ATS for a new Arctic regime are: the importance of scientific research, the need to conserve natural resources, the principles of environmental protection in the Madrid Protocol, and the ecosystem approach, first incorporated in treaty form in CCAMLR. Although mainly a regional fisheries agreement, CCAMLR also has a mandate to protect the entire Southern (Antarctic) Ocean ecosystem. Although legally separate, CCAMLR participates in the ATS and parties to the Madrid Protocol are bound to respect its provisions.

The Arctic Council

The Arctic Council was established in 1996 by the Ottawa Declaration as a forum for discussion and cooperation among the eight Arctic States, with the participation of six associations of indigenous peoples (Permanent Participants). It is not an international organisation and does not have the power to

⁷⁵ Done at Washington, 1 December 1959; in force 23 June 1961; 402 *UNTS* 71 165.

⁷⁶ Done at Canberra, 20 May 1980; in force 1982, 19 *I.L.M.* 841. For text and comprehensive information, see website of the Commission for the Conservation of Antarctic Marine Living Resources, at <http://www.ccamlr.org>.

⁷⁷ Protocol on Environmental Protection, Madrid, 4 October 1991; in force 14 January 1998; 30 *ILM* 1461 (1991) 335, 343, 358. For a recent reappraisal of the Antarctic Treaty System, see: G. Triggs and A. Riddell, (eds.) *Future Challenges for the Antarctic Treaty Regime*, British Institute of International and Comparative Law, London, 2007. The book includes the texts of all the ATS instruments in an annex.

adopt legally binding decisions. Its main concerns are to protect the environment and the interests of native people and to assess possibilities for sustainable development. Ministerial meetings are held every two years in the country holding the rotating chairmanship. There is no permanent secretariat. There are six Working Groups: Arctic Contaminants Action Plan (ACAP), the Arctic Monitoring and Assessment Programme (AMAP), Conservation of Arctic Flora and Fauna (CAFF), Emergency Prevention, Preparedness and Response (EPPR), Protection of the Arctic Marine Environment (PAME), and Sustainable Development Working Group (SDWG).

As noted above, the Arctic Council commissioned ACIA, the landmark study of the effects of climate change in the Arctic, and has followed it up with a number of other assessments, including those on oil and gas, biodiversity and shipping. The Council has also adopted several action plans and guidelines. A number of scientific research programmes are underway and the Council collaborates to a certain extent with other organisations. However, the work is fragmented and hampered by the lack of funding, of a firm legal structure and of a permanent secretariat. As a “soft law” institution producing assessments and recommendations, the Council lacks force, as well as an effective integrated structure. Norway, Denmark and Sweden have taken some steps towards improving coherence by agreeing on common objectives for their successive chairmanships, as well as a common secretariat from 2006 to 2012.⁷⁸

In addition to a lack of solid structure, a secretariat and dependable funding, the Arctic Council suffers from some substantive limitations. First, the Council does not address fisheries issues, which is a serious lacuna when dealing with environmental protection and biodiversity conservation, since fishing is one of the greatest threats to both. Second, while the Arctic Council is conducting a shipping assessment, it does not have the authority to adopt legally binding shipping regulations. Such regulations, which could bind all states that become parties to the relevant treaties, are established by the International Maritime Organization (IMO). If Arctic states wish to have new shipping regulations to protect the Arctic environment, they must submit a proposal to IMO. Third, the Arctic Council does not have a follow-up or compliance mechanism to determine whether plans are being implemented or guidelines are being followed.⁷⁹

⁷⁸ See website for further information: www.arctic-council.org.

⁷⁹ See article by T. Koivurova and D. Vanderzwaag, “The Arctic Council at 10 Years: Retrospect and Prospects”, *op. cit., supra*, at note 60 for a review and critique of the Council’s functioning.

Navigation and the International Maritime Organization

IMO, the UN specialised agency dealing with international shipping activities, has adopted over 40 instruments addressing shipping safety and security and the protection of the marine environment.⁸⁰ Shipping regulations have to be adopted at the international level in order to be uniform in all oceans and seas and binding on all states and their ships. However, measures to protect the marine environment are more stringent in areas that require special protection due to the sensitivity of the marine environment and the nature and amount of shipping. Such protection is afforded by Special Areas under the International Convention for the Prevention of Pollution from Ships (MARPOL) and through the Guidelines for Particularly Sensitive Sea Areas (PSSAs).⁸¹ The Antarctic marine area, the Baltic Sea, the seas off Northwest Europe and several other seas are Special Areas, and a number of PSSAs have been designated around the world.⁸²

In December 2002, IMO adopted the *Guidelines for Ships Operating in Arctic Ice-Covered Waters*,⁸³ which are currently being updated and expanded to include the waters around Antarctica. Although focused on ship construction and safety issues, the *Guidelines* should help to protect the environment by preventing accidents that could have adverse environmental consequences. On 4 April 2008, IMO decided to initiate work on guidance for *Oil Spill Response in Ice and Snow Conditions*, as proposed by the United States.⁸⁴

Protection of Marine Biodiversity

Marine biodiversity in the Arctic is severely threatened by climate change and by the increase in human activities that change might bring. While Arctic

⁸⁰ See IMO website for further information, including summaries of instruments and meetings: <http://www.imo.org>. IMO documents are confidential and not available to the public online, except for circulars.

⁸¹ For information of the work of IMO regarding protection of the marine environment, see: L. de La Fayette, “The Marine Environment Protection Committee: Conjunction of the Law of the Sea and International Environmental Law”, (2001) 16 *International Journal of Marine and Coastal Law* 163–234, and a comprehensive review prepared by the IMO secretariat in 2007 to celebrate the work of IMO in this field, “IMO’s response to current environmental challenges”, (2007) *IMO News*, Issue 2, pp. 14–29.

⁸² IMO Doc MEPC 57/7/1 and Corr.1 contains a list of PSSAs adopted up to April 2008.

⁸³ IMO circular MSC/Circ.1056—MEPC/Circ.399, often erroneously referred to as “The Polar Code”, available on IMO website, *op. cit.*, *supra*, note 79.

⁸⁴ IMO Docs MEPC 57/6 and MEPC 57/WP.10 (report of the Marine Environment Protection Committee on its 57th session, April 2008).

states have the jurisdiction to protect marine organisms within their territorial seas, EEZs and on their continental shelves, there is no global or regional agreement specifically addressing the protection and sustainable use of marine biodiversity beyond the limits of national jurisdiction. The issue of marine biodiversity beyond national jurisdiction is currently being discussed at the United Nations, in the context of the CBD, and within some regional agreements. Until now, there has not been much human activity in the central Arctic Ocean to pose a threat to any animals in the area. However, with the melting ice, such as navigation and fisheries, if not mineral exploitation, might begin to move beyond areas beyond coastal state jurisdiction and some means will have to be found to protect biodiversity in the ocean. Any such measures should be consistent with any principles, rules, measures or instruments adopted by the UN General Assembly.⁸⁵

An Integrated, Ecosystem Approach in a New Agreement for the Arctic

With the accelerated melting of sea ice and glaciers in the past two years, the Arctic marine environment has reached a crisis point. It is now time to reconsider strengthening oceans governance in the Arctic by the adoption of a regional seas agreement and by the establishment of a fully-fledged international organisation to address marine environmental issues of common concern. The agreement and the organisation could follow the models provided by the existing agreements, setting out the purpose of protection of the marine environment, biodiversity and living marine resources, and outlining general principles and basic obligations, with protocols or annexes dealing with the various issues contained in Part XII of the LOSC and the regional seas agreements. The Arctic regional sea agreement should cover the EEZs of the Arctic coastal states as well as the high seas of the central Arctic Ocean.

The new agreement could be negotiated within the context of the Arctic Council and could assume its responsibilities, its working groups, and its members. Like the other regional agreements, it would have a permanent secretariat and a permanent budget and be able to adopt binding decisions as

⁸⁵ See discussion in de La Fayette, "A New Regime for the Conservation and Sustainable Use of Marine Biodiversity and Genetic Resources Beyond the Limits of National Jurisdiction", *IJMCL* 2009, forthcoming, and reports by the United Nations cited therein, as well as the reports by the Earth Negotiations Bulletin of the most recent (April–May 2008) meeting of the United Nations Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction, at <http://www.iisd.org>.

well as recommendations and resolutions. Bringing all the issues together within a structured legally binding framework would facilitate the elaboration of an overall plan for sustainable development and would help to ensure its implementation. However, in order to provide for an integrated, ecosystem approach to oceans management, it is essential that, unlike the other agreements, the conservation and management of fisheries be included in the Arctic agreement. The Arctic Organisation should be able to oversee and to manage in an integrated fashion all activities and all potential sources of environmental degradation within the region.⁸⁶ One signal weakness of the regimes in other regions is that protection of the marine environment and fisheries are dealt with by different organisations. This makes the protection of marine biodiversity and the ecosystem approach to oceans management difficult, if not impossible to apply.

Recognising this problem, the UN General Assembly has repeatedly urged regional seas organisations and regional fisheries bodies to cooperate. In practice, however, such cooperation is difficult to implement once separate organisations have been established, as they tend to jealously guard their independence. Much better, therefore, to address all the relevant issues within one organisation, with, of course, the exception of shipping regulations, as ships from all over the world may operate in the Arctic region and the same rules must apply to all. However, the Arctic states could apply to IMO to adopt additional measures to protect the Arctic from an expected increase in shipping activities, besides the existing “Guidelines”, which focus on shipping safety. These additional environmental measures could include the designation of the entire Arctic Ocean as a Special Area under MARPOL, the creation of PSSAs in certain areas, and the adoption of other measures to address problems such as those identified in the Antarctic in a document submitted to IMO by non-governmental organisations (NGOs).⁸⁷

The measures adopted by IMO could then be confirmed and guidelines could even be made legally binding through Decisions taken by the members of the Arctic Ocean Organisation or in an annex or protocol devoted to shipping (see the Helsinki Convention and the Madrid Protocol for models). This type of procedure could side-step sovereignty issues relating to passage through the NWP and the NSR. Even if Canada and Russia consider the sea areas in question to be internal waters, they could obtain the environmental protection they wish by working together with other states at IMO and in the con-

⁸⁶ Many of the sources of environmental degradation lie outside the Arctic. These include climate change, ozone depletion, and the discharge of persistent organic pollutants.

⁸⁷ IMO Doc. MEPC 57/INF. 19.

text of a new Arctic Ocean Organisation. It might be noted here that the Arctic Council shipping assessment is being led by Canada, Finland and the US, while the revision of the IMO Guidelines for Arctic ice-covered areas is being coordinated by Canada. Measures adopted at IMO are usually adopted by consensus and are applicable to the ships of all states.

More generally, it should be noted that there is already a considerable amount of cooperation in the Arctic. The vision of military conflict or a battle for territory and resources is wholly imaginary. States have agreed many of their boundaries and are working on the rest. Canada and Denmark will discuss sovereignty over Hans Island, but they are already collaborating on scientific projects, including on the island and on surveying the outer limits of the continental shelf. Canada has also suggested cooperation with Russia and the US on continental shelf surveys. Russia has agreed to let the CLCS go ahead with consideration of the Norwegian claim. The question of navigation through the NWP was stabilised, if not settled, by Canada and the US in a compromise agreement in 1988.⁸⁸ In any event, some commentators believe that because of security concerns, the US is now more willing to have the NWP completely under Canadian control. That would be preferable to having it freely open to all comers. The existing “soft” cooperation within the Arctic Council, with all the Arctic states and the native people involved, could be strengthened and enhanced, and be given a higher public and political profile by being placed on a firm legal footing in an international agreement and in a formal international/regional organisation with the power to take decisions.

Conclusion

Relations between states in the Arctic are by no means as negative as many people believe. Journalists and political scientists like to see conflict, as it is their job to report it, analyse it and comment on it. Conflict is news; cooperation is boring and ignored. However, lawyers have a broader view, because they see the legal structures, as well as the political differences, and they understand that environmental issues and technical problems (like navigation through ice-covered waters) need and to a large extent, already have legal solutions. There is a firm legal structure providing a solution for many Arctic issues with a potential for much more. The principles and rules for establishing maritime boundaries and the outer limits of the continental shelf are set

⁸⁸ Canada-U.S. Agreement on Arctic Cooperation, 11 January 1988, C.T.S. 1988/29.

out in the LOSC—the Constitution for the Oceans—and all of the states involved are pursuing those routes. Only once all the boundaries are settled can the exploitation of resources begin. However, before that can happen, precautionary measures have to be adopted to ensure that the environment is protected as much as possible.

This would require the elaboration of a regional seas agreement for the Arctic that reiterates the general principles in Part XII of the LOSC as well as those in the UNFSA, including the precautionary approach and the ecosystem approach. The agreement should include specific measures set out in annexes or protocols covering issues commonly addressed in other regional agreements, such as: monitoring, environmental impact assessment, land-based activities, waste management, ocean dumping, contingency planning and emergency response, environmental impacts of oil and gas exploitation, conservation of biodiversity, conservation and management of fisheries, shipping, air pollution and possibly bioprospecting. Provisions concerning continuing cooperation in scientific research are crucial, as the Arctic is being relentlessly transformed by the uncertain but potentially disastrous consequences of rapid climate change. A sustainable development plan should be elaborated on the basis of the Arctic Marine Protection Strategy and its follow-up, as well as subsequent scientific assessments. The action plan should be formally adopted and then implemented through a series of legally binding measures and decisions.

The crisis in the Arctic has arrived, urgent action is required to protect the environment and marine ecosystem, and the relevant principles and precedents exist. Since they share a common ocean and common challenges and since they already cooperate to a considerable extent, the Arctic states should find the political will to go one step further to organise and consolidate their efforts in a new regional seas agreement and a forward-looking plan for sustainable development in the Arctic.