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Arctic Legal Regime for Environmental Protection

Linda Nowlan

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Preface

For many years, concerns have been expressed about environmental issues in the Arctic. This interest was again evident during the World Conservation Congress 2000, when the IUCN membership unanimously adopted a Resolution recognising the circumpolar Arctic as a priority ecosystem, calling also for the preparation of an Arctic Strategy and Action Plan.

The publication presented here is intended to assist those working on the Arctic legal regime as well as IUCN members concerned with the development of this Arctic strategy and plan. We are very grateful to Linda Nowlan, who is both the Executive Director of the West Coast Environmental Law and a member of the IUCN Commission on Environmental Law, for providing this excellent and comprehensive approach to the issues.

Recent science details the threats to this unique ecosystem. While the Arctic region – unlike Antarctica – has been inhabited for thousands of years, it is under unique threat because of its vulnerability toward resource exploitation and the deposition of various airborne pollutants. With its varied populations, and with eight Nations asserting territorial interests, the Arctic needs a careful approach to its protection and development. Various legal initiatives have arisen from this political amalgam, including the legal arrangements applicable to the Arctic set forth in global treaties such as the United Nations Convention on the Law of the Sea and the Convention on Biological Diversity, and in regional arrangements emanating from the Long Range Treaty on Atmospheric Pollution. Such legal arrangements represent binding approaches, but for many issues within the Arctic, such as mining extraction, a non-binding approach applies, unlike in Antarctica. This "soft law" approach began with the Declaration on Protection and the Arctic Environmental Protection Strategy (AEPS), a voluntary mechanism adopted in 1991 by the "eight Arctic countries". When the Arctic Council was created in 1996, it took over the responsibility for policies and programs developed under the AEPS. The Arctic Council has been viewed as continuing the tradition of the soft law approach, and other non-binding instruments have followed.

The IUCN Environmental Law Centre and the International Council of Environmental Law (ICEL) have initiated this work in order to explore whether the current approach can sufficiently address the threats to the Arctic. It is especially important to learn from the experience gained from the Antarctic Treaty regime. While, as Ms. Nowlan points out, these regions are in many ways "polar opposites", she quite rightly also notes that they have many similarities. Therefore, this review of these legal and policy contrasts can help us consider future directions for the Arctic legal regime.

With the help of a generous grant from the Elizabeth Haub Foundation (Canada), IUCN and ICEL are pleased to be able to add this important paper to the current discussion.

Charles Di Leva
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Aknowledgments

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Executive Summary

This report describes the current Arctic environmental legal regime. The report also discusses the possibility of negotiating a sustainability treaty for the Arctic, with similar high standards of environmental protection as those in the 1991 *Protocol on Environmental Protection* to the *Antarctic Treaty*. The Arctic treaty could encompass the sustainable development focus of the Arctic Council, and enshrine innovative legal approaches already in use, such as the unique role of indigenous peoples.

Current Legal Regime

The Arctic legal regime consists of a series of "soft law" agreements, which started with the 1991 *Declaration on Protection of the Arctic Environment* and the Arctic Environmental Protection Strategy (AEPS). The AEPS was absorbed into the work of the Arctic Council, created in 1996. The AEPS was never legally binding, unlike comparable agreements in the Antarctic. The Arctic Council is a high level intergovernmental forum. It conducts work through five Working Groups. The major activities of the Working Groups are briefly summarized in the report.

All land areas fall under the uncontested sovereignty of one of the eight Arctic states (Canada, Denmark/Greenland, Finland, Iceland, Sweden, Norway, Russia and the United States) and so national domestic laws contain the primary legal controls on the environment. However, international environmental laws and principles play an increasing role in this legal regime.

The report provides an overview of the global treaties and agreements that apply to the Arctic region. Global agreements and treaties affect protection of the Arctic environment, and some were designed to address environmental problems that surface most acutely in the Arctic. Many of the most urgent Arctic environmental issues, such as climate change and persistent organic pollutants can only be solved through global, multilateral approaches as the roots of these problems lie outside the Arctic.

The Arctic and Antarctic Legal Regimes

Comparisons with the well-developed Antarctic Treaty System (ATS), consisting of three treaties and one comprehensive *Protocol on Environmental Protection*, inevitably arise when considering the relatively undeveloped Arctic legal regime. The report compares the environmental legal regimes of the two polar regions.

The polar regions are polar opposites in many respects. In the Antarctic, land, rather than the ocean is the focus of the legal regime. The absence of an indigenous population and traditional way of life also distinguishes the South from the North Pole. Industrial and resource development, starting in 19th century with whaling and sealing, continuing with mining, hydrocarbon and other industrial development, is more extensive in the Arctic than the Antarctic and has resulted in more substantial environmental impacts. Another distinguishing factor is that Antarctica is non-militarized while the Arctic is highly strategic, militarized territory. The Arctic has a population of about 3.8 million, while the Antarctic has no permanent resident population, and is visited by only about 15,000 tourists a year.

Conversely, similarities between the two regions abound. Both regions have fragile environments susceptible to damage from outside sources. The poles are empty, inaccessible, and harsh.

Extreme climactic conditions prevail. Unique flora and fauna set these regions apart from more temperate zones.

Antarctica, as a single continent, with no indigenous or permanent human inhabitants, and no commercial or industrial activities, is more easily governed by a single comprehensive environmental treaty regime. Resolution of sovereignty over the Antarctic land mass and its offshore areas has dominated legal discussions in that region, issues suited to be resolved by a treaty system. The Arctic, on the other hand, is a region dominated by the existing national legal systems of the eight Arctic states, which cover not only their land areas but their marine territories, to the limit of the 200 nautical mile exclusive economic zone. The inhabitants of this region require a legal regime that permits them to thrive, while at the same time protecting the fragile environment.

Adequacy of Current Arctic Environmental Legal Regime

A key question is whether the environmental protection provisions implemented on the national territory of the Arctic states and the coordinated activities of the Arctic Council and its' Working Groups are sufficient to protect the Arctic.

There are numerous holes in the Arctic environmental legal regime when compared to the comprehensive regime in place in the Antarctic. Despite the differences that a large resident population and industrial development make, both polar regions are barometers of the global environmental protection system. PCB laden whale tissue, melting ice from greenhouse gases produced thousands of miles away, and declining populations of some charismatic polar species show that the Arctic environment is not yet adequately protected.

In general, pollution is more adequately addressed by binding legal agreements than biodiversity protection, both by the global agreements in place, and by the Arctic Council. The legal regime is weaker when considering protection of species and spaces and the rich biodiversity of the still relatively untouched Arctic.

Need for a New Arctic Environmental Agreement

Opinion is split on the need for a region wide treaty, though many conservation organizations, scientists, government representatives and academic experts favour a new Agreement.

The main advantage of a treaty is the potential for increasing states' obligations to protect the environment through the elaboration of enforceable targets, timetables, and scheduled dues. A binding legal agreement could attract more serious attention from states.

Much of the substance of a framework agreement is already in place. It may be relatively easily to formalize an Arctic Council agreement, enshrine the mandates of the five Working Groups of the Council, and add innovative features designed to address the particular needs of the Arctic. The change from a strategy coordinated by Arctic states, the AEPS, to an organization that includes the Strategy and other work elements, the Arctic Council, happened in a relatively short time frame. As the pace of change accelerates in the Arctic, converting the Arctic Council agreement into a more comprehensive treaty may be warranted. The precautionary principle may be incorporated into a new treaty to ensure that one of the last of earth's great wilderness areas remains intact.

Unlike the Antarctic, whose legal regime developed to stall territorial claims, halt militarization and preserve a pristine environment for scientific research, the Arctic's nascent structure includes the development needs of people. There is no Northern movement to replicate the "nature reserve" at the South Pole. The Arctic Council is one of the first regional governance bodies devoted to environmental protection. With the addition of the Working Group on Sustainable Development,

the Council's focus has shifted to encompass sustainable development. A new Agreement could reflect this sustainability focus.

The main argument against a new treaty is that the current soft law arrangement is relatively new and it is too early to evaluate whether it needs to be supplemented by an enforceable treaty. Arctic states may be unlikely to want to invest time and energy into a treaty at this stage.

The Arctic has become a hotbed of innovative approaches to governance. A new agreement or treaty could incorporate the innovations that have been adopted to date; and could seek to use new innovate approaches.

For example, a regional agreement could build on the special role afforded to indigenous groups as Permanent Participants in Arctic Council.

Although devolution of regulatory powers through a co-management regime will remain a subject for domestic law, a regional agreement could encourage more widespread use of this legal tool.

An expanded role for traditional ecological knowledge is also a possible topic for inclusion in a regional environmental agreement.

The use of impact and benefit agreements is another innovative feature in some Arctic states. Standardization of this requirement could go a long way to achieving sustainable development in the Arctic region. Allowing some resource development to proceed in less ecologically sensitive areas, with the full involvement of affected residents of the region and complete legally enforceable agreements for mitigating harmful impacts and sharing benefits would be a step beyond traditional environmental impact assessment towards a sustainable future.

I. The Arctic Legal Regime – Moving from Environmental Protection to Sustainability?

The fragile Arctic is under growing environmental stress. Accelerated resource extraction, industrial expansion and distant polluting activities threaten the ecological integrity of one of the world's last great wilderness areas. To better protect the environment, the Arctic soft law regime could be expanded and strengthened. Whether a revitalized Arctic environmental regime should be modeled on the Antarctic treaty regime and subject to a legally binding treaty is the subject of ongoing debate.[1]

This report discusses the current Arctic regional environmental legal regime; assesses the applicability of global treaties and soft law agreements to the Arctic; compares the regimes of the two polar regions and discusses the need for a new legally binding agreement. Potential advantages of a treaty – more financial stability, increased public profile for and state commitment to Arctic environmental protection, strengthened and harmonized environmental standards for the region – may outweigh the chief disadvantage of diverting resources away from continuing development of the relatively young soft law regime.

Calls for an Arctic treaty are not new. Many look to the Antarctic treaty regime as a model to follow in the Arctic. The southern polar region, with a similar environment and environmental stressors, is governed by a comprehensive and far reaching environmental protection treaty system. Yet the key differences between the two poles in terms of population, industrial activity, and national jurisdiction, make adoption of an Antarctic style treaty unlikely for the Arctic.

1. Unlike Antarctica, the Arctic is not a Nature Reserve

Antarctica has become a model in international law for a purely environmentally focused management regime. Development of its' legal system was made possible by the absence of an indigenous human population and land-based industrial and resource uses. Consequently, there was no need to balance conservation and economic development. In contrast, the Arctic's permanent population requires economic activity for survival. The wealth accruing from resource extraction in the Arctic has historically not benefited local populations, and serious social problems of poverty, unemployment, drug and alcohol abuse continue to plague local and indigenous communities. Environmental degradation has also resulted from industrial use.

Rather than replicating the Antarctic treaty regime, which preserves the continent as a "natural reserve, devoted to peace and science," a new Arctic regional agreement could reconcile indigenous rights, societal needs, and economic activity while ensuring above all that ecological integrity is maintained. Indigenous rights and Arctic economic development are sensitive political and legal issues. The Arctic has the potential to become a different type of model regime, the testing ground for a new exemplar of regional environmental agreement that recognizes and accounts for human society and economic activity. Both polar regions have unique features to offer for the development of international environmental law.

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[1] Young, Oran R. *The Structure of Arctic Cooperation: Solving Problems/Seizing Opportunities*, in a paper prepared at the request of Finland in preparation for the fourth conference of Parliamentarians of the Arctic Region, Rovaniemi, 27-29 August 2000, online at http://www.grida.no/parl/, identifies resolution of the need for a legally binding treaty as a key question for the Arctic Parliamentarians to answer.

2. Adequacy of Current Environmental Legal Regime

This report will highlight the adequacy of the current Arctic environmental legal regime, and contrast it with the Antarctic regime. The Arctic Environmental Protection Strategy (AEPS), now encompassed by the Arctic Council, was never legally binding, unlike comparable agreements in the Antarctic. The report will consider the possibility of negotiating a sustainability treaty for the Arctic, with similar high standards of environmental protection as those in the 1991 *Protocol on Environmental Protection to the Antarctic Treaty*. An Arctic treaty could also encompass the sustainable development focus of the Arctic Council, and enshrine innovative legal approaches already in use, such as the unique role of indigenous peoples.

All land areas fall under the uncontested sovereignty of one of the eight Arctic states (Canada, Denmark/Greenland, Finland, Iceland, Sweden, Norway, Russia and the United States), national domestic laws contain the primary legal controls on the environment. Regional laws also regulate the Arctic environment. Denmark, Finland and Sweden are subject to European Union (EU) laws. Canada and the US are parties to the *North American Agreement on Environmental Cooperation*. However, international environmental laws and principles play an increasing role in this legal regime. Many global treaties affect protection of the Arctic environment, most prominently the *Climate Change, Biodiversity* and the recently concluded – *Persistent Organic Pollutants (POPS)* Conventions. Regional arrangements such as the Arctic Council, an intergovernmental forum formed in 1996 to address common Arctic concerns, and its predecessor, the AEPS, a "soft law" framework for environmental cooperation, are also part of the legal framework, though arguably less important than binding law.

While social equity and economic stability are essential elements of sustainability, this report will concentrate on the adequacy of the Arctic environmental legal regime. Environmental protection has not been a primary focus of the domestic legal regimes of the Arctic states, though the regional regime emerged from environmental concerns, prompted by catastrophes such as the Exxon Valdez oil spill and the Chernobyl nuclear accident, and by mounting scientific evidence that distant industrial practices were harming Arctic peoples and ecosystems.

This report discusses whether the combined effect of global agreements and domestic environmental laws is sufficient to protect one of the world's last great wilderness areas. The Arctic states, bound together by their common borders on the world's most northern ocean, share common topography, resources, environment, peoples and concerns. Though there are increasingly close linkages between international/regional and domestic environmental legal regimes in the Arctic, a comprehensive legally binding legal structure is missing. A regional Arctic Environmental Protection or Sustainability Agreement could be a vehicle to fill gaps in the still incomplete Arctic legal regime, and may better serve to protect the region's unique characteristics. The design of a strengthened legal regime should be guided by the overlapping ecological and cultural values of residents of the Arctic. The increasing decision-making role of indigenous Arctic peoples should also be reflected in a revitalized regime.

II. The Current Arctic Environmental Legal Regime

1. The Arctic Region

The Arctic is a vast, under-populated region, home to approximately three and a half million people, of which about one-fifth are native indigenous peoples.[2] The Arctic is the largest remaining wilderness area in the northern hemisphere.

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[2] The definition of the Arctic area used in this report is the same as that used by one of the Working Groups of the Arctic Council: the boundary lies between 60°N and the Arctic Circle,

With a land mass exceeding 25 million square kilometres, the Arctic is one of the world's largest geographical regions.[3] Russia has most of the Arctic's land mass, and Canada is the second largest Arctic state. All of Greenland and Iceland's land mass is above the 60th parallel. The ice-covered Arctic Ocean is almost completely enclosed, with only four openings. Only about 10% of the Arctic Ocean is free of ice, even in summer.[4] Like Antarctica, the Arctic is dominated by extreme climatic conditions, and plays a key role in regulating global climate and the oceans.

The Arctic supports many unique marine and terrestrial species, such as narwhals, polar bears, and reindeer, and is a major nursery and breeding ground for migratory birds and marine mammals. Arctic species congregate in huge numbers. The largest puffin colony in the world has more than one million nests on Talan Island in the Okhotsk Sea.[5] Three of the world's largest caribou herds have 500,000 animals or more: the Western Arctic herd in northwest Alaska, the George River herd in northern Quebec and the Taimyr Peninsula herd in Siberia.[6]

Like Antarctica, the Arctic is an important area for scientific and environmental research, as it is still relatively pristine. However, the seeming purity of the environment can be deceiving. Pollution from local and distant source affects the region, catalogued in a comprehensive *State of the Arctic Environment Report* (SOAER) in 1997.[7] For example, health risks from the consumption of predatory marine and terrestrial mammals with high degrees of contaminants are significantly higher in Arctic than non-Arctic states.[8]

1.1 Environmental Issues in the Arctic

The most serious global environmental issue in the Arctic is the deposition of contaminants to the Arctic ecozones through long-range transport in the atmosphere, while the most important regional issues are mining, tourism, and military activities.[9]

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with some modifications. In the North Atlantic, the southern boundary follows 62°N, and includes the Faroe Islands. To the west, the Labrador and Greenland Seas are included. In the Bering Sea area, the southern boundary is the Aleutian chain. Hudson Bay and the White Sea are considered part of the Arctic for the purposes of the assessment. In the terrestrial environment, the southern boundary in each country is determined by that country, but lies between the Arctic Circle and 60°N. AMAP, *Arctic Pollution Issues: A State of the Arctic Environment Report* (AMAP: Norway), 1997, ("SOAER").

3 IUCN Draft Framework Strategy and Action Plan for IUCN Work in the Circumpolar Arctic, Sept. 2000.

4 "Arctic Ecozones" in *The State of Canada's Environment*, (Environment Canada: Ottawa), 1996.

5 Natural Resources Canada, Canadian Arctic Profiles, "Species," at http://collections.ic.gc.ca/arctic/english.htm.

6 Beverly and Qamanirjuaq Caribou Management Board, "Frequently Asked Questions about Caribou," at http://www.arctic-caribou.com/.

7 The SOAER will be updated in 2002. The summary report and the scientific studies companion volume can be found at http://www.amap.no.

8 SOAER, AMAP *Report on Issues of Concern: Updated Information on Human Health, Persistent Organic Pollutants, Radioactivity, and Mercury in the Arctic*, September 2000, both online at http://www.amap.no.

9 "Challenges for Sustainable Development" in *The State of Canada's Environment*, (Environment Canada: Ottawa), 1996.

A key environmental problem is warming ocean temperatures, evidence of climate change dramatically impacting wildlife and Arctic peoples. Radioactivity, persistent organic pollutants, acidification, oil pollution and heavy metals are of concern. Over-harvesting of natural resources such as fish and marine mammals, and overgrazing by reindeer are resource management challenges. Mines, nuclear plants and hazardous waste disposal are other prominent environmental problems.

Recent concern about the Arctic environment comes in part from increased rates of resource extraction in the region. Examples include:

- a record number of new mines such as diamond mines in Canada's Northwest Territories, expanded mines, and extension of mines slated for closing, such as the Lake Myvatn diatomite mine in Iceland,[10]
- construction of infrastructure such as new roads for mines, tourist sites, and industrial developments, with consequent negative impacts on wildlife,[11]
- pressure to increase timber harvests from boreal forests in the far North, fragmenting habitat,[12]
- overfishing in the North Pacific, North Atlantic and Arctic Oceans,
- new offshore oil and gas drilling and pipeline proposals, and
- expansion of the nuclear industry in the Arctic, demonstrated by proposals to construct several floating nuclear power plants in eastern Siberia[13] and Russia's new law allowing the import of spent nuclear waste for storage and disposal, expected to generate $30 billion in revenue.[14]

2. The Regional Legal Regime

Unlike the Antarctic, which has a comprehensive treaty regime developed over a number of decades, beginning in the late 1950s, the Arctic has no binding legal regime. The region has no history of multilateral cooperation and throughout the Cold War period, had a strategic and antagonistic, rather than cooperative, focus.

Domestic laws of the Arctic states provide the framework for environmental protection. Yet global treaties and norms increasingly influence the content of domestic laws, and so provide the

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10 Arni Finnson, "Controversial Decision on Mining Lake Myvatn," WWF Arctic Bulletin 4.00, 2000.

11 Ayesha Ercelawn, *End of the Road – The Adverse Ecological Impacts of Roads and Logging: A Compilation of Independently Reviewed Research* (NRDC: New York) 1999. Some of the studies collected in this report document wolves avoiding roads open to regular public use, and collision with a vehicle as the highest cause of death for female moose, both in Alaska.

12 UNEP, GEO-2000, *Global Environment Outlook*, chapter 2, The Polar Regions, (UNEP: Nairobi), 2000.

13 Thomas Nilsen, "Floating Nuclear Plants in the Siberian Arctic?" WWF Arctic Bulletin 4.00, 2000.

14 Giles Whittell, "Russia to accept nuclear waste – for $30 billion," Vancouver Sun, Dec. 22, 2000, A9c.

backdrop for domestic legal developments. Marine treaties in particular have influenced the content of Arctic states' domestic environmental laws, and to date, the focus of the Arctic environmental legal regime has been on marine conservation. Bilateral agreements between individual Arctic states on issues such as fisheries, wildlife and protection from pollution are numerous.[15]

This chapter describes the growth in Arctic cooperation initiatives, and the elements of the current "soft-law" Arctic environmental legal regime. The next chapter discusses the other key part of the regional regime: the global and regional treaties and agreements that apply to the Arctic.[16]

2.1 Overview of Regime

The Arctic legal regime consists of a series of "soft law" agreements, which started with the 1991 *Declaration on Protection of the Arctic Environment* and the Arctic Environmental Protection Strategy (AEPS).[17] The AEPS was absorbed into the work of the Arctic Council, created in 1996. It remains a valid Strategy for Working Groups of the Arctic Council. The 1998 *Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-Based Activities* and the 2000 *Arctic Council Action Plan to Eliminate Pollution of the Arctic* are the most recent examples of soft law environmental agreements in the region.

The regime's guiding body, the Arctic Council, is not an international organization with legal personality, but instead a "high-level forum intended to provide a means for promoting cooperation among Arctic states . . . on common Arctic issues, in particular issues of sustainable development and environmental protection in the Arctic."[18]

Gaps in the Arctic environmental legal regime relate to specific environmental issues, such as inadequate control of environmental impacts of mining and incomplete biodiversity protection. Other Arctic gaps include the full integration of indigenous peoples into the legal regime of most Arctic states, (despite indigenous rights and land claims), and the sharing of benefits from resource activities with indigenous as well as local communities. The regional regime also suffers from being unenforceable, lacking specific commitments, targets and timetables for action, and chronic under-funding. Though many global and regional agreements apply to the Arctic, and even have special provisions related to the Arctic, such as the Protocols to the *Convention on Long Range Trans-boundary Air Pollution* (LRTAP), and the *United Nations Convention on the Law of the Sea* (LOSC), when compared with the comprehensive and far reaching regime in place in the Antarctic, the Arctic's regime appears incomplete.

2.2 Growth in Arctic Cooperation Initiatives

In the past decade numerous new Arctic governance initiatives have flourished. The Arctic Council is the flagship of these new initiatives. Created by the Ottawa Declaration in 1996, the Arctic Council has eight members: Canada, Russia, Finland, Norway, Iceland, Sweden, Denmark/ Greenland and the United States. Each member state is represented by Senior Arctic Officials

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15 Donald Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge: Cambridge University Press), 1996, 157.

16 A discussion of the domestic environmental laws of the Arctic states is outside the scope of this report.

17 30 ILM 624 (1991).

18 Declaration on the Establishment of the Arctic Council, Ottawa, 1996, at http://www.arctic-council.org/establ.asp.

(SAO) on the Council. While the Declaration does not state who should represent the states at the biennial council meetings, Foreign Ministers or another designated Minister or senior official usually lead state delegations.

A host of other organizations also exist to serve the region, and have proliferated since the late 1980s. Initiatives may be region-wide inter-governmental regimes such as the Arctic Council and AEPS; sub-national region-wide regimes such as the Northern Forum and Standing Committee of Parliamentarians of the Arctic Region; sub-regional inter-governmental regimes such as the Nordic Council and Barents Euro-Arctic Region; indigenous organizations such as the Saami Council and Inuit Circumpolar Conference; or non-governmental organizations such as the International Arctic Science Committee.[19] A brief description of the major initiatives follows.[20]

The Nordic Council – Established in 1952 to promote dialogue and joint action on regional issues, the Council brings together representatives from the parliaments and governments of the five Nordic states – Norway, Sweden, Finland, Denmark, Finland – and the three associated "home-rule" territories of Greenland, the Faroe Islands and Aaland Islands.

The Saami Council – This Council is the first trans-boundary organization of Arctic native peoples. Saami minorities in the three Scandinavian countries were the original members. Russian Saami are now included. Except for the Russian representatives, Saami Council members are elected.

The Inuit Circumpolar Conference – This organization exists to unite Inuit peoples from Alaska, Canada, Greenland and Russia, particularly around resource development and self-determination issues. The ICC and the Saami Council are two of the founding "Permanent Participants" in the Arctic Council, a special category reserved for indigenous groups.

The International Arctic Science Committee (IASC) – This Committee is a non-governmental organization made up of the representatives from national science organizations in the eight Arctic states and eight other countries with longstanding interests in Arctic research. IASC members do not act on behalf of governments. The Committee emphasizes scientific cooperation between Arctic scientists. It is similar to SCAR, the Scientific Committee for Antarctic Research.

The Northern Forum – The Forum promotes exchanges among sub-national governments in the Northern regions on issues such as northern technologies and socio-economic development. It includes twenty-four sub-national or regional governments from ten countries. It does not span the circumpolar north: Nunavut, northern Quebec, Labrador, and Greenland are not members; whereas there are members from China, Mongolia, Japan, and Korea is also a national observer.

The North Atlantic Marine Mammal Commission (NAMMCO) – The governments of Norway, Iceland, Greenland, and the Faroe Islands, with Canada, Russia, and Japan as observers, formed this organization to promote the sustainable utilization of living marine resources, in particular all cetaceans and pinnipeds.

The Council of the Barents Euro-Arctic Region (BEAR) – Created in January 1993, the Council brings together the five Nordic countries, the European Union and Russia with the overarching aim of helping to reintegrate Russia within Europe, and specifically to work on

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19 Oran Young "The Structure of Arctic Cooperation: Solving Problems/Seizing opportunities," 2000, prepared for the Fourth Council of Parliamentarians of the Arctic Region."

20 For more information on these organizations, consult their respective websites. This summary description is adapted from a report by the Canadian Parliamentary Standing Committee on Foreign Affairs, Canada and the Circumpolar World: Meeting the Challenges of Cooperation in to the Twenty-First Century, 1997 ("SCFAIT report').

common environmental and sustainable development challenges in the Barents Sea area. Canada and the U.S. are among several observer countries to this process.

The Standing Committee of Parliamentarians of the Arctic Region (SCPAR) – This Committee includes representatives from the Nordic region, the other Arctic countries, the European Parliament, and from the ICC and Saami parliaments.

The growth of Arctic governance and cooperation initiatives coincides with the development of Arctic specific provisions in global governance agreements and regimes. Examples range from the development of a Polar Navigation Code by the International Maritime Organization, to statements from an Arctic Council representative to the meeting which produced the POPs treaty, to funding of biodiversity-related projects in Russia by the Global Environment Facility.

3. Arctic Environmental Protection Strategy (AEPS)[21]

Arctic environmental cooperation was first proposed forty years ago, at the same time as the start of the Antarctic treaty regime. Proposals were short-lived at that time due to the Cold War.

The eight Arctic countries started serious discussions about a coordinated approach to Arctic environmental protection in 1989. Impetus for the initial meeting came from several events. The first of these events was the beginning of "glasnost" in the Soviet Union in 1987, leading eventually to the dissolution of the USSR in 1991. A famous speech by then Soviet Union Secretary-General Mikhail Gorbachev in Murmansk in 1987 calling for greater Arctic cooperation and an Arctic "zone of peace" was both a death knell for the Cold War, and a signal for the birth of a new era in cooperation.[22] Ironically, though the dissolution of the Soviet Union was one factor prompting formation of the AEPS, the economic changes since dissolution have meant that Russia has been unable to implement many of its commitments under the Strategy.

Prominent environmental disasters in the region also pointed out the need for a new regime. The catastrophic nuclear accident in Chernobyl in 1986, the true consequences of which were only revealed in 1989; and the massive Exxon Valdez oil spill in Alaska in 1989 galvanized public resolve to clean up the Arctic. Evidence of environmental damage caused by activities in other parts of the Arctic was also accumulating. Smelter emissions on the Kola Peninsula were harming Finland's northern forests,[23] and increasingly high levels of contaminants were detected in the traditional foods of indigenous peoples in the North, much higher than would be expected in a non-industrial region.[24] By 1989, Arctic state representatives were ready to tackle common environmental problems. The Finnish government was responsible for convening the first meeting, which became known as the "Rovaniemi" process, named after the city in Finland where the meeting was held.[25] In 1991, after two years of negotiation, the parties signed a *Declaration on Protection of the Arctic Environment*, and adopted the Arctic Environmental Protection Strategy (AEPS).

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21 (1991) 30 ILM 1, 624.

22 Donald Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge: Cambridge University Press), 1996, 229.

23 Young, Oran R. *Creating Regimes: Arctic Accords and International Governance*, (Ithaca, NY, USA: Cornell University Press), 1998, 54.

24 Government of Canada, Commissioner for Environment and Sustainable Development, "Making International Environmental Agreements Work: The Canadian Arctic Experience," Ottawa, 1999.

25 For a complete description of the creation of the AEPS, see Oran Young, *Creating Regimes – Arctic Accords and International Governance*, (Ithaca: Cornell University Press), 1998.

The AEPS does not define the Arctic area, though this lack of definition does not appear to have caused any problems. While formally agreed to between states in written form, it is not legally a treaty.[26] The Parties did not believe that the AEPS imposed binding legal obligations upon them.[27]

The objectives of the AEPS were:

i. to protect the Arctic ecosystems, including humans,

ii. to provide for the protection, enhancement and restoration of environmental quality and the sustainable utilization of natural resources including their use by local populations and indigenous peoples in the Arctic,

iii. to recognize and to the extent possible, seek to accommodate the traditional and cultural needs, values and practices of the indigenous peoples, as determined by themselves, related to the protection of the Arctic environment,

iv. to review regularly the state of the Arctic environment, and

v. to identify, reduce, and as a final goal, eliminate pollution.

The AEPS did not address some of the major causes of Arctic environmental problems, such as climate change and ozone depletion, because they were already being addressed in other fora. The AEPS described environmental issues, canvassed the existing legal regime and proposed six priorities for action: persistent organic contaminants, oil pollution, heavy metals, noise, radioactivity, and acidification.

Of the six environmental pollutants identified as being Arctic-wide, all but one, noise, was trans-boundary.[28] To assess the environmental impact of these six pollutants, the Arctic states established an Arctic Monitoring and Assessment Program, and three other working group programs; Conservation of Arctic Flora and Fauna (CAFF); Protection of the Arctic Marine Environment (PAME); and Emergency Preparedness and Response (EPPR) Program. These working groups of the programs are now working groups of the Arctic Council, and their major accomplishments are summarized in the next section of this report.

The AEPS marked the beginning of the formation of a new regime, which continues to evolve. The Ministers met at four Ministerial Conferences before the programmes of the AEPS were integrated into Arctic Council Working Groups in 1997.

3.1 Evaluation of Effectiveness of AEPS

The AEPS has had mixed reviews. It focused attention on the region, and increased state commitment to take action to protect the Arctic environment. However, it has been called an "unambitious regime," that adds little to the existing environmental monitoring programmes of the

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26 The *Vienna Convention on the Law of Treaties*, 1969, Art. 2 (1) (a) defines a treaty as: an international agreement concluded between States in written form and governed by international law, whether embodied in a single instrument or in two or more related instruments and whatever its particular designation.

27 Donald Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge: Cambridge University Press), 1996, 239 – 241.

28 AEPS, paras. 3.1-3.6 at 1, 635-43.

Arctic states.[29] The AEPS action plan on priority environmental issues established no concrete targets, few timetables, and only general national commitments, such as to implement the best available technology to control releases of heavy metals. NGO criticisms focussed on the piecemeal nature of its efforts, and failure to link to global issues. Commentators generally agree that the greatest strength of the AEPS was to provide a foundation for future work.[30]

4. Arctic Council

The Arctic Council was a natural outgrowth of the AEPS. States saw the need to expand the Strategy beyond purely environmental issues. An independent Arctic Council Panel was formed in Canada. Its 1991 report called for a council which would make the circumpolar region "a domain of enhanced civility – an area in which aboriginal peoples enjoy their full rights, and where the governments that speak for southern majorities accord progressively greater respect to the natural environment, to one another, and in particular, to aboriginal people."[31] The initial proposal in 1991 envisioned a treaty to create the Council. A draft for a framework treaty was published in 1991.[32]

Leadership in creating the Council came from Canada, which hosted Senior Arctic Officials (SAO) meetings in the North in the early 1990s. In 1996, the Ottawa Declaration was signed. Contentious issues in the negotiations leading up to the Declaration centered on the role for indigenous organizations, and the inclusion of sustainable development goals.

The Declaration creating the Council states that the Council will look in particular at issues of sustainable development *and* environmental protection in the Arctic. The Declaration is a skeletal outline.

The Declaration on the Establishment of the Arctic Council states that the Council is established as a high level forum to:

a) provide a means for promoting cooperation, coordination and interaction among the Arctic States, with the involvement of the Arctic indigenous communities and other Arctic inhabitants on common arctic issues, but should not deal with matters related to military security);

b) oversee and coordinate the programs established under the AEPS on the Arctic Monitoring and Assessment Program (AMAP), Conservation of Arctic Flora and Fauna (CAFF), Protection of the Arctic Marine Environment (PAME), and Emergency Preparedness and Response (EPPR);

c) adopt terms of reference for and oversee and coordinate a sustainable development program; and

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29 Donald Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge: Cambridge University Press), 1996, 389.

30 David VanderZwaag, "International Law and Arctic Marine Conservation – A Slushy, Shifting Seascape" (1997), Vol. 9, Georgetown International Environmental Law Review; Rothwell, ibid. 329.

31 Arctic Council Panel, *To Establish an International Arctic Council: A Framework Report*, 1991, Northern Perspectives.

32 Donat Pharand, Proposal for an Arctic Council Treaty, Northern Perspectives, 1991.

d) disseminate information, encourage education and promote interest in Arctic-related issues.[33]

Observers urged the Arctic Council to reject the "talk shop" image of many international organizations, and focus on improving the livelihood and well-being of Arctic residents. Priority areas for action identified by indigenous and other Arctic residents were revitalization of the sealing industry, and removal of trade barriers for marine mammal products in Europe and the United States.[34]

4.1 Role of Indigenous People

The special role for indigenous peoples as Permanent Participants is a unique feature of the Arctic Council. Indigenous groups were involved in the working groups of the AEPS, and an Arctic indigenous people's secretariat, hosted by Denmark, was set up in 1993.[35]

The original proposal for the Arctic Council envisaged equal status for the Arctic government representatives and indigenous group representatives. The Arctic Council created a category of Permanent Participant to recognize the unique status of indigenous peoples in the Arctic. The Declaration carefully notes that "the use of the term "peoples" in this Declaration shall not be construed as having any implications as regards the rights which may attach to the term under international law."

Three indigenous umbrella organizations were listed as Permanent Participants in the Council, with provision for additional "other Arctic organizations of indigenous peoples with majority constituency, representing (a) a single people resident in more than one Arctic state; or (b) more than one Arctic indigenous people resident in a single Arctic state." Using this criteria, three additional groups have since been confirmed. Permanent Participants on the Council are now:

- the Association of Indigenous Minorities of the North, Siberia and the Far East of the Russian Federation,
- the Inuit Circumpolar Conference,
- the Saami Council,
- the Aleutian International Association,
- the Gwich'in Council International and
- the Arctic Athabaskan Council.

Though these Participants are not formal members of the Council and do not vote, they are virtually equivalent to the state members. They have the right to participate in all meetings (except those declared in camera by the state representatives) and activities of the Council, and to present proposals for cooperative activities.

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33 Declaration on the Establishment of the Arctic Council (1996), available on the Arctic Council website at: http://www.arctic-council.org/.

34 SCFAIT Report, Chapter 3, 24.

35 The Indigenous Peoples' Secretariat was established to facilitate the involvement of indigenous peoples in the work of the Arctic Council. Its website is at http://www.arcticpeoples.org.

The Arctic Council's effectiveness is significantly enhanced by this innovative approach to indigenous peoples.[36] There is a general consensus among the participants that indigenous involvement in the AEPS has made the process a different and more successful product. Their participation gives "real life examples" of the impacts of policies and developments.

Use of Indigenous Knowledge – The use of indigenous knowledge or traditional ecological knowledge (TEK) started with the AEPS. According to the Inuit Circumpolar Conference, which prepared a report on this topic for the 1993 ministerial meeting in Nuuk, indigenous knowledge is understood to be comprised of "information and concepts about the environment and ecology that are known but usually not formally recorded by individuals who belong to a particular cultural group that has occupied an identifiable territory over a long period of time" and includes "facts, concepts and theories about the characteristics which describe the objects, events, behaviours and interconnections that comprise both the animate and inanimate environments of indigenous peoples." From the indigenous point of view, "indigenous knowledge is a body of knowledge in its own right and a means of communication and decision-making that reflects who indigenous peoples are and the world view that they hold."[37]

Indigenous knowledge was incorporated in the SOAER in a chapter on indigenous ways of living and traditional diet.

One of the Arctic Council's Working Groups has also sponsored TEK studies and projects such as collecting indigenous knowledge on beluga whales in Alaska, creating an Indigenous Peoples' Knowledge database, a study on ice edge ecosystem and indigenous knowledge, and developing ethical principles for research.

A comprehensive report on the topic was recently prepared for the Arctic Council Indigenous Peoples' Secretariat.[38]

4.2 Procedure of Council

Ministerial meetings are held every two years. Decisions are made by consensus. The work of the Council and its Working Groups is supervised by Senior Arctic Officials (SAOs) in consultation with representatives of the Permanent Participants. The Council has developed Rules of Procedure, which apply to all subsidiary bodies of the Council as well as to the Council itself.[39] All cooperative activities of the Council must be endorsed by Ministerial mandate. States are free to take action, singly or collectively, independently of the Council. Each program of the Council is voluntarily funded by one of the States.

In addition to the Permanent Participants, participation in the Arctic Council is also open to observers such as non-Arctic states, intergovernmental and inter-parliamentary organizations and non-governmental organizations. A full list of observers is on the Arctic Council's website.

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36 Evan T. Bloom, *Current Development: Establishment of the Arctic Council*, 1999, 93 A.J.I.L. 712.

37 Monica Tennberg, INDIGENOUS PEOPLES' INVOLVEMENT IN THE ARCTIC COUNCIL, *Northern Notes*, IV: 21-32 (December 1996), online at http://arcticcircle.uconn.edu/ArcticCircle/NatResources/Policy/tennberg.html.

38 Philip Burgess, *Traditional Knowledge*, 1999, available online at http://www.arcticpeoples.org/knowl.htm.

39 The Rules are on the Council's website at Rules of Procedure [Revised 9-98] http://www.arctic-council.org/.

4.3 Arctic Council Working Groups

The Arctic Council has five working groups. Each group's mandate is relevant for environmental protection. Each group has developed a program of work. The five working groups are:

- Sustainable Development Program (SDWG)
- Arctic Monitoring and Assessment Program (AMAP)
- Emergency, Prevention, Preparedness and Response Program (EPPRP)
- Protection of Arctic Marine Environment (PAME)
- Conservation of Arctic Flora and Fauna (CAFF)

A description of the work of each group, and major accomplishments to-date, is set out below.

Sustainable Development Working Group (SDWG) – Sustainable development was prominent in the discussions creating the Arctic Council, and has been given shape in the latest Working Group on Sustainable Development.

Established in 1998, the goal of the SDWG is to protect and enhance the economies, culture and health of the inhabitants of the Arctic, in an environmentally sustainable manner. The Arctic states could not agree on a comprehensive sustainable development program until the 2000 meeting in Barrow, Alaska, due to uncertainty about the meaning of sustainable development. During the formation of the Council, the relationship of sustainable development to environmental protection was a frequent subject of debate, with some NGOs concerned that inclusion of the concept of SD would lessen the emphasis on environmental protection. Others saw that SD was "both a good and integrating concept of the Arctic Council, to incorporate not only environmental protection but also the economic and social aspects of the Arctic agenda."[40]

The overall goal of the program is to improve the environmental, economic, and social conditions of Arctic communities. This Group to-date has carried out specific projects on disparate topics such as Arctic children and youth, health, tele-medicine, resource management, technology transfer to improve Arctic sanitation systems, national sustainable development strategies, living conditions in the Arctic, and linking Arctic communities.

An issue that has plagued the Group since its inception is barriers to trade in marine mammal products.[41] Bans in the United States and Europe on the importation of skins and fur from seals is a major issue in the North, one that a regional legal agreement could seek to resolve. The predecessor to the SDWG, the Task Force on Sustainable Development and Utilization (TFSDU), sponsored research on the retrospective seal market collapse study and a study on trade barriers.

Accomplishments:

- Framework Document (Chapeau) for the Sustainable Development Program.[42] This two page document lists six areas of special importance for the Program, including health,

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40 Ambassador Mary Simon, Testimony to SCFAIT Report.

41 David VanderZwaag, " International Commons – The Arctic" in *The Year in Review*, 1999, 10YbIEL 303-307.

42 The SDWG currently has no website of its own. The program for the group can be found at http://www.arctic-council.org/barrow/chapeau.pdf.

sustainable economic activities, education, children and youth, management of natural, including living resources, and infrastructure development. The document notes the strong commitment of the Council to approve projects in these areas that will deliver tangible benefits to residents of the Arctic.

Arctic Monitoring and Assessment Programme (AMAP) – This was the first group to become operational under the AEPS, and has a secretariat based in Norway. AMAP's objective is *"providing reliable and sufficient information on the status of, and threats to, the Arctic environment, and providing scientific advice on actions to be taken in order to support Arctic governments in their efforts to take remedial and preventive actions relating to contaminants."*[43]

The scope of its monitoring program embraces sources of pollution, both within Arctic regions and at lower latitudes, pathways of pollutant transfer to and within the Arctic, levels and trends, fate of pollutants, and their effects on Arctic ecosystems and human populations.[44]
AMAP's major accomplishments are:

- publication of two seminal reports: the 1997 *Arctic Pollution Issues: A State of the Arctic Environment Report* (SOAER) and the 1998 *AMAP Assessment Report: Arctic Pollution Issues,* containing the scientific studies and references for the plain language SOAER;

- an update of the SOAER: *Updated Information on Human Health, Persistent Organic Pollutants, Radioactivity and Mercury in the Arctic*, 2000;

- research and monitoring that have played a significant role in developing the scientific justification for international controls on contaminants, including binding protocols on persistent organic pollutants (POPs) and heavy metals;

- research that supported the negotiations for a global agreement on POPs;

- coordination of the first phase of a 'Multilateral Cooperative **Project on Phase-out of PCB** Use, and Management of PCB-contaminated Wastes in the Russian Federation'; and

- together with IASC and CAFF, development of an **Arctic Climate Impact Assessment (ACIA)**, which is now a project of the Arctic Council as a whole.

AMAP has been characterized as the most visible element and having the most ambitious programs of the Arctic Council.[45]

Conservation of Arctic Flora and Fauna (CAFF) – CAFF was established to address the special needs of Arctic species and their habitats in the rapidly developing Arctic region.[46] Its work is guided by the Strategic Plan for the Conservation of Biological Diversity, published in 1998. CAFF released an overview report on the status and trends in changes to Arctic ecosystems, habitats and species, in June 2001. Recommendations related to the report will be prepared for the next ministerial meeting of Senior Arctic Officials in 2002.

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43 The website for this group is http://www.amap.no/.

44 Report of Senior Arctic Officials to Arctic Council Ministers, Barrow, Alaska, Oct. 2000, 11.

45 Oran Young, *Creating Regimes: Arctic Accords and International Governance*, (Ithaca, NY: Cornell University Press), 1998, 39.

46 The website for this group is at http://www.grida.no/caff/.

Accomplishments:

- Development of the Circumpolar Protected Area Network (CPAN). This Group has conducted several gap analyses on protected areas in the Arctic: the first report on the state of protected areas in the circumpolar Arctic in 1994; a 1996 report on gaps in habitat protection, and a detailed gap analysis of the Russian Arctic in 2000. The 1996 report classified the entire Arctic region into seven vegetation zones and found that the least amount of protection was found in the northern boreal zone (2.6%) and inshore waters (2.1%). As the northern boreal zone comprises about 34% of the region, this zone was identified as a high priority for further protection;[47]

- Preparation of the Strategic Plan for the Conservation of Arctic Biological Diversity. Biological diversity is the umbrella for the work of CAFF; and the Cooperative Strategy and Strategic Plan provide the basis for determining priority objectives and activities;

- Murre and Eider Duck Conservation Strategies;

- Atlas of Rare Endemic Vascular Plants of the Arctic;

- Arctic Climate Impact Assessment (ACIA), with AMAP;

- Circumpolar Biodiversity Monitoring Network;

- RAIPON/CAFF Sacred Sites Project;

- CAFF Flora Group;

- Circumpolar Vegetation Mapping Project (CAVM); and

- CAFF-GEF Project in Arctic Russia – Funding for some projects in Russia that conserve biological diversity is provided by the Global Environment Facility, a joint UNEP/UNDP/ World Bank agency. This project also receives funding from Arctic states.

This Group has noted the need to address trans-boundary relationships of national protected areas, and the need for more marine protected areas. Outside evaluations of CAFF have noted that its work has led to little action to date; Arctic countries have not implemented the Group's recommendations; the Group lacks a clearly defined and ambitious program, and is nonbinding.[48] Many of these criticisms apply to the AEPS and Arctic Council as a whole.

Emergency Prevention, Preparedness and Response (EPPR) – EPPR was established to provide a framework for co-operation in responding to the threat of environmental emergencies, act as an experts forum to evaluate the adequacy of existing arrangements and to recommend a system of cooperation. At the second Ministerial Conference in Nuuk, Greenland, the Ministers underlined the necessity of a notification system and improved cooperation for mutual aid in case of accidents in the Arctic area.[49]

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47 CAFF Habitat Conservation Report No. 5 – *Gaps in Habitat Protection in the Circumpolar Arctic – A Preliminary Analysis*. 1996.

48 WWF and UNEP, *CAFF and Conservation in the Arctic*, Summary of a Workshop on Arctic Biological Diversity Conservation: Perspectives and Structures, 1997, available online at <http://ngo.grida.no./wwfap/CAFFreport>.

49 The website for this group is at http://www.ims.uaf.edu:8000/EPPR/.

Accomplishments:

- completion of the Field Guide for Oil Spill Response in Arctic Waters;
- development of Arctic Offshore Oil and Gas Guidelines by the PAME working group in consultation with the EPPR working group; and
- preparation of a Circumpolar Map of Resources at Risk from oil Spills in the Arctic.

Protection of the Arctic Marine Environment (PAME) – PAME was established to address policy and non-emergency response measures related to protection of the marine environment from land and sea-based activities.

Accomplishments:

- information gathered on major sources of marine pollution from within the Arctic and from outside the region, and on current and planned shipping activities and their effects on the environment,
- completion of the Regional Plan of Action for the Protection of the Arctic Marine Environment from Land-based Activities,
- Arctic Offshore Oil and Gas Guidelines – There are limited global standards for both onshore oil and gas development, developed by the World Bank, and by MARPOL, the main treaty in this area, for offshore oil and gas exploration and development. PAME led the Arctic states to develop new regional guidelines for offshore oil and gas development, with AMAP and EPPR.

4.4 Evaluation of Effectiveness of Council

Though many observers believed the Council would strengthen the AEPS, it is too soon to judge whether significant change has resulted from the elevation of the Strategy to a Council. Like the AEPS, the Council has no enforcement authority, has been underfunded, and contains very few, if any, substantive commitments on the part of the signatories to take concrete action. A review of the Council in 1998 notes that the activities and reports of the various Working Groups were "quite general," "lack specificity," and "largely descriptive."[50]

The Arctic Council is not strictly an organization: it has no set offices or dedicated personnel. The Declaration does not give the Council decision-making powers and states have not relinquished any decision-making powers to the Council. Indeed some say that the decision-making ability of the Council has very purposely been limited, by the United States in particular.[51] Because it lacks a fixed budget, the Council's ability to create new programs or carry out new activities is limited.

The Council's actions are also hard to isolate amid the numerous other structures that exist in the North, some of which overlap with the Council, such as the Barents Euro-Arctic Council, and others which involve some, but not all of the same actors, such as the Northern Forum. It may be

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50 David VanderZwaag, "International Commons – The Arctic" in *The Year in Review*, 1998, 9YbIEL 266-273.

51 "For a variety of reasons, the US has worked to ensure that the Arctic Council has a limited mandate, and thus has limited significance." Samantha Smith, "Ministerial with Only Three Ministers," WWF Arctic Bulletin No. 4, Fall 2000, 4.

"more appropriate to treat the council as a forerunner intended to play a role in a continuing process of regime formation in contrast to an entity designed to administer the provisions of a regime that is already in place."[52]

The tension between environmental and sustainable development issues continues. Some environmental issues, such as nuclear waste contamination are not integral to sustainable development; some sustainable development issues are not environmental (such as telecommunications, and drug abuse among Arctic inhabitants); and some issues are both, such as the indigenous peoples' concerns of the effects of trade barriers on certain natural resources on their society.[53] Indigenous participants hoped that the Council could be helpful in resolving matters such as the European Union's regulations on wild fur imports, and other economic measures with extraterritorial effects: "The Arctic Council should be … addressing legal questions in respect to US/EU trade-restrictive actions, and the human rights implications of EU and US actions that adversely affect the rights of Arctic peoples to self-determination and security of livelihood."[54] The Council has yet to resolve these tensions.

Nonetheless, the Council has played some new roles to date. Its Working Groups have produced important documents, such as the SOAER, building the information base that is critical for good management. Regional guidelines on protected areas and biodiversity monitoring networks, and the Guides to oil spills and offshore oil and gas activities are also useful. The Council has conveyed regional concerns to global meetings: a statement by the Council was presented to the meeting which produced the POPs treaty.[55] The Council welcomed the successful conclusion of the POPs treaty. The current Chair of the Council stated that "the message from Johannesburg was received with relief and enthusiasm by people living in the Arctic" and that "the Arctic Council will not drag its feet as regards action to facilitate implementation of this Agreement."[56]

III. Environmental Issues and the Arctic – Applicable Treaties and Agreements

1. Links Between Arctic Environmental Issues and Global Treaties and Agreements

Arctic environmental problems intersect with global problems in many ways. Many threats to the Arctic environment come from outside the region. Treaties and other soft law agreements that

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52 Young, *The Structure of Arctic Cooperation: Solving Problems/Seizing Opportunities*, 2000, 29.

53 Bruce A. Russell, *The Arctic Environmental Protection Strategy & the New Arctic Coun*cil, online at the Arctic Circle website maintained by the University of Connecticut: http://arcticcircle.uconn.edu/ArcticCircle/NatResources/Policy/uspolicy1.html.

54 Milton Freeman, of the Canadian Circumpolar Institute, Submission of 3 June 1996, p. 7. Canadian Parliamentary Standing Committee on Foreign Affairs, *Canada and the Circumpolar World: Meeting the Challenges of Cooperation into the Twenty-First Century*, 1997.

55 The International Negotiating Committee (INC 5) on the POP Convention: Intervention by Ambassador Kari Karanko, Finland on behalf of the Arctic Council http://www.arctic-council.org/

56 Speech by Finland as Chair of the Arctic Council to the Global Ministerial Forum and the twenty-First Session of the Governing Council of UNEP, Nairobi 5-9, 2001, reproduced on the Arctic Council website at www.arctic.council.org.

address distant sources of pollution are consequently a critical part of the Arctic legal framework. Global treaties that apply to activities within the region, such as protection of biological diversity, are also important.

The disproportionate impact of distant polluting activities on the Arctic can demonstrate the need for global action in an ongoing treaty process, or can spur states to act on a new global treaty. Atmosphere and chemical management treaties are examples of this phenomenon. Persistent organic pollutants (POPs), greenhouse gas emissions causing climate change and ozone depleting substances are all generated primarily in industrial countries far from the Arctic, yet all have serious negative impacts on the Arctic environment.

In other cases, global treaties incorporate provisions for the Arctic. Article 234 of the *United Nations Conference on the Law of the Sea* (known as LOSC) was specifically designed for the polar regions. It gives coastal states the right to adopt and enforce non-discriminatory laws for the prevention and control of marine pollution from vessels in ice-covered areas where, among other possible impacts, pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance. The emerging International Polar Navigation Code developed under the International Maritime Organization (IMO) is intended to create a unified code of rules for ships navigating in both polar regions, building upon existing treaties administered by the IMO, such as MARPOL, and associated safety and training treaties.[57] Protocols under the LRTAP Convention also contain specific references to the Arctic environment.

And in still other cases, local or regional Arctic legal arrangements embody workable versions of the concepts found in global Conventions, such as the *Convention on Biological Diversity's* provisions regarding traditional ecological knowledge, and the special role of indigenous peoples.

These issues are discussed below.

2. Evaluations of Global Treaties and the Arctic Environment

Under the AEPS, the Arctic states pledged to determine the extent of environmental problems in the North and to examine whether existing international cooperative arrangements adequately addressed these problems. As part of this work, the Arctic states have canvassed the existing global agreements and their applicability to the Arctic environmental legal regime on a number of occasions.

Prior to the creation of the AEPS in 1991, an overview of these agreements was carried out.[58] At the first preparatory meeting for the AEPS in 1989, Ministers agreed to examine both the state of the Arctic environment and to consider the existing legal instruments for the protection of that environment. This report identified 26 'global conventions' which could impact upon the protection of the Arctic environment, and broke them down into four groups: atmosphere, marine, wildlife and other, such as the trans-boundary hazardous waste.

After identifying six environmental problems and priorities, the AEPS looked at international mechanisms to control each of these problems. The legal regime was found inadequate in five out

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57 Lawson Brigham, "The Emerging International Polar Navigation Code" in Davor Vidas, ed. *Protecting the Polar Marine Environment*, (Cambridge: Cambridge University Press), 2000.

58 *List of Major International Instruments and Policy declarations pertaining to the Arctic Environment*, presented at the Ministerial meeting, Rovaniemi, Finland, 1991.

of six cases, with the exception being radioactivity (AEPS, section 4). The first AEPS group, AMAP, was established to address these six environmental priorities.

The other three initial Working Groups of the AEPS also had links to international environmental legal regimes. PAME was assigned the responsibility of using the terms of the 1982 Law of the Sea Convention to improve marine environmental protection (AEPS, section 7). The EPPR group was committed to improving emergency prevention, preparedness and response (AEPS, section 8) and CAFF was to cooperate on the protection of Arctic flora and fauna using existing global agreements (AEPS, section 9).

Continuing the focus on international arrangements, the various Working Groups of the Arctic Council have also surveyed global agreements and evaluated their effectiveness in protecting the Arctic environment in other reports, such as:

- PAME, Report to the Third Ministerial Conference on the Protection of the Arctic Environment, March 1996. This report summarized the major sources of pollution to the Arctic marine environment, and analyzed the international legal instruments related to four areas of Arctic marine environmental concern: land-based activities, dumping of wastes at sea, shipping activities, and offshore oil and gas activities.

- CAFF, International Conventions and Other Legal Instruments relevant to the Conservation of Migratory Birds, May 1998.

- CAFF Habitat Conservation Report No. 8: A Summary of Legal Instruments and National Frameworks for Arctic Marine Conservation, July 2000.

- EPPR, Analysis of the Adequacy and Effectiveness of Existing Arrangements and Agreements, August 2000. This analysis concluded that the international agreements and arrangements currently in force, agreed to, or under consideration appear to address the present needs for trans-Arctic cooperation in emergency prevention, preparedness and response. The greatest threat to the Arctic from a release of a pollutant requiring emergency response is from the transportation and storage of oil.

3. Existing Global Agreements and the Arctic

3.1 Marine

Nearly all international conventions dealing with the protection of the marine environment have some application in the Arctic, which encompasses the world's most northern oceans. These treaties include the 1973 *International Convention for the Prevention of Pollution from Ships* and its 1978 Protocol, commonly referred to as MARPOL[59] and the 1972 *Convention on the Prevention of Marine Pollution* by dumping of waste and other matter, commonly known as the London Convention, particularly its 1996 Protocol,[60] and the Law of the Sea Convention.[61]

Law of the Sea Convention (LOSC). Only five of the eight Arctic states are parties to the major comprehensive treaty on the law of the sea and marine environmental protection, which

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59 ILM, Vol. 12, 1973, 1319.

60 ILM, Vol. 36, 1997, 1.

61 A number of maritime treaties deal with emergencies, maritime accidents, training and certification of ship crew and officers, and navigation. These treaties are not addressed in this report.

entered into force in 1994. Iceland, Finland, Norway, Russia and Sweden are parties to the *United Nations Convention on the Law of the Sea* (LOSC). However, Canada, the United States and Denmark have not yet ratified the Convention though they have signed it. Most Arctic states generally abide by its provisions, as LOSC reflects customary international law.

The purpose of the Convention is to establish rules to govern all uses of the ocean and their resources. It includes customary rules of international law governing use of the ocean as well as introducing new legal concepts and regimes.

The legal limits established by LOSC include:

- internal waters,
- a 12-nautical mile territorial sea,
- a 24-nautical mile contiguous zone, and
- a 200-nautical mile exclusive economic zone (EEZ).

Areas outside the jurisdiction of states, such as the high seas beyond states' 200-mile nautical limit as well as the continental shelf are also regulated by LOSC.

States have different degrees of responsibility and power depending on which territorial zone activities take place in. Within a state's internal waters, a coastal state has absolute sovereignty. Within the territorial sea zone, no farther than 12 nautical miles from the baseline, a coastal state still retains complete sovereignty but must allow innocent right-of-passage to foreign ships. Willful and serious marine pollution and unauthorized fishing are acts inconsistent with innocent passage.[62]

Within a contiguous zone, a state has sovereign rights and exercises powers over customs, physical immigration or sanitary laws and regulations. And within the exclusive economic zone, a coastal state has sovereign rights for the purposes of exploring, exploiting, conserving and managing both living and non-living natural resources of the seabed, its sub-soil and the waters above it and with regard to other activities for the economic exploitation and exploration of the zone. Within this zone, the coastal state determines allowable the catch of living resources and harvest limits, if any, for these resources. Any other state which is allowed to harvest marine living resources must abide by the laws and regulations adopted by the coastal state.

Additional legal provisions under LOSC apply to the continental shelf, the high seas, and the seabed area. LOSC established three new international organizations: the International Seabed Authority which organizes and controls activities in the seabed area; the International Tribunal for the Law of the Sea established to settle disputes; and the UN Commission on the Limits of the Continental Shelf.

Part XII of LOSC addresses protection and preservation of the marine environment. All states are obligated to take measures necessary to prevent pollution from any source and all maritime areas. In addition, all signatory states are to take measures necessary to ensure that activities under their jurisdictions will control and are conducted so as not to cause damage by pollution to other states and their environment. Pollution from a variety of sources is regulated by LOSC. States are

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62 CAFF Habitat Conservation Report No. 8: *A Summary of Legal Instruments and National Framework for Arctic Marine Conservation*, CAFF International Secretariat, July 2000, pg. 7.

to adopt domestic laws controlling marine pollution resulting from land-based activities, vessels, and ocean-dumping. Article 234 of LOSC on the prevention, reduction and control of marine pollution from vessels in ice-covered areas within a state's exclusive economic zone, is found in this Part.

International Regulation of Ship Source Pollution. The 1972 Convention on the Prevention of Marine Pollution by Dumping of Waste and other Matter (London Convention) may be of particular use in the Arctic environment, since the Arctic may be used as a dumping ground for hazardous wastes.[63] The volume of radioactive waste dumped into the Arctic Ocean by the Soviet Union is twice as high as that of all previously known dumping worldwide.[64] The potential contamination hazard associated with approximately 130 decommissioned Soviet nuclear submarines most of which remain afloat and have spent nuclear fuel aboard are additional problems.[65] Proposed new acceptance of nuclear waste for disposal by Russia, as well as proposals for Japanese nuclear shipments to ship highly radioactive nuclear wastes from Europe to Japan via the Arctic using Russia's nuclear powered ice-breakers demonstrate the need for increased attention to dumping and navigation.[66]

The London Convention regulates dumping of waste at sea. In 1993, a moratorium on the dumping of radioactive substances was adopted within the framework of the Convention. The Convention was substantially amended by a 1996 protocol, which employs a "reverse listing" approach: all dumping is prohibited except those materials listed in Annex 1 of the Protocol.[67]

The *International Convention for the Prevention of Pollution from Ships* (MARPOL) entered into force in 1973 and is augmented by a 1978 Protocol which entered into force in 1983. This Convention, like other marine conventions, is administered by the International Maritime Organization (IMO). The IMO has a marine environment committee which defines areas in need of special protection from maritime activities. These include special areas (SAs) under Annexes to MARPOL and particularly sensitive sea areas (PSSAs). Restrictions on shipping are in place for areas with these designations. The designations are used in the Antarctic. No such areas have been designated in the Arctic, based on the Arctic Council's Inuvik Ministerial decision in 1996 that no additional legal instruments for the protection of the marine environment were required, and that states should concentrate on ratification and implementation of existing treaties. As coastal states have the power to adopt stricter standards for ice-covered areas pursuant to Article 234 of LOSC, the use of these additional IMO designations may not be necessary. Canada, for example, strictly regulates vessel source pollution in its Arctic waters, requiring ships to meet specified standards for vessel construction, navigation and operation.[68]

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63 Donald R. Rothwell, "Global Environmental Protection Instruments" in Davor Vidas, ed., *Protecting the Polar Marine Environment – Law and Policy for Pollution Prevention* (Cambridge: Cambridge University Press), 2000, 64.

64 Olav Schram Stokke, "Radioactive Waste in the Barents and Kara Seas: Russian Implementation of the Global Dumping Regime" in Davor Vidas, ed. *Protecting the Polar Marine Environment – Law and Policy for Pollution Prevention* (Cambridge: Cambridge University Press), 2000, 65.

65 David VanderZwaag, "Land-based Marine Pollution and the Arctic," in Davor Vidas, ed., *Protecting the Polar Marine Environment – Law and Policy for Pollution Prevention* (Cambridge: Cambridge University Press), 2000, 178.

66 Greenpeace, "New Polar Route Plans for Japanese Nuclear Shipments are Desperate Madness," January 22, 2001 at http://www.greenpeace.org/pressreleases/nuctrans2001jan22.html.

67 ILM, vol. 36, 1997. The *Protocol* makes limited exceptions for cases of emergency.

68 *Arctic Waters Pollution Prevention Act*, S.C. 1970, c-68.

The parties to MARPOL undertake to prevent pollution of the marine environment by the discharge of harmful substances or effluents. Harmful substances are defined to include any substance which if introduced into the sea, is liable to create hazards to human health, harm living resources and marine life and damage amenities or interfere with other legitimate uses of the sea. MARPOL's chief controls are on vessel discharges. MARPOL is a framework convention regulating different types of pollutants in Annexes.[69]

MARPOL is generally considered to be a successful convention. Ship-generated pollution has fallen since it was adopted – from approximately 35% of global marine pollution sources in the early 70's to approximately 10% by the early 90's.[70]

Control of Land-Based Marine Pollution

Land-based pollution is the least regulated form of marine pollution. Experts estimate that approximately 80% of the pollution load in the oceans originates from land-based activities, including municipal, industrial and agricultural wastes and run-offs as well as atmospheric depositions.[71] Though the estimates of 80% of marine pollution emanating from land-based sources do not likely not apply in the Arctic because of the relatively low population inhabiting the area, there are nonetheless many land-based sources resulting from urban areas, mining wastes, oil and gas operations, nuclear activities, industrial complexes such as smelters, pulp and paper mills.[72] Land-based pollution was recognized as a problem in the AEPS and the work of AMAP and PAME continue to focus on addressing these sources of pollution.

Article 207 of LOSC contemplates the further development of international regulation to reduce land-based pollution. An additional global soft law agreement, the *Global Program of Action for the Protection of the Marine Environment from Land-Based Activities* was concluded in 1995. The Global Program of Action (GPA) calls upon states to develop national level plans to address land-based sources of pollution which enter the marine environment.

In 1998, the Arctic Council ministers adopted PAME's regional program of action (RPA) for the protection of the Arctic marine environment from land-based activities. The goals for the regional program of action are: to protect human health, prevent and reduce degradation of the marine environment and coastal areas; remediate contaminated areas; support conservation and sustainable use of marine resources; maintain biodiversity; and maintain cultural values. The RPA

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69 The annexes are:
1 the prevention of pollution by oil (Annex I);
2 the control of pollution by noxious liquid substances in bulk (Annex II);
3 the prevention of pollution by harmful substances in package forms (Annex III);
4 the prevention of pollution by sewage from ships (Annex IV) (not yet in force);
5 the prevention of pollution by garbage from ships (Annex V); and
6 the prevention of air pollution from ships (Annex VI).

70 Donald R. Rothwell, "Global Environmental Protection Instruments" in Davor Vidas, ed. *Protecting the Polar Marine Environment – Law and Policy for Pollution Prevention* (Cambridge: Cambridge University Press), 2000, 60.

71 Global Program of Action for the Protection of the Marine Environment from Land-Based Activities, UNAP, "Why have a global program of action" on the GPA website at http://www.gpa.unap.org/about.

72 For more information on potential sources of land-based activities to marine pollution can be found in David VanderZwaag, "Land-based Marine Pollution and the Arctic," in Davor Vidas, ed. *Protecting the Polar Marine Environment – Law and Policy for Pollution Prevention* (Cambridge: Cambridge University Press), 2000, 178.

notes nine source categories of pollution which are priorities for regional action. The RPA also sets management objectives. For example, one management objective states that at the regional level, Arctic states should "develop and adopt Arctic-wide environmental guidelines on opening, operating and closing mines in the Arctic coastal zone. Mining is defined as the extraction, smelting and concentration of ore."[73]

Other Marine Agreements

The gap analysis conducted by the Arctic states in the EPPR Working Group identified that the management of hazardous substances; control of vessel traffic in the arctic seas and abandoned ships/wreck removal were potential high-risk activities, not currently covered by a comprehensive legal regime. However, as another international forum, the IMO, exists to address these gaps, no regional action was prescribed.

The unique conditions of polar navigation in the Arctic through ice-covered areas creates the potential for greater risks from ships, especially those carrying dangerous loads, or not properly equipped for icy waters. A new Polar Code being developed by the IMO is meant to augment additional risks imposed on shipping due to harsh climatic conditions in polar waters.

In addition, UNEP is establishing a Regional Action Plan to Protect the Arctic Marine Environment with the eight Arctic states. UNEP could act as a catalyst to prompt further action on marine environmental protection.

3.2 Atmosphere

Global treaties on atmospheric protection are significant for the Arctic. Climate change agreements will impact ecosystem health, and constrain hydrocarbon resource development. Toxic chemicals produced and consumed elsewhere disproportionately and disturbingly migrate to and concentrate in the Arctic region. The Persistent Organic Pollutants (POPs) convention, recently concluded, makes special provision for Arctic peoples. The ozone treaty regime seeks to reduce the depletion of the ozone layer, most apparent in the holes over the polar regions.

The international environmental agreements on the atmosphere all have a potential for positive effect on the Arctic environment. The major international treaty on trans-boundary air pollution is the 1979 *Convention on Long-Range Trans-boundary Air Pollution* (LRTAP) and associated Protocols.[74] Negotiated by the United Nations Economic Commission for Europe, the Convention does not apply to states outside Europe and North America. Other significant global treaties to protect the atmosphere include the ozone regime, consisting of the 1985 *Vienna Convention for the Protection of the Ozone Layer* and the 1987 *Montreal Protocol on Substances that Deplete the Ozone Layer*; the climate change treaty, including the 1992 *United Nations Framework Convention on Climate Change* and its 1997 *Kyoto Protocol*, and the new POPS treaty, 2000.

LTRAP

The *Convention on Long-Range Trans-boundary Air Pollution* (LRTAP) was initially drafted in response to scientific evidence demonstrating acid rain in Europe. Signed in 1979 and entered into

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[73] Arctic Council, PAME, *Regional Programmes of Action for the Protection of Arctic Marine Environment from Land-Based Activities*, Minister of Public Works and Government Services Canada, 1999, Available on the Arctic Council website.

[74] All information on LRTAP and its Protocols can be found at http://www.unece.org/env/lrtap/.

force in 1983, the LRTAP was the first internationally legally binding framework agreement outlining general principles for regional co-operation on trans-boundary air pollution abatement. LRTAP has been ratified by all 8 Arctic states except the United States which has accepted it. The Arctic is not mentioned in the Convention. There are a number of Protocols to the Convention.

Three Protocols to LRTAP specifically mention the Arctic:

1. The 1994 Oslo *Protocol on Further Reduction of Sulphur Emissions*, entered into force in 1998,[75] sets long-term targets for reduction of sulphur emissions. Parties to the Protocol have differing emission reduction obligations. The Preamble contains the following paragraph: "*Mindful* that measures to control emissions of sulphur and other air pollutants would also contribute to the protection of the sensitive Arctic environment."

2. The 1998 Aarhus *Protocol on Heavy Metals*, not yet in force, is aimed primarily at controlling cadmium, lead and mercury emissions.[76] The Protocol also aims to reduce emissions from industrial sources, combustion processes and waste incineration. Parties must apply specified limit values to emissions from stationary sources; the Protocol contains suggestions for best available techniques (BAT) for these sources. Parties are required to phase out leaded petrol. In addition, the Protocol lists management measures for products containing mercury. The Preamble contains the following paragraph: "*Mindful* that measures to control emissions of heavy metals would also contribute to the protection of the environment and human health in areas outside the UN/ECE region, including the Arctic and international waters."

3. The 1998 Aarhus *Protocol on Persistent Organic Pollutants* (POPs)[77] not yet entered into force, is aimed at the control, reduction or elimination of discharges, emissions and losses of sixteen substances (eleven pesticides, two industrial chemicals and three by-products/ contaminants). The Protocol bans the production and use of eight substances (aldrin, chlordane, chlordecone, dieldrin, endrin, hexabromobiphenyl, mirex and toxaphene). It specifies elimination of four other substances at a later stage (DDT, heptachlor, hexaclorobenzene, polychlorinated biphenyls). The Protocol also restricts the use of DDT, HCH (including lindane) and polychlorinated biphenyls. Provisions are included for destruction or disposal of the wastes of banned products. The Protocol also obliges Parties to reduce their emissions of polycyclic aromatic hydrocarbons, dioxins/furans and hexachlorobenzene below their 1990 levels (or an alternate year between 1985 and 1995). Specific emission limits are established for municipal, medical and hazardous waste incinerators. The Preamble contains three paragraphs that refer to the Arctic:

   > *Recognizing* that emissions of many persistent organic pollutants are transported across international boundaries and are deposited in Europe, North America and the Arctic, far from their site of origin, and that the atmosphere is the dominant medium of transport,

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75 Canada, Norway and Sweden have ratified it. Denmark (not applying to the Faeroe Islands and Greenland) has approved it. Finland has accepted it. The Russian Federation has signed it. Neither Iceland nor the USA has signed it (status of ratification as of 13 November 2000).

76 Canada (with declaration upon ratification), Norway (with declaration upon ratification) and Sweden have ratified it. Finland has accepted it (with declaration upon ratification). Denmark, Iceland and the USA have signed it. The Russian Federation has not signed it (status of ratification as of 15 November 2000).

77 Canada (with declaration upon ratification), Norway (with declaration upon ratification) and Sweden have ratified it. Denmark, Finland, Iceland and the USA have signed it. The Russian Federation has not signed it (status of ratification as of 15 November 2000).

> *Acknowledging* that the Arctic ecosystems and especially its indigenous people, who subsist on Arctic fish and mammals, are particularly at risk because of the biomagnification of persistent organic pollutants,
>
> *Mindful* that measures to control emissions of persistent organic pollutants would also contribute to the protection of the environment and human health in areas outside the United Nations Economic Commission for Europe's region, including the Arctic and international waters.

The *Heavy Metals Protocol* and the *POPs Protocol* are both aimed at pollution abatement in the Arctic.[78] The *Protocols* include significant restrictions but no obligations for specific percentage reductions in annual emissions. Approximately half the substances targeted in the *POPs Protocol* are not subject to immediate elimination.[79]

Persistent Organic Pollutants (POPs) Treaty. The recently concluded POPs treaty gained impetus from scientific studies demonstrating that POPs were present in the tissue, blood, and even breast milk of Arctic residents living far from any sources of those pollutants. A statement by the President of the Inuit Circumpolar Conference to POPs delegates about the despair of discovering contaminated country food and the fact that Inuit mothers have to think twice about breast-feeding their infants helped achieve the strong treaty.[80]

The treaty implements control measures for the production, use, import, export, and disposal of POPs. The treaty is designed to reduce and eliminate 12 substances (aldrin, chlordane, DDT, dieldrin, dioxins, endrin, furans, heptachlor, hexachlorobenzene, mirex, PCBs, toxaphene), most of which are to be immediately prohibited. A POPs Review Committee will regularly review additional substances for potential addition to the Annexes. Parties are to develop action plans to reduce the total releases of POPs formed and released unintentionally from anthropogenic sources (dioxins, furans, HCB and PCBs), with the ultimate goal of elimination. The action plans are to include, the use of substitute or modified materials, products and processes to prevent the formation and release of POPs, as well as the promotion of best available technologies and practices for replacing existing POPs and preventing the development of new ones. The treaty was concluded in December 2000 and formally adopted and signed in Stockholm in May 2001. The treaty will enter into force upon the 50th ratification.[81]

The agreement contains a preambular paragraph acknowledging the vulnerability of Arctic ecosystems, and especially indigenous communities, at particular risk because of the biomagnification of POPs, and contamination of traditional foods. This paragraph is based on suggestions by Canada, supported by the United States.[82]

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78 D. L. VanderZwaag, "International Commons" (1998), 9 YB iel Law at 272.

79 Ibid.

80 See e.g. ICC, *Northern Contaminants and Global POPs Programme*, at http://www.inusiaat.com, and IPEN, *The Arctic POPs and the Recognition of a Duty*, http://www.ipen.org.

81 http://www.unep.org/Documents/Default.asp?DocumentID=186&ArticleID=2712 http://www.iisd.ca/linkages/download/asc/enb1554e.txt.

82 Earth Negotiations Bulletin, Summary of the Fifth Session of the Inter-governmental Negotiating Committee for an International Legally Binding Instrument for Implementing International Arctic on Certain Persistent Organic Pollutants (IISD: Winnipeg), 2000. http://www.iisd.ca/linkages/download/asc/enb1554e.txt.

Northern indigenous peoples played a significant role in the development of the POPs Treaty, through direct interventions and suggestions for negotiating text at POPs preparatory meetings, to media events, to providing a symbolic Inuit carving to the diplomatic chair of the meeting.[83]

Ozone Treaties

In the mid-1970s, scientists raised concerns that the Earth's stratospheric ozone layer could be at risk of depletion from the release of CFCs and other anthropogenic substances. In 1981, the UNEP Governing Council established the Ad Hoc Working Group of Legal and Technical Experts for the Elaboration of a Global Framework Convention for the Protection of the Ozone Layer. Four years later, the *Vienna Convention for the Protection of the Ozone Layer* was adopted. Parties agreed to take "appropriate measures" to address the actual or potential harm to the ozone layer by human activities. The Convention, primarily encouraging co-operation in research, monitoring and data exchange, did not specify what appropriate measures are, nor did it specify substances that cause ozone depletion.

The Convention did, however, provide for future protocols. It also marked the first time nations committed to addressing a global environmental problem before damage was actually shown. Shortly after the Convention, the first proof of ozone depletion over the Antarctic was established. Negotiations on specific controls eventually led to the signing in 1987 of the Montreal *Protocol on Substances that Deplete the Ozone Layer*.[84]

This Protocol entered into force in 1989. The Protocol's final objective is the elimination of ozone-depleting substances. As an interim measure, the Protocol required developed countries to reduce by 50% the production and consumption of 1986 levels of CFCs by 1999 and to freeze at 1986 levels the production and consumption of halons. Although the Protocol did not establish comprehensive obligations for all ozone-depleting substances, it was designed to be flexible; its provisions can be strengthened as more scientific evidence is brought to light.[85]

Recent criticisms of the Protocol are that its' amendments have not been quickly ratified, new ozone-depleting substances have been introduced into trade, and trade-in CFC-based products has increased. The Antarctic ozone hole in September 2000 covered the largest area ever recorded, but the "stubbornly critical state of the ozone layer" did not translate into decisions on any additional state action at the most recent Meeting of the Parties.[86]

The Arctic is not mentioned in the Convention or the Protocol. All eight circumpolar states are parties to the Convention and the Protocol.

Climate Change

Climate change is a significant environmental problem in the Arctic. Evidence from the Arctic showing the effects of climate change impacts has been unveiled at climate change meetings. Alarmingly, the latest report from the Intergovernmental Panel on Climate Change says that if

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83 Terry Fenge "Indigenous Peoples and Global POPs" in Northern Perspectives, Fall 2000.

84 http://www.iisd.ca/linkages/download/asc/enb1912e.txt. http://www.unep.org/ozone/vienna.htm.

85 http://www.iisd.ca/linkages/download/asc/enb1912e.txt. http://www.unep.org/ozone/mont_prt.htm.

86 Extracted from an analysis of MOP-12 in the Earth Negotiations Bulletin [http://www.iisd.ca/linkages/download/asc/enb1912e.txt].

current emissions trends continue, scientists are unable to rule out the possibility that the Arctic Ocean may become totally ice-free as a result of climate change.[87]

The 1992 *United Nations Framework Convention on Climate Change* (UNFCCC) entered into force on 21 March 1994.[88] Prompted by scientists' warnings, the UNFCCC was developed in much the same way as the Montreal *Protocol on Substances that Deplete the Ozone Layer*.[89] The primary objective of the Convention is the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (Art. 2). The UNFCCC establishes a framework for action to control or reduce greenhouse gas emissions. Parties are to be guided by the precautionary principle in anticipating, preventing or minimizing the causes of climate change (Art. 3.3). The UNFCCC also provides that policies and measures to deal with climate change take into account all greenhouse gas sources as well as sinks, but provides no guidance on the balance between sources and sinks.

In 1997, the *Kyoto Protocol* to the UNFCCC was adopted, but it has not yet entered into force. Under the *Kyoto Protocol*, industrialized countries are required to meet specific targets for greenhouse gas emissions reductions. Negotiations broke down in November 2000 at the Sixth Conference of the Parties, and the future of the Protocol is unclear.[90]

Though the Arctic is not mentioned in the Convention, climate change impacts in the Arctic are often demonstrated or referred to at climate change meetings to show the severity of this environmental issue. For example, at the last Climate Change Summit, video footage from a small community on the edge of the Arctic Ocean was released, which contained testimony from indigenous people about the effect of melting ice and open oceans on their traditional way of life. "The changes they are seeing are dramatic: exotic insects and animals have arrived on their island; the sea ice is thinner and further from the community, carrying with it the seals and polar bears upon which the people depend for food; and permafrost melting has caused an inland lake to drain into the ocean and foundations of the community's buildings to shift and crumble. Life for the people of Sachs Harbour has become increasingly difficult and unpredictable – a dire warning of the negative impacts of climate change predicted to occur elsewhere in the world."[91]

All eight circumpolar states are parties to the Convention.

3.3 Biodiversity: Protection of Species and Ecosystems

Conservation of the extraordinary biological diversity of the Arctic region is a high environmental priority. Human activities can have a great effect on the Arctic's relatively simple ecosystems and negatively affect the region's biological diversity.[92]

The legal framework to conserve biodiversity was strengthened by the adoption of the 1992 *Convention on Biological Diversity*, the first treaty to address conservation and protection of ecosystems on a global scale.

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87 UNEP, Significant Changes Likely In The Arctic From Climate Change, Nairobi/Arendal, Feb.19, 2001, at http://www.grida.no/inf/news/news01/index.htm.

88 http://www.globelaw.com/Climate/fcc.htm.

89 John Vogler, *The Global Commons: Environmental and Technological Governance*, 2nd ed. (England: John Wiley & Sons Ltd, 2000), at 136.

90 http://www.iisd.ca/climate/index.html.

91 *Sila Alangotok: Inuit Observations on Climate Change*, IISD at www.iisd.ca.

92 GEO-2000, Chapter 2 – The Arctic – Biodiversity (Nairobi): UNEP, 2000.

Management regimes previously existed to protect single Arctic species such as:

- northern fur seals (1911 *North Pacific Sealing Convention*: 4 state members);
- polar bears (1973 *Agreement on the Conservation of Polar Bears*: 5 state members); and
- caribou (1987 *Agreement on the Conservation of the Porcupine Caribou Herd*: bilateral Canada/the United States).

Though originally developed to prevent over-harvesting, habitat protection is now a key feature of these single species agreements. Perhaps the most important in this group of treaties, given the large numbers of whale species in the Arctic, the commercial significance of whaling to states such as Iceland and Norway, and the importance of whales to indigenous peoples throughout the region, is the 1946 *International Convention for the Regulation of Whaling*.[93] A strong legal regime is required to protect key Arctic species relied on for subsistence. Fish and marine mammals are the most common foods, and caribou the most common land food for peoples of the North.[94]

Trade of wildlife species, governed by the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* is an issue in the Arctic, as traditional subsistence use of wildlife declines and the need for economic returns grows.

Growth of a regional protected areas network is another biodiversity conservation priority. Significant Conventions in this regard include those dealing with the protection of natural and cultural heritage and wetlands.

Biodiversity Convention

Biodiversity means the whole spectrum of life on earth. It includes species diversity, genetic diversity and ecosystem diversity.[95] Biodiversity is in crisis: species extinctions have reached a rate not seen since the time of the dinosaurs. The biodiversity crisis arises from "inadequate nature reserves, human overpopulation and non-sustainable resource consumption, species extinction, endangered ecosystems, impending rapid climate change, and imperfect laws."[96]

The 1992 *Convention on Biological Diversity* (CBD) or *Biodiversity Convention* was developed to provide a legal response to the crisis. The *Convention* recognizes the "intrinsic" value of biodiversity and has three themes:

- conservation of biodiversity,
- sustainable use of biological resources, and
- equitable sharing of benefits derived from the use of biological resources.

Each of these 3 themes gives rise to legal obligations. The legal obligations are contained in the Articles of the Convention and in subsequent Decisions adopted at the Conference of the Parties to the CBD.

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93 Donald Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge: Cambridge University Press), 1996, 212.

94 SOAER, Peoples of the North.

95 See Edward O. Wilson, *The Diversity of Life* (Cambridge Mass.: Belknap Press of Harvard University Press), 1995.

96 R. Edward Grumbine, *Ghost Bears: Exploring the Biodiversity Crisis* (Island Press, 1994) at 20.

The most relevant Articles of the CBD for the Arctic environment are:

- Article 2, Definitions, which defines biodiversity as "the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems" and sustainable use as "the use of components of biological diversity in a way and at a rate that does not lead to thee long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of future generations";

- Article 7, Identification and Monitoring; and

- Article 8, In-Situ Conservation, which commits Parties to:

  1. establish a system of protected areas (8a);

  2. prevent the introduction, control or eradication of alien species which can negatively impact biodiversity (8h);

  3. respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity (8j); and

  4. develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species and populations (8k).

A regional biodiversity status report and strategic plan have been produced by one of the Arctic Council's Working Groups, the CAFF.

Consumptive Use of Wild Species

The harvest of wild species is the single most common feature of natural resource use that cuts across all the regions and peoples of the Arctic.[97] It is also one of the most controversial activities, as the anti-sealing and anti-whaling lobbies demonstrate. Yet sustainable use is argued by some to have more potential in the Arctic, as a tool for both biodiversity conservation and economic gain. If done with the goal of creating conservation benefits, commercial consumptive use could be of value to Arctic communities, not only for economic benefits, but as a way to preserve traditional lifestyles and cultural values and safeguard the environment. Sustainable use programmes can serve as practical economic incentives to conserve natural habitats when there is a high degree of local participation and local participants derive an equitable share of benefits from that use.[98] Opponents of consumptive use, however, are numerous. Many people worldwide oppose whaling and sealing.

Wildlife Trade

The international wildlife trade, worth billions of dollars annually, has caused massive declines in the numbers of many species of animals and plants. The scale of over-exploitation for trade aroused

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97 WWF, Guidelines for Consumptive Use of Arctic Species, at http://www.ngo.grida.no/wwfap/ccu/.

98 IUCN, *Draft Sustainable Use of Wild Species – A Guide for Decision-Makers*, 2000, Sustainable Use Initiative, www.iucn.org.

such concern for the survival of species that an international treaty was drawn up in 1973, the *Convention on International Trade in Endangered Species* (CITES), to protect wildlife from this threat.

CITES established a world-wide system of controls on international trade in threatened wildlife and wildlife products by stipulating that government permits are required for this trade. Protection is provided for species in two main categories.

The most endangered species are listed in Appendix I and include all species threatened with extinction which are or may be affected by trade. Arctic species in this category include all whales covered by the IWC whaling moratorium. Norway has formally objected to both the IWC moratorium and the CITES trade ban. Norway's decision to resume commercial whaling was based on evidence that the stock of minke whales was abundant and that whales could be harvested on a sustainable basis without risk of extinction.[99] Norway has now unilaterally decided to resume export of an unlimited amount of meat and blubber from North Atlantic minke whales, to Japan, Iceland, and other nations on the basis that trade is a logical consequence of sustainable resource management.[100]

Other species at serious risk are listed in Appendix II, which includes all species which although not necessarily currently threatened with extinction may become so unless trade is subject to strict regulation. Arctic species on Appendix II include polar bears and narwhals.

Appendix III lists all species which any Party identifies as being subject to regulation within its jurisdiction for the purpose of preventing or restricting exploitation. For example, Canada has listed the walrus as an Appendix III species.

Whales and Marine Mammals

Whaling is a traditional occupation in the Arctic, dating back as far as 4000 years.[101] In 1946, the *International Convention for the Regulation of Whaling* (ICRW) was adopted, administered by the International Whaling Commission (IWC). The IWC banned commercial whaling in 1982, by establishing a catch limit of zero for all commercial whaling. But under controversial provisions allowing scientific research and aboriginal subsistence, whaling still occurs. Catch limits for aboriginal subsistence whaling are relatively small: in 2000, the catch limits for bowhead whales, Eastern North Pacific gray whales, West Greenland fin whales, West and East Greenland minke whales totalled about 300.[102] The IWC allowed membership for any interested state, expecting that only countries with whaling industries would participate. However, many non-whaling states are members and wield considerable influence over the proceedings.

Some nations that still engage in coastal whaling created the North Atlantic Marine Mammals Commission (NAMMCO) partly out of frustration with the IWC. According to government

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99 Government of Norway, "Norwegian minke whaling" at http:/odin.depino. Trond Bjorndal and John Conrad, "On the resumption of the Norwegian minke whale hunt" in *Whaling in the North Atlantic – Economic and Political Perspectives*, ed. Petursdottir, (Rekjavik: University of Iceland), 1997.

100 *Export of Norwegian Whale Products*, Government of Norway, at http:odin.depino.

101 Deborah Robinson, "International Dimensions of Global Change: Arctic Applications," unpublished, 1997, available on the Arctic Circle website at www.arcticcircle.uconn.edu, 17.

102 52nd Annual Meeting of the International Whaling Commission, July 2000, at IWC website: http://www.marine.gov.uk/iwc/htm.

representatives, the organization was born out of dissatisfaction with the IWC's zero-catch quota, lack of IWC competence to deal with small cetaceans and the need for an organization to deal with other marine mammals, such as seals.[103] The NAMMCO Agreement, which was signed in 1992 by Norway, Iceland, Greenland and the Faroe Islands, provides a mechanism for cooperation on conservation and management for all species of cetaceans (whales and dolphins) and pinnipeds (seals and walruses) in the region, many of which have not before been covered by such an international agreement.[104] NAMMCO is hosted by Norway, which remains a member of the IWC, but has lodged objections to the commercial whaling ban, and continues to set national catch limits for minke whales.

A Global Plan of Action for the Conservation, Management and Utilization of Marine Mammals has also been developed by UNEP, FAO, IWC and the IUCN.[105]

Fisheries

Consistent with troubling trends worldwide, an increasing proportion of fish stocks were exploited beyond maximum sustainable yield levels in the North Atlantic and the North Pacific until the late 1980s or early 1990s. In the North Atlantic, the situation seems to have improved for some stocks in the 1990s, while in the North Pacific the situation remains unstable.[106]

Harvesting of fish is important as a traditional source of food for indigenous populations, and as a source of economic wealth. For example, fish products constitute about 75% of Icelandic exports.[107] In the Canadian Arctic, the replacement value of the subsistence harvest is high, and commercial and/or recreational fisheries provide one of the few sources of income or occupation for the majority of the population in northern communities.[108]

Fishing raises a host of environmental and sustainability issues, such as the ability of fishing technology to exceed the productive capacity of the seas, bycatch of nontarget species of fish, birds and marine mammals, and contamination of fish through bioaccumulation of POPs.

The legal regime for fisheries is well defined, but not yet effective at preventing overfishing. Coastal states have the sovereign right to exploit, conserve and manage the natural resources of its waters within the 200 nautical mile exclusive economic zone (EEZ) limit.[109] Once fish move outside the EEZ, the coastal state no longer has the jurisdiction to regulate. Fish stocks that straddle

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[103] David D. Caron, "The International Whaling Commission and the North Atlantic Marine Mammal Commission: The Institutional Risks of Coercion in Consensual Structures" 89 Am. J. Int'l L. 154, reprinted in Hunter et al. *International Environmental Law and Policy* (New York: Foundation Press) 1998, 1016.

[104] NAMMCO's website is at http://www.nammco.no/Default.htm.

[105] GEO-2000, *Global Environment Outlook* (UNEP: Nairobi), 2000, chapter 2, The polar regions.

[106] FAO, *The State of the World's Fisheries and Aquaculture*, 2000.

[107] Kevin McCormick, "Involving Local Authorities and Indigenous Peoples in Marine Management," Background Paper, CAFF, IUCN, PAME Circumpolar Marine Workshop, 1999, 15.

[108] R. McV. Clarke, "An Overview of Canada's Arctic Marine Fisheries and Their Management with Emphasis on the Northwest Territories," in Parsons and Lear, eds., *Perspectives on Canadian Marine Fisheries Management*, Canadian Bulletin of Fisheries and Aquatic Sciences 226, 1993.

[109] Article 56, LOSC.

or migrate between EEZs and the adjacent high seas are found in the Arctic in the Barents Sea off the coast of Norway, in the Bering Sea, and in the Sea of Okhotsk.

The *UN Convention on Straddling Stocks and Highly Migratory Stocks*, also known as the UN Fish Agreement (UNFA), provides a framework for the conservation and management of straddling stocks and highly migratory fish stocks in high seas areas regulated by regional fisheries organizations.[110] The treaty incorporates the precautionary approach and the ecosystem approach, and obligates states to minimize pollution, waste and discards of fish.

UNFA require the Contracting Parties to cooperate on straddling and highly migratory fish stocks by participating in regional fisheries management organizations, where they exist. It includes monitoring and inspection provisions, under which one party can inspect vessels of other state parties, to verify compliance with internationally agreed fishing rules of regional fisheries organizations. The Convention is not yet in force. Of the eight Arctic states, five have ratified UNFA: Canada, Iceland, Norway, Russia and the United States.

An ongoing Arctic concern is to afford migratory species protection throughout their migratory ranges. On the high seas, some species may be outside the scope of current protection regimes, and may require further collaboration.[111]

Polar Bears

Over half the world's polar bears are found in Canada. The global estimate of population is between 22,000 and 27,000 bears. The reminder of the world's population is found in Russia, Greenland, the United States and Norway.[112]

The *Agreement on the Conservation of Polar Bears and Their Habitats* was signed in 1973, during the height of the cold war tension, by Canada, the United States, Denmark, Norway and the former Union of Soviet Socialist Republics.[113]

The Agreement prohibits hunting and killing of polar bears, except for cases of bona-fide scientific purposes, conservation purposes, preventing serious disturbances of the management of other living resources, and by indigenous people using traditional methods of hunting.[114] Two of the signatory states, Norway and Russia, have completely banned polar bear hunting, while the remaining states allow limited aboriginal hunts. In practice, very few polar bears are hunted even with these exceptions. Aircraft and large motorized vehicles may not be used for the taking of polar bears.

Parties are required to take appropriate action to "protect the eco-system of which polar bears are a part, with special attention to habitat component such as denning and feeding sites and migration patterns." To meet this obligation, some Arctic states have created protected areas for polar bears such as in North and East Greenland National Park and the Melville Bugt Game

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110 (1995) 34 ILM 1542.

111 Recommendations, Marine Protection, CAFF, IUCN, PAME, Circumpolar Marine Workshop, 1999, 12.

112 *Making International and Environmental Agreements Work: the Canadian Arctic Experience*, 1999 report of the Commissioner of the Environment and Sustainable Development, Chapter 6, Exhibit 6.3 – Polar Bear Facts.

113 (1974) 13 ILM 13.

114 Arctic Polar Bear Agreement, Article III.

Preserve. The three largest Polar Bear denning areas are all protected at Wrangel Island (Russian Federation), on King Karl's Land at Svalbard (Norway), and in western Hudson Bay (Canada).

The parties occasionally meet, but each state generally has achieved the objectives of the agreement using its own domestic laws, policies and programs. Though it lacks a secretariat, an enforcement mechanism, and annual meetings and gives wide freedom given to the five signatory states to set their own management regimes for polar bears, the Agreement is generally considered to be very successful.[115]

In general, polar bear populations across the Arctic are stable. However, additional threats to polar bears have arisen in recent years, aside from hunting. Climate change, industrial and tourism development, and pollution all cause stress for polar bears. The agreement covers none of these subjects. Systematic habitat protection for polar bears also has not yet been completed across the Arctic region. One gap in the protection of polar bears' habitat is off-shore feeding sites.[116] The CAFF Working Group analyzed protection of critical habitat for the polar bear, and found that though breeding sites were protected, very little of the species' core range is protected.[117]

Other single species agreements

In addition, the Arctic states have concluded a number of agreements bilaterally and regionally to conserve specific species.

Caribou are an important Arctic species. In 1987, an agreement between Canada and the United States on the conservation of the Porcupine caribou herd was concluded.[118] The purpose of this agreement is to facilitate cooperation and coordination among wildlife management agencies, users of the herd and other land-users and land-donors in the herd's range. The parties commit to conserving the herd and its habitat. This agreement establishes an international management body, the International Porcupine Caribou Board which has the power to make recommendations only. Each party to the agreement must carry out the recommendations through their own domestic legal regime. The stability of this agreement is currently an issue, due to renewed calls for oil and gas development in the Arctic National Wildlife Refuge, home of this caribou herd.

Reindeer are another important Arctic species, not currently protected by any regional agreement. Reindeer husbandry is an important economic and cultural activity in the Arctic. The Association of World Reindeer Herders exists to safeguard this activity. Infrastructure development, such as roads, mining, power plants and lines have damaged reindeer habitat. A preliminary report from UNEP forecast destruction of between 50 – 80% of existing reindeer grazing areas in the Arctic by 2050, based on extrapolation from 1950 – 2000 data.[119]

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[115] Simon Lyster: *International Wildlife Law* (Cambridge, 1985), 55. Cited in Donald Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge: Cambridge University Press), 1996 at 216.

[116] *Making International Environmental Agreements Work: the Canadian Arctic Experience*, 1999 report of the Commissioner of the Environment and Sustainable Development, Chapter 6.3 – Polar Bear Facts.

[117] CAFF Habitat Conservation Report No. 5 – *Gaps in Habitat Protection in the Circumpolar Arctic – A Preliminary Analysis*, 1996.

[118] *Agreement Between the Government of Canada and the Government of the USA on the Conservation of the Porcupine Caribou Herd*, CTS 1987/31.

[119] C. Nellemann, "Historical and future developments in accessible land areas for Saami reindeer herding – the year 2050 scenario" online at http://www.grida.no/prog/polar/globio/reindeer.htm.

The Arctic Council is sponsoring a project on sustainable reindeer husbandry.[120] Legal protection for reindeer herding rights and pasture land has been identified as an issue requiring further exploration.[121]

Legal protection for **fur seals** is more limited than in the Antarctic, which strictly regulates sealing under the Seals Convention or CCAS. In the Arctic, one of the earliest bilateral wildlife treaties in the world, the 1911 *Convention on the Preservation and Protection of Fur Seals*, was not extended in 1984 due to refusal from the United States.

Conservation of **Arctic breeding birds** presents a daunting challenge. Migratory birds from the Arctic reach every part of the world except the interior of Antarctica. Of the 450 species of birds which breed or have bred in the Arctic region, 279 spend winters outside the Arctic region.[122] Of the numerous international agreements that deal with the protection of nature, many have relevance to birds and their habitat, particularly the *Convention on the Conservation of Migratory Species of Wild Animals*; the *Ramsar Convention*; *CITES*; and the *Convention on Biological Diversity*. More specifically, many regional programmes and action plans address conservation of migratory birds. A comprehensive review conducted in 1998 found that all of the 279 Arctic breeding species obtained "some measure" of protection from one or more of the international or regional legally binding agreements. The report generally concluded that the further a migratory bird travels south from the Arctic, the less likely it is to find itself, or its habitat, adequately protected by legally binding conventions or agreements.

The inter-related nature of environmental threats is demonstrated by the negative impacts of numerous activities on species. Global warming is adversely affecting two arctic animals – the Peary Caribou and the Polar Bear. In 1993, 3,000 Peary Caribou lived in the High Arctic. Four years later, only 75 remained. Peary Caribou survive the winter by digging under the snow to feed on vegetation. Global warming models predict that with heavier snowfalls and more freezing rain, more caribou will be lost. Climate change is also causing problems for polar bears. A recent study by a University of Toronto scientist predicts that the thinning ice on Hudson Bay will lead to the demise of Canada's southernmost population of polar bears within 40 years.[123]

Protected Areas

Overall, about 85% of Arctic land and 98% of Arctic seas are outside protected areas.[124] All Arctic states have promised to protect a minimum of 12% of each Arctic ecozone. The current level of protection varies from a low of 4.9% of Russia's Arctic land mass, to 45.7% of Greenland/ Denmark's land mass.[125] The Arctic Council Working Group on the conservation of Arctic flora and fauna (CAFF) has completed a Strategy and Action Plan for the Circumpolar Protected Areas

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120 The website for this project is at http://www.reindeer-husbandry.uit.no.

121 Golovnev and Osherenko. *Siberian Survival, The Nenets and Their Story* (Ithaca: Cornell University Press), 1999, and Proceedings of Sustainable Reindeer Herding and Husbandry workshop, Mar 8 – 11, 2000 at http://www.reindeer-husbandry.uit.no/beginning.

122 Derek A. Scott, Bird Life International, *Migratory Birds of the Arctic – A Review of International Conventions and Other Legal Instruments Relevant to the Conservation of Migratory Birds,* CAFF, 1998.

123 Ottawa Citizen, December 2, 2000.

124 CAFF Strategic Plan for the Conservation of Arctic Biological Diversity, September 1998, available on the CAFF website at http://www.grida.no/prog/polar/caff/stratplan.htm.

125 GEO-2000, Global Environment Outlook, (UNEP: Nairobi), chapter 2, The Polar Regions.

Network (CPAN). The CPAN Strategy and Action Plan suggests that countries use the IUCN Protected Areas classification system to develop a regional network of protected areas, and urges countries to try to provide strict protection for at least 12% of each eco-zone within the Arctic.[126] No specific terrestrial or marine sites are recommended.[127]

Another CAFF document, the strategic plan for the conservation of Arctic biological diversity, recognizes that most of the Arctic territory will remain outside protected areas.

There are several international agreements related to protected areas which are relevant to the Arctic.

All Arctic states are parties to the *Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat*: all states except Iceland are parties to the *World Heritage Convention*, and all Arctic states except the United States are parties to the *Biodiversity Convention*. However, only two of the Arctic states, Norway and Sweden, are parties to the *Convention on the Conservation of Migratory Species or Wild Animals* (the Bonn Convention).

Ramsar Convention

The *Convention on Wetlands of International Importance especially as Waterfowl Habitat* (Ramsar Convention) signed in Ramsar, Iran, in 1971, is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently 122 Contracting Parties to the Convention, with 1034 wetland sites, totalling 78.2 million hectares, designated for inclusion in the Ramsar List of Wetlands of International Importance. The Ramsar Convention requires a Party to designate suitable wetlands within its territory for inclusion in a List of Wetlands of International Importance.

Ramsar sites have been designated in the Arctic by most of the Arctic states. In Canada, there are five Ramsar sites in the Arctic: Dewey Soper Migratory Bird Sanctuary, McConnell River Migratory Bird Sanctuary, Polar Bear Pass National Wildlife Area, Queen Maud Gulf Migratory Bird Sanctuary, and Rasmussen Lowland.[128]

World Heritage Convention

The *World Heritage Convention* establishes a system of collective protection for cultural and natural heritage of outstanding universal value. Under this system, the Parties are to designate cultural and natural heritage within their territories and to take measures for its protection, preservation and presentation.

The Convention defines natural or cultural sites which can be considered for inscription on the *World Heritage List*, and sets out the duties of State Parties in identifying, protecting and preserving potential sites. Parties are encouraged to integrate the protection of the cultural and natural heritage into regional planning programmes.

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[126] Conservation of Arctic Flora and Fauna (CAFF), Circumpolar Protected Areas Network (CPAN) – Strategy and Action Plan, CAFF Habitat Conservation report No. 6 (1996), 20.

[127] David VanderZwaag, International Law and Arctic Marine Conservation and Protection: A Slushy, Shifting Seascape (1997), Vol. 9, Georgetown International Environmental Law Review 303 ed., 316.

[128] A full list of sites may be found on the Ramsar Convention website at http://www.ramsar.org.

There are at least ten designated World Heritage sites in the Arctic states, including the joint Canada-United States site of Kluane-Wrangell-St. Elias-Glacier Bay-Tatsenshini and Alsek; Russia's Kamchatka Volcanoes and Sweden's Laponian area, home to Saami people who practise traditional reindeer herding.[129]

3.4 Resource Extraction and Waste Disposal

Resource extraction laws are increasingly important for Arctic environmental protection as well, as the diamond rush replaces the moribund gold mining industry, and as onshore and offshore oil and gas exploration boom.

Each nation's domestic legal regime governs mining and hydrocarbon development. Regional issues arise, for example, with pipeline proposals that cross national boundaries, offshore oil and gas development outside national jurisdictional limits, and differential benefits flowing to local communities and indigenous peoples from resource extraction projects. Regional guidelines on resource extraction are few in number. Pollution prevention and abatement guidelines compiled by the World Bank may be applicable in the Arctic, as evidence of widely accepted global standards on particular management methods, pollution control technologies, and industry sector guidelines.[130]

With few exceptions, the Arctic states have generally not entered into cooperative management regimes for non-living resources. Some believe there has been no need to jointly regulate resources in areas where sovereignty is settled.[131] However, treaties or guidelines on hazardous waste movement, oil and gas, and mining are all relevant to the Arctic.

Basel Convention – Trans-boundary Hazardous Waste

The 1989 *Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal* entered into force in 1992. One of the treaty's guiding principles is that hazardous wastes should be dealt with as close to where they are produced as possible. It creates a system of advanced informed consent when hazardous wastes are imported and exported. Each shipment of hazardous waste must be accompanied by a movement document from the point at which a trans-boundary movement begins to the point of disposal. Hazardous waste shipments made without such documents are illegal. In addition, there are outright bans on the export of these wastes to certain countries. Trans-boundary movements can take place, however, if the state of export does not have the capability of managing or disposing of the hazardous waste in an environmentally sound manner.[132]

This issue is relevant to the Arctic because of purported proposals coming out of Russia, in particular, to accept significant imports of hazardous waste for economic gain.[133] Significant

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129 All the World Heritage sites are listed on the website at http://www.unesco.org/whc.

130 World Bank, *Pollution Prevention and Abatement Handbook*, (Washington, DC: World Bank), 1998.

131 Donald Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge: Cambridge University Press), 1996, 342.

132 The text of the treaty and explanatory Guides can be found on the website at http://www.unep.ch/basel/.

133 Giles Whittell, "Russia to accept nuclear waste – for $30 billion," Vancouver Sun, Dec. 22, 2000, A9c.

volumes of industrial waste generated in Arctic areas such as Siberia and the Kola Peninsula, and the potential for such wastes to be transported through Arctic waters, also makes this Convention relevant.[134] By contrast, the export of hazardous waste is prohibited to the *Antarctic Treaty* Area, by Article 4.6 of the *Basel Convention*.

Oil and Gas

The Arctic region may contain some of the world's largest petroleum reserves, located both on land and on the continental shelf. Domestic legal regimes regulate oil and gas extraction on land. However, trans-boundary areas that could be impacted by oil and gas development remain controversial.

Renewed proposals have been made in the United States to permit oil and gas drilling in the Arctic National Wildlife Refuge, home to 129,000 caribou, 300,000 snow geese and an uncounted number of polar bears. The area is a calving ground for a caribou herd that criss-crosses Alaska and Yukon and is also sacred ground for aboriginal groups. It might also contain vast amounts of oil beneath its ice, snow and tundra. The oil industry wants to drill at what wildlife experts call the refuge's "biological heart," an area that has been closed to oil operations since the refuge was established in 1960.[135]

Offshore oil development is another environmental issue in the Arctic. The first offshore oil project in the Arctic Ocean, Northstar, is under development by BP Amoco, and under attack by Greenpeace International.

The particularly sensitive nature of the Arctic environment, prompted several Arctic Council Working Groups to cooperate on the preparation of Arctic Offshore Oil and Gas Guidelines.[136] PAME, EPPR and AMAP consulted with representatives of other governments, non-governmental organizations, industry, indigenous people, and the scientific community to prepare the guidelines. The Guidelines assume that Arctic petroleum activities will be conducted in compliance with applicable international law. Existing legal instruments generally related to offshore oil and gas activities include LOSC, the *International Convention for the Prevention of Pollution from Ships*; MARPOL 73/78 and the *London Convention* 1972.

The guidelines should help both industry and the Arctic nations' central and regional authorities to plan and develop oil and gas activities. Though the guidelines are non-binding, they are intended to encourage the highest standards currently available. They are not intended to prevent States from setting stricter standards, where appropriate.[137]

Mining

No global legally binding agreements concerning mining currently exist. Lately, some NGOs and government representatives have discussed the need for regional guidelines to protect the Arctic environment from the harmful effects of mining.

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[134] Donald Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge: Cambridge University Press), 1996, 214.

[135] See http://www.anwr.org; http://arcticcircle.vconn.edu/ANWR; http://www.arctic-caribou.com.

[136] The *Arctic Environmental Protection Strategy, Arctic Offshore Oil and Gas Guidelines, June 13, 1997*, can be found on the PAME website at http://www.grida.no/pame/FRreports.htm.

[137] Ibid.

Global initiatives on mining are proliferating. One recent initiative, the Mining Minerals and Sustainable Development (MMSD) project, has the objective of "identifying how mining and minerals can best contribute to the global transition to sustainable development." A two-year project which began in April 2000, MMSD is designed both to produce concrete results during that period and to create structures capable of being carried forward thereafter.[138] One potential result from this project could be recommendations on new regulatory regimes for mining at the global or regional level.

Another new initiative concerns voluntary guidelines to protect human rights in security operations linked to international mining and energy projects.[139] The voluntary guidelines are the culmination of a series of discussions between the United States and the United Kingdom governments and BP, Royal Dutch/Shell, Rio Tinto, Texaco, Chevron and Freeport MacMoran, working with Amnesty International, Human Rights Watch, the Prince of Wales Business Leaders' Forum, International Alert and Business for Social Responsibility.

Radioactive Pollution

A number of treaties guard against radioactive pollution, such as the 1986 *Convention on Early Notification of a Nuclear Accident*, the 1994 *Convention on Nuclear Safety*, and the 1997 *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management*. Discussion of these treaties is beyond the scope of this report. Radioactive pollution is a significant concern in the Arctic region, and other regional organizations such as the Barents Euro-Arctic Region are tackling this issue.

3.5 Environmental Impact Assessment (EIA)

EIA can help avoid or minimize negative impacts from resource and other developments. All the Arctic states have domestic EIA statutes. Many Arctic countries have also signed the *Convention on EIA in a Trans-boundary Context* (UNECE), also known as the Espoo Convention.[140] That treaty obligates states to conduct EIAs for trans-boundary impacts. The project proponent's state decides if notification and consultation are required because of potential significant impacts.

New Arctic EIA Guidelines prepared by the Arctic Council are more stringent than the Espoo Convention, encouraging a broader range of projects for inclusion than the developments listed in Appendix I of the Convention. The Guidelines specifically do not replace or overrule existing procedures or guidelines adopted by international, national or provisional laws, land claim agreements or other regulations. Developed to address common Arctic features such as climate, ecosystems and socio-cultural attributes, the Guidelines were finalized and adopted in 1997.[141]

The Guidelines raise issues unique to Arctic such as permafrost, and provide assistance on issues such as traditional knowledge and public participation. The use of the precautionary principle is strongly encouraged.

Areas demanding particular EIA attention in the Arctic are noted in the Guidelines, including sites of great sensitivity or unique geomorphology and areas of spiritual, cultural and other socio-economic value, as well as areas important for traditional resource use.

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[138] From the MMSD website at http://www.iied.org/mmsd/index.html.

[139] Congo-Online listserv, 15 January 2001.

[140] (1991), 30 I.L.M. 800.

[141] The guidelines can be found at http://www.grida.no/aria/eiaguide.pdf.

3.6 Indigenous People and indigenous rights

Indigenous peoples are the original inhabitants of the North. They account for 80% of the population in Greenland, 15% in Arctic Norway, and as little as 3-4% in Arctic Russia.[142]

As the pace of resource development accelerates in the Arctic, the concerns of indigenous peoples become more acute. Large scale development of natural resources has the potential to threaten the traditional values and economies of indigenous societies.

Indigenous peoples play a role in the legal regime, as direct participants in regional coordinating bodies such as the Arctic Council; and through land claims and treaty settlements. Indigenous peoples have some control over land and resources in the new territory of Nunavut and the territories of Yukon and Northwest Territories, Canada; in the "home rule" government of Greenland; in Alaska; and in northern Fennoscandia, through institutions such as the Saami Parliament.[143] The law related to indigenous rights to land in the Russian Federation is unsettled; a Law on the Legal Status of the Numerically Small Peoples of the North is in draft form.[144] Different legal models have been used by the Arctic states to grant decision-making authority to indigenous peoples.

The international law of human rights, and emerging legal principles of indigenous rights therefore affect environmental protection in the Arctic. Members of local communities have valuable traditional ecological knowledge which should be incorporated into environmental decision making. Questions of impacts and benefits from resource development are also relevant to this discussion.

Work on a nonbinding Draft Declaration on the Rights of Indigenous Peoples is proceeding at the United Nations, and most of the Council's Permanent Participants are members of the UN Working Group on Indigenous Peoples.

Article 5 of the Draft Declaration states that "in applying the provisions of this Convention, … the social, cultural, religious and spiritual values and practices of these peoples shall be recognized and protected, and due account shall be taken of the nature of the problems which face them both as groups and as individuals." This right to cultural integrity may entail legal obligations on the Arctic states. One commentator has said that this right may be onerous for the Arctic states because they will have to try to exercise control over the traditional ways of life for indigenous communities, often harmed by activities outside their control, such as POPs affecting traditional foods: "States are now obligated to take positive steps towards safeguarding the environment of indigenous peoples to show the importance of a spiritual, physical and/or emotional nexus to the land and its fruits in terms of its cultural rights."[145]

The most specific existing international treaty related to indigenous rights is the 1989 ILO *Convention Concerning Indigenous and Tribal peoples in Independent Countries*, commonly

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142 SOAER.

143 See web site of the Saami Parliament at http://www.sametinget.se/english/st. for more information.

144 Andrei Golovnev and Gail Osherenko, *Siberian Survival – The Nenets and Their Story* (Ithaca,NY: Cornell University Press) 1999, 23.

145 Jennifer McIver, "Environmental Protection, Indigenous Rights and the Arctic Council: Rock, Paper, Scissors on the Ice?," (1997), vol. 10, Georgetown International Environmental Law Review 147, 157.

referred to by its ILO treaty number, No. 169.[146] This Convention contains provisions to safeguard the environment, safeguard the rights of indigenous peoples to participate in the use, management and conservation of natural resources and to prohibit relocation without consent.

Settlement of outstanding indigenous land and resource claims in the Arctic could have a major impact on environmental protection, resource management control shifts either completely or partially to indigenous groups. In many Arctic states, indigenous rights are constitutionally protected. As a result, central governments are constrained in their ability to make regional decisions about Arctic land and resource management without the participation of indigenous peoples, either through consultation or through more direct representation at the Arctic Council "table."

3.7 Trade Agreements

Trade agreements are relevant to the Arctic in a number of ways, though a general discussion of the trade/environment debate is beyond the scope of this report. Specific trade issues relevant to Arctic environmental protection concern barriers to trade in marine mammal products. Domestic laws in the United States ban the importation of products derived from marine mammals. The United States does not wish this issue to be discussed by the Arctic Council's Sustainable Development Working Group, despite the wishes of the other Arctic states.[147] Campaigns against the harvesting of whales, seals, and other fur bearers have dramatically changed life in the Arctic, by making trapping unprofitable, and requiring Northern residents to find alternate livelihoods, which may or may not be economically and environmentally profitable.[148]

Incorporation of environmental/trade provisions such as Article 1114 of the *North American Free Trade Agreement* (NAFTA), which prohibits waiving environmental standards to attract investment, or those in the *North American Agreement on Environmental Cooperation* (NAAEC), may be an appropriate goal for an Arctic agreement.[149] Calls for an Arctic free trade agreement have already surfaced, and a regional environmental agreement could well complement this type of agreement, if enacted.

4. Greater Use of Existing Global Agreements

As this review shows, many global agreements include the Arctic, and were designed to address environmental problems that surface most acutely in the Arctic. Many of the most urgent Arctic environmental issues, such as climate change and persistent organic pollutants can only be solved through global, multilateral approaches as the roots of these problems lie outside the Arctic. The participation of Arctic states, civil society organizations, and the Arctic Council in these global regimes is critical, to raise the Arctic dimension of the problems, and to propose Arctic solutions that will make a difference.

Common criticisms of global environmental treaties, such as overlap, duplication, and lack of coordination are also relevant from the Arctic viewpoint. Recent increased efforts to improve international environmental governance structures will assist areas such as the Arctic, which are disproportionately affected by activities beyond the reach of their national governments.

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146 28 ILM 1382 (1989).

147 David VanderZwaag, "International Commons – Arctic," (1999) vol. 10 YbIEL, 306.

148 Deborah Robinson, "International Dimensions of Global Change: Arctic Applications," unpublished, 1997, available on the Arctic Circle website at www.arcticcircle.uconn.edu.

149 The full text of NAFTA is available at http://www.nafta-sec-alena.org, and the NAAEC at http://www.cec.org.

Global treaties also have different rules about participation of non-state actors. Harmonizing these rules would assist the efforts of groups who want to participate in this complex maze of international meetings. The special role given to indigenous peoples in the emerging Arctic legal regime does not exist elsewhere in the global environmental treaty system. Consideration of how best to incorporate indigenous participation into these other regimes could be a topic for the Arctic Council.

Some global treaties could be further tailored to address Arctic environmental issues. For example, the special provisions of LOSC related to ice covered areas could be used more in the Arctic. Use of this treaty would require ratification by all the Arctic states.

Global treaties could also be used to add a layer of additional protection and management to certain sites. For example, the World Heritage Convention could be used to designate more regional sites of particular ecological significance, and achieve some measure of additional protection. This proposal has been made for protection of the calving grounds of the Porcupine Caribou Herd in the United States and Canada.[150] The *Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat* could be used more in the Arctic to promote conservation of these biologically threatened areas.

Additional research would likely identify even more possible ways that existing international environmental agreements could be used to address the particular needs and environmental problems of the Arctic.

IV. The Antarctic Environmental Legal Regime

Though the two polar regions share common environmental traits, they are opposites in strategic importance, history, and culture. Geographically, they are opposites: Antarctica is the seventh continent, and the Arctic is an ocean ringed by states.

This chapter will briefly describe the *Antarctic Treaty* System, a model of environmental management and conservation. The description will provide background for the next chapter, which compares the legal regimes of the two polar areas. Though it is tempting to look to the Antarctic as a model for future legal development in the Arctic, key critical differences in the two regions make this unlikely.

1. The Antarctic

The land mass at the south pole is unique. It does not belong to any state. An immense ice desert, Antarctica's 14 million square kilometers sheet of ice contains most of the world's ice, and if melted, fresh water. The world's climate depends on this "natural refrigrant."[151] Larger than either Europe or Australia, characterized by extreme weather conditions, Antarctica is the only continent with no history of human habitation. And its famous inhabitants also set Antarctica apart – penguins, seals, whales, myriad species of birds. There are seven species of Antarctic penguins: Adelie, Gentoo, Macaroni, Chinstrap, Rockhopper, King and Empire. Penguins fly under water

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[150] Nigel Bankes and Terry Fenge, testimony to SCFAIT, cited in SCFAIT Report, *Canada and the Circumpolar World*, chapter 9, p.7.

[151] Jack Yves Cousteau and Bertrand Charrier, "The Antarctic: A Challenge to Global Environmental Policy" in Yerhoeven et al, *The Antarctic Environment and International Law* (1992), cited in Hunter, Salzman and Zaelke, *International Environmental Law and Policy*, (New York: Foundation Press), 1076.

with remarkable flipper-like motions, rather than flying in the air like other birds. There are six species of seals: Crabeater, Leopard, Weddell, Ross, Elephant and Antarctic Fur Seals. Tiny crustaceans called krill are the key link in the Antarctic food chain. Marine mammals, fish and sea birds all depend on krill. The inhospitable climate, unique environment and lack of indigenous human residents or development make the Antarctic a great natural laboratory, so it is not surprising that the predominant activity in the Antarctic is science.

2. Overview of the Antarctic Treaty System

The Antarctic Treaty System (ATS) remains the only international legal regime that has managed the affairs of a whole continent and its region.[152] From the perspective of managing an entire continent, the ATS must be considered a success, even a "world order miracle."[153] No major disputes have arisen requiring resolution under the treaty and all major contentious issues have been peacefully resolved. The sovereign claims of the original seven Antarctic claimants (Argentina, Australia, Chile, France, New Zealand, Norway and the United Kingdom) still exist but are largely left unexercised. In addition, both the United States and the Russian Federation have reserved the right to make claims, but have not yet made any claims.

The ATS was not designed to protect the environment but has continually evolved in that direction since the first treaty was signed in 1961. When the *Madrid Protocol on Environmental Protection* came into force in 1998, the shift of this treaty system towards environmental protection was complete. Commentators are of the view that the ATS represents a model for international environmental law.[154]

The 1991 *Protocol on Environmental Protection to the Antarctic Treaty* formally recognizes the ATS as comprising "the *Antarctic Treaty*, the measures in effect under the treaty, its associated separate international instruments in force and the measures in effect under those instruments (Art. 1(e)).

The four main agreements are:

1. The *Antarctic Treaty*, (AT) 1961,

2. The Convention for the Conservation of Antarctic Seals,

3. The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), and

4. The Protocol on Environmental Protection to the *Antarctic Treaty* (also known as the "*Madrid Protocol*").

Each of the components of the ATS is discussed below.[155]

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[152] Donald Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge: Cambridge University Press), 1996, 7.

[153] Richard Falk, 'The Antarctic Treaty System: Are There Viable Alternatives?' in Arnfinn Jorgensen-Dahl and Willy Ostreng (eds.), *The Antarctic Treaty System in World Politics*, (London, 1991), 399 in Rothwell, 457.

[154] Donald Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge: Cambridge University Press), 1996, 351.

[155] John Heap, Editor, *Handbook of the Antarctic Treaty System*, 8th Edition, 1994, available on line at http://www.icair.iac.org.nz/Subfolder/treaty/handbook/forward_eighth.html. This Handbook is a very useful reference guide, containing all documents comprising the ATS,

3. The *Antarctic Treaty*

The *Antarctic Treaty* provides the base of the Antarctic Treaty System.[156] Originally negotiated to end competing sovereignty disputes and give scientific research supremacy over resource extraction and military activities, this treaty now provides the foundation for a sophisticated environmental legal regime.[157] One of the first "framework" conventions, the treaty itself is a relatively short and uncomplicated agreement.

Objectives. The objectives of this treaty are to:

- freeze sovereignty claims (Article IV);
- prohibit military activity and ensure that the Antarctic is used for peaceful purposes only (Article I); and
- provide for freedom to carry out scientific research (Article II).

Parties. The 12 nations listed in the preamble signed the *Antarctic Treaty* on 1 December 1959 at Washington, D.C. The treaty entered into force on 23 June 1961; the 12 signatories became the original 12 consultative nations, known as the Antarctic Treaty Consultative Parties (ATCP).

As of December 2000, 15 additional nations had achieved consultative status by acceding to the treaty and by conducting substantial scientific research in Antarctica. Another 17 nations have acceded to the *Antarctic Treaty*. These nations agree to abide by the treaty and may attend consultative meetings as observers.

How Policy Is Set. The Consultative Parties set policy by adopting recommendations at annual meetings, called Antarctic Treaty Consultative Meetings (ATCM).

Geographic Scope. The treaty applies to all land south of sixty degrees south latitude, the Antarctic Treaty Area (ATA).

Prohibitions. The treaty prohibits nuclear explosions (Article V), radioactive waste disposal, (Article V) and any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military maneuvers, as well as the testing of any type of weapons in the treaty area, (Article I). The use of military personnel or equipment for scientific research or for any other peaceful purposes is specifically allowed.

Scientific Focus. The treaty encourages the continuation of scientific research subject to the provisions of the treaty, Art. II. Under the provisions of Art. III, the parties agree to support the exchange of information on specific programs and scientific observations and results. The Scientific Committee on Antarctic Research (SCAR) operates informally as the scientific advisory body to the treaty.[158]

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including the *Antarctic Treaty*, the *Protocol on Environmental Protection to the Antarctic Treaty*, 'measures [recommendations] in furtherance of the principles and objectives of the Treaty', and separate instruments dealing with seals and living resources.

156 The text of the *Antarctic Treaty* is published in the United Nations Treaty Series, vol. 402, 71; The text of the treaty is available online in a number of places. One site for the text is http://www.nsf.gov/od/opp/antarct/anttrty.htm.

157 Donald Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge: Cambridge University Press), 1996, 51.

158 SCAR maintains a website at <http://www.scar.org.>.

Sovereignty. Art. IV(2) provides that, while the treaty is in force, there can be no enhancement of an existing sovereignty claim and there is a prohibition on the assertion of new claims of the enlargement or existing claims. Seven states have made territorial claims for the Antarctic, all of which still exist, and have been effectively "frozen" for the life of the treaty. The treatment of sovereignty claims is viewed as one of the most important factors in the stability of the region – Article IV has been called the "diplomatic master stroke" of the treaty.[159]

Inspections. Another significant section of the treaty allows the Parties to conduct inspections to investigate alleged treaty violations. Article VII allows for unannounced on-site inspections by designated observers of any Consultative Party of all areas of Antarctica, including all stations, installations and equipment within those areas, and all ships and aircraft at points of discharging or embarking cargoes or personnel in Antarctica. Aerial inspection is also permitted. The inspection provisions were included to allow Parties to confirm that no military activities were taking place, but are now used to monitor environmental measures as well. Inspections are now, for example, carried out on board tourist vessels. Since 1961, at least thirty-one official inspections have been carried out, and no violations of the treaty have been reported.[160] However, Greenpeace has alleged violations of the treaty after doing its own private inspections of scientific stations and bases.[161] The right of state parties to make unannounced inspections set an important precedent in international law, and has been repeated only rarely, primarily in fisheries agreements.

Enforcement and Dispute Resolution. The *Antarctic Treaty* encourages the peaceful settlement of disputes by the parties. Article X, requires the Parties "to exert appropriate efforts, consistent with the Charter of the United Nations, to the end that no one engages in any activity in Antarctica contrary to the principles or purposes of the present treaty."

Amendment or Modification. Art. XII provides for two types of amendment processes: i) ordinary amendment or modification occurring during the life of the treaty, ii) holding of a review conference. The ATS has evolved without formal amendment or modification of the original treaty. The *Antarctic Treaty* has been supplemented by additional treaties and by one important Protocol.

Secretariat. The Antarctic Treaty System does not have a formal permanent secretariat. Decision-making occurs through the recommendations made at the annual Consultative Meetings hosted in rotation by Consultative Parties.

Environmental Protection. A product of its times, drafted in the late 1950s, the original *Antarctic Treaty* was negotiated more to resolve sovereignty and manage resources rather than to protect the environment. Environmental protection, originally considered as a means to preserve the continent as a pristine laboratory for research, is now perceived to be an end in its own right.[162]

The sole provision related to the environment in the treaty states that the Consultative Parties can make recommendations at an ATCM about the preservation and conservation of living resources.[163] In 1964, this provision was fleshed out, when the Parties adopted Recommendation

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159 Hunter, 1083.

160 Christopher Joyner, "The Legal Status and Effect of Antarctic Recommended Measures" in Dinah Shelton, ed. *Commitment and Compliance*, (Oxford: Oxford University Press, 2000), 177.

161 David Hunter, James Salzman and Durwood Zaelke, *International Environmental Law and Policy*, (Foundation Press: New York), 1091.

162 Lee Kimball, "The Antarctic Treaty System" in John R. Twiss and Randall Reeves, eds., *Conservation and Management of Marine Mammals*, (Washington: Smithsonian Institution Press), 1999, 203.

163 Article IX (1) (f).

III-8, which included the Agreed Measures for the Conservation of Antarctic Fauna and Flora. These Measures established a permit system for killing or capturing native wildlife, which was otherwise prohibited. The "Agreed Measures" also declared the Antarctic treaty area to be a 'Special Conservation Area', seeking to bind not only the *Antarctic Treaty* parties but also to the third parties. In addition, 'Specially Protected Areas (SPAs) (Art. VIII) were created to protect flora. The number of "recommended measures" adopted by consensus by the ATCP states since the inception of the treaty number over two hundred and occupy a unique legal position in between non-binding norms and legally binding obligations.[164] In practice, the measures have been followed by the Parties, and are now consolidated in and superseded by the *Madrid Protocol*, which entered into force in 1998.

Almost all the subsequent developments of the treaty system do relate to environmental protection. Two subsequent stand alone treaties deal with marine life conservation, and the 1991 *Madrid Protocol* addresses the environment in a comprehensive manner.

4. The Convention for the Conservation of Antarctic Seals (CCAS)

This treaty, negotiated in 1972, entered into force in 1978.[165] The Seals Convention imposes catch restrictions on sealing, and creates a closed season. The Contracting Parties agree that the six species of seals enumerated in Article 1 shall not be killed or captured within the Convention area by their nationals or vessels under their respective flags except in accordance with the provisions of this Convention.

Each party exchanges statistical information on catches, and reports on the steps taken to implement the Convention. The treaty is implemented through domestic prohibitions and restraints, a traditional approach to conservation of a single species, in contrast to the ecosystem approach taken by CCAMLR.[166] Scientific oversight for the state reports is provided by the Scientific Committee on Antarctic Research.

The Convention was negotiated because of concern that commercial harvesting of seals would occur if left unregulated. In fact, interest in commercial sealing has waned since the Convention was adopted, and the fur seal populations have increased. Diminishing interest in sealing reduces the importance of this Convention.

5. The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR)

In 1980, the *Antarctic Treaty* Parties adopted the *Convention on the Conservation of Antarctic Marine Living Resources* (CCAMLR). This treaty is also open to non-Parties to the *Antarctic Treaty*. CCAMLR was developed to control increased krill fishing in the early 1970s, recognizing the critical role of krill, the main food source for many Antarctic whale, seal, bird and fish species, in the Antarctic ecosystem. The Convention also aimed to prevent the historic overexploitation of living resources in the region, such as fur seals, elephant seals, whales, seabirds such as penguins, and fish.

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[164] Christopher Joyner, "The Legal Status and Effect of Antarctic Recommended Measures" in Dinah Shelton, ed. *Commitment and Compliance*, (Oxford: Oxford University Press, 2000), 162.

[165] The text can be found on line at http://www.antcrc.utas.edu.au/opor/Treaties/antseal.html.

[166] Duncan French, *Sustainable Development and the 1991 Madrid Protocol to the 1959 Antarctic Treaty: The Primacy of Protection in a Particularly Sensitive Environment*, (1999), vol. 2:3, JIWLP.

The Convention covers Antarctic marine living resources, other than Antarctic seals, which are covered by the CCAS, and whales which are covered by the *International Convention for the Regulation of Whaling*. The Convention defines a Commission and a Scientific Committee to work together to manage marine living resources in the Southern Ocean. CCAMLR has a mandate to conserve and manage mainly high-seas areas. It applies to all marine living resources between the Antarctic continent in the south and the Antarctic Polar Front in the north (at about 50°S), which is a zone where colder, fresher waters flowing north from the Antarctic meet the warmer, saltier waters flowing south from the Atlantic, Indian and Pacific Oceans.

Harvesting of fish and other resources is permitted, if done according to the Commission's regulations. Commercial exploitation limits are set with the primary objective of ensuring no negative effects on the rest of the food chain. The CCAMLR also has an inspection system, which allows inspectors to board vessels from *Antarctic Treaty* states that are fishing in the Southern Ocean and conduct brief inspections for compliance with catch limits.

Ecosystem Approach. The CCAMLR was one of the first global Conventions to adopt both the ecosystem and precautionary approaches to management sustained conservation of Antarctic marine living resources. The ecosystem approach is meant to take into account all the delicate and complex relationships between organisms and physical processes that constitute the Antarctic marine ecosystem. CCAMLR regulates fishing for some key species, and also attempts to ensure that fishing does not adversely impact other species. For example, krill harvesting is regulated and monitored directly, and the potential effect which harvesting may exert on species that either eat krill or which in turn are eaten by krill predators is also monitored.[167] Though the regime is soundly based in science and law, in practice illegal, unreported and unregulated fishing continues in the Convention area and challenges the effectiveness of the *Antarctic Treaty* system.[168]

6. The Protocol on Environmental Protection to the *Antarctic Treaty* (Protocol or *Madrid Protocol*) 1991

The *Protocol on Environmental Protection* entered into force in 1998, and completed the transformation of the *Antarctic Treaty* from an antimilitary, research focussed regime to one devoted almost entirely to environmental protection. The regime's purpose is set out in Article 2: "The Parties commit themselves to the comprehensive protection of the Antarctic environment and designate Antarctica as a natural reserve, devoted to peace and science."

The Protocol was spurred by concerns about the effects of increasing Antarctic tourism and by publicity from NGOs about pollution at the research stations. Greenpeace's World Park Base monitoring station and reports and media releases were instrumental in publicizing these issues. Maritime accidents in both polar regions also increased public concern about protecting the Antarctic environment.

An additional key reason for negotiation of the Protocol was continuing controversy over mining. In the early 1970s, the oil embargo imposed by the Organization of Petroleum Exporting Countries and renewed commercial interest in the Treaty Area prompted the development of a treaty to regulate all mineral activities, including drilling for oil and gas.[169] Countries negotiated

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[167] From the CCAMLR website at www.ccamlr.org.

[168] UNEP, *GEO-2000 Global Environment Outlook,* (UNEP: Nairobi), 2000, chapter 2, The Antarctic.

[169] Lee Kimball, "The Antarctic Treaty System" in John R. Twiss and Randall Reeves, eds., *Conservation and Management of Marine Mammals*, (Washington: Smithsonian Institution Press), 1999, 209.

a *Convention on the Regulation of Antarctic Mineral Resource Activities* (CRAMRA or the *Minerals Convention*) in the 1980s. The purpose of CRAMRA was to create an Antarctic mineral resource regime consistent with the *Antarctic Treaty*. Though adopted and signed by many states, a vigorous NGO campaign convinced many states not to ratify this Convention. Consequently, due to lack of ratification, CRAMRA has yet to enter into force.

In place of the failed Minerals Convention, the Protocol, "one of the most protective international agreements the world has seen," was adopted.[170] The Parties to the *Antarctic Treaty* signed the *Madrid Protocol on Environmental Protection to the Antarctic Treaty* on October 4, 1991 after two years of negotiation.[171] The Protocol came into force in 1998.

The Preamble to the Protocol establishes two principles: the need to protect the Antarctic environment and dependent and associated ecosystems, and the desire to "supplement the *Antarctic Treaty*." Protection of the Antarctic environment is necessary for scientific reasons, as well as in the interest of mankind. The idea of supplementing the treaty, rather than adopting a "free-standing" convention, was a significant concession to those who supported maintenance of the existing system.

Obligations. The central obligation of the Protocol is found in Article 3, Environmental Principles, which states that activities in the Antarctic treaty area shall be planned and conducted with the fundamental considerations in mind of:

- protecting the Antarctic environment;
- protecting its wilderness and aesthetic values; and
- protecting its value as an area for the conduct of scientific research.

Article 3(2) requires activities to be planned and conducted so as to limit adverse impacts on the Antarctic environment and dependent and associated ecosystems, Scientific research is to be given priority over all other activities. The detailed procedures for environmental impact assessment found in Article 8 and Annex I strengthen the requirement for advance planning to minimize adverse environmental effects.

Prohibition on Mining. Any activity relating to mineral resources, other than scientific research, is prohibited, Article 7. The prohibition on Antarctic mineral resource activities will continue unless there is in force a binding legal regime on Antarctic mineral resource activities that includes an agreed means for determining whether, and, if so, under which conditions, any such activities would be acceptable.

Annexes. The Protocol has four Annexes which are in force. Each of the Annexes had its genesis in one or more measures adopted by the Parties. The Protocol and its Annexes have transformed the soft law recommended measures into new, legally binding hard law.[172]

The four annexes form an integral part of the Protocol:

Annex I, *Environmental Impact Assessment*; Annex I is the most significant of the Annexes as it creates the procedure for an EIA. An EIA, called a Comprehensive Environmen-

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[170] David Hunter, James Salzman and Durwood Zaelke, *International Environmental Law and Policy*, (Foundation Press: New York), 1088.

[171] (1991), *International Legal Materials*, 30, 1461.

[172] Christopher Joyner, "The Legal Status and Effect of Antarctic Recommended Measures" in Dinah Shelton, ed., *Commitment and Compliance*, (Oxford: Oxford University Press, 2000), 181.

tal Evaluation, must be prepared for any activity having more than a "minor or transitory impact" Annex I, Art. II.

Annex II, *Conservation of Antarctic Fauna and Flora*; This is a restatement and replacement of the 1964 Agreed Measures on the Protection of Flora and Fauna.

Annex III, *Waste Disposal and Waste Management*; This Annex requires stringent waste disposal standards to be used for past and present work sites.

Annex IV, *Prevention of Marine Pollution;* This Annex contains standards similar to those in the MARPOL Convention, and is specifically linked to MARPOL.

In addition, Annex V, *Area Protection and Management*, was adopted but has not yet entered into force. It seeks to reorganize the complex system of area management used in the Antarctic, which consists of historic sites, historic monuments, sites of special scientific interest, specially protected areas, specially reserved areas, and multiple use planning areas.

Institution. The Protocol establishes a Committee for Environmental Protection, to report on and monitor the implementation of the Protocol. The Committee has no powers of enforcement.

Inspections. Article 14 sets out a system of inspection, expanding on the system used in the *Antarctic Treaty* and following the procedure under CCAMLR which requires the inspection report to be made public, and allows the inspected nation to comment on a report before it is submitted to other nations.

Liability. Article 16 states that the Parties undertake to elaborate rules and procedures relating to liability for damage arising from activities taking place in the Antarctic treaty area and covered by this Protocol. Those rules and procedures shall be included in one or more Annexes to be adopted in accordance with Article 9 (2). This Protocol has not yet been completed, though efforts have been made by a drafting group of legal experts to prepare this Protocol.

7. Contribution to International Law

One expert commentator has noted that the ATS has made substantial contributions to international law by:

- adopting innovative approaches to solving sovereignty disputes,
- rejecting traditional notions of territorial jurisdiction,
- creating a regime in which emphasis is given to freedom of scientific research,
- establishing protective measure for the flora and fauna of a whole continent and region,
- implementing an ecosystem approach to marine living resource management,
- prohibiting all mining activities in order to protect the environment, and
- implementing a legal system that seeks to protect the dependent and associated environment of the region from the impact of all human activities.[173]

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[173] Donald Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge: Cambridge University Press), 1996, 154.

V. Comparison of Polar Environmental Legal Regimes

Comparisons with the well-developed Antarctic Treaty System (ATS) inevitably arise when considering the relatively undeveloped Arctic legal regime. This chapter compares the environmental legal regimes of the two polar regions.

The polar regions are polar opposites in many respects. In the Antarctic, land, rather than the ocean, is the focus of the legal regime. The absence of an indigenous population and traditional way of life also distinguishes the South from the North Pole. Industrial and resource development, starting in the 19th century with whaling and sealing, and continuing with mining, hydrocarbon and other industrial development, is more extensive in the Arctic than the Antarctic and has resulted in more substantial environmental impacts. Another distinguishing factor is that Antarctica is non-militarized while the Arctic is a highly strategic, militarized territory. The Arctic has a population of about 3.8 million, while the Antarctic has no permanent resident population, and is visited by only about 15,000 tourists a year.[174]

Conversely, similarities between the two regions abound. Both regions have harsh fragile environments susceptible to damage from outside sources. The poles are empty, inaccessible, and harsh. Extreme climatic conditions prevail. Unique flora and fauna set these regions apart from more temperate zones.

Antarctica, as a single continent, with no indigenous or permanent human inhabitants, and no commercial or industrial activities, is more easily governed by a single treaty system, with a comprehensive environmental regime. Resolution of sovereignty over the Antarctic land mass and its offshore areas has dominated legal discussions in that region, issues suited to be resolved by a treaty system. The Arctic, on the other hand, is a region dominated by the existing national legal systems of the eight Arctic states, which cover not only their land areas but their marine territories, to the limit of the 200 nautical mile exclusive economic zone. The inhabitants of this region require a legal regime that permits them to thrive, while at the same time protecting the fragile environment. The patchwork nature of the environmental legal regime in the Arctic consists of domestic environmental laws, and a developing soft law regime under the Arctic Council. The patchwork is both an advantage as each national legal system includes many opportunities to increase environmental protection, and a challenge in terms of coordinating the numerous different environmental laws.

A key question is whether the environmental protection provisions implemented on the national territory of the Arctic states and the coordinated action under the Arctic Council are sufficient to protect the Arctic environment.

1. Relationship Between Two Polar Legal Regimes

Seven of the eight Arctic States are also Parties to the *Antarctic Treaty*. (The exception is Iceland). Both regions operate under a similar decision-making structure. The Arctic Ministers meet biennially, and Antarctic Treaty Consultative Meetings are also held biennially. At the biennial meetings of the Parties to the *Antarctic Treaty*, the Arctic regime is discussed. The Antarctic Parties have stressed the desirability of information exchange between the Antarctic and Arctic processes.

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[174] Davor Vidas, "Protecting the Polar Marine Environment: Interplay of Regulatory Frameworks" in Davor Vidas, ed., *Protecting the Polar Marine Environment – Law and Policy for Pollution Prevention,* (Cambridge: Cambridge University Press), 2000. 8.

Final reports of the AEPS and its successor, the Arctic Council, are provided at ATCMs. Though noting the need for information exchange, the Parties have stressed that the political and legal context governing activities in the Arctic and the Antarctic differ considerably.[175]

2. Different Legal Treatment of Common Issues

Common issue areas that drive the development of law and policy in both regions are: science, territorial sovereignty, national security, and indigenous people and the environment.[176]

2.1 Science

In the Antarctic, the legal regime has a scientific research focus as opposed to the sustainable development focus now in place in the Arctic, although clearly the scientific focus is important in both areas.

There is interaction between the scientific activities in the Arctic and the Antarctic. The two coordinating scientific bodies, SCAR and the International Arctic Science Committee, meet and have carried out joint activities such as co-sponsoring a symposium on Polar Aspects of Global Change.[177] No "State of the Antarctic Environment Report" similar to the comprehensive SOAER has yet been completed though a scoping study for such a report is under consideration.[178]

2.2 Territorial Sovereignty

Sovereignty concerns have been predominantly terrestrial in the Antarctic, compared to the Arctic, where maritime boundary issues have predominated, especially with the growth of offshore areas subject to national jurisdiction.[179] The influence of international law in the Antarctic derives from sovereignty claims, not only to the continent, but also to offshore maritime areas. In the Arctic, the law of the sea has played an important role along with bilateral and other regional initiatives to deal with common problems.

2.3 National security

Military activities and their environmental effects are distinguishing features between the two regions. Military activities are prohibited by the *Antarctic Treaty*. The world's two nuclear powers dominate the Arctic region, and continue to deploy nuclear and other military forces there. An ongoing thorn in United States-Canadian relations is the United States' refusal to notify Canada

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175 1996 Utrecht ATCM Report, Final Report of the XX Antarctic Treaty Consultative Meeting, online at http://www.icair.iac.org.nz/Subfolder/treaty/treaty/atcm.html.

176 This list is from Donald Rothwell, *The Polar Regions and the Development of International Law,* (Cambridge: Cambridge University Press), 1996, 44 with the addition of indigenous people.

177 1997 Christchurch ATCM Report, Final Report of the XX I Antarctic Treaty Consultative Meeting, online at http://www.icair.iac.org.nz/Subfolder/treaty/treaty/atcm.html.

178 Meeting of the Committee for Environmental Protection, The Hague, The Netherlands, 11-15 September 2000, available online at http://www.scar.org/mcmurdo/CEP%20III%20Papers/IP%20SAER.

179 Donald Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge: Cambridge University Press), 1996, 46-47.

when its nuclear submarines pass through Canadian waters in the North. The Russian nuclear submarine fleet is also active in the North. "Matters related to military security" were specifically excluded from the Arctic Council's mandate, even though the environmental effects of those activities have been examined, for example, in the SOAER.

2.4 Environment

Comprehensive Legal Regime vs. Voluntary Strategy and Programmes

An obvious key difference between the two polar legal systems is that the Antarctic is governed by hard law compared to the Arctic soft law regime.

As a whole, the *Antarctic Treaty* provides a comprehensive regime for environmental protection. In particular, the *Madrid Protocol* sets specific requirements in a number of areas. The Arctic, in contrast, relies on a voluntary agreement, the AEPS, now transformed into the activities of the Arctic Council and its Working Groups.

However, soft law can evolve into legally binding agreements, as for example, with the transformation of various "agreed measures" emerging from the ATCMs, into binding requirements in the *Madrid Protocol*.

Indigenous people and the environment

One of the primary differences between the polar regions is the extent of resource activity in the Arctic, compared to the absence of resource extraction activities in the Antarctic. The Antarctic prohibition on resource activities, particularly mining, was made possible because no indigenous population exists which requires economic activity for support. The difficult balance between conservation and economic development was not an issue in the Antarctic. The absence of an indigenous population also limits the number of activities that require regulation. In contrast, in the Arctic, ongoing resource activities support the local and indigenous populations as well as the far away centres of power.

The special legal position of Arctic indigenous peoples also differentiates the two regions. Indigenous rights related to land and resource use and management present additional challenges and opportunities in the Arctic. The absence of a native population was a factor favouring the formation of the ATS. Decision-makers expressed the view that international administration was inherently suited to an area with no indigenous population.[180]

Prevention of Marine Pollution

The two polar regimes treat the global marine treaties quite differently.

The AEPS makes several references to LOSC and the need to apply its principles to protect the marine environment, while the *Madrid Protocol*, adopted in 1991, the same year as the AEPS, does not mention LOSC at all.

In the Antarctic regime, Annex IV to the *Madrid Protocol*, *Prevention of Marine Pollution* contains standards similar to those in the MARPOL Convention, and is specifically linked to

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[180] Davor Vidas, "Protecting the Polar Marine Environment: Interplay of Regulatory Frameworks" in. Davor Vidas, ed. *Protecting the Polar Marine Environment – Law and Policy for Pollution Prevention* (Cambridge: Cambridge University Press), 2000.

MARPOL. Conversely, in the Arctic, the AEPS does not refer to MARPOL by name at all, though it does refer to "a number of bilateral, regional and global arrangements which presently exist to deal with accidental pollution."

Of MARPOL's Annexes, the most detailed treatment of a source of pollutant is found in Annex I, prevention of pollution by oil. This annex absolutely prohibits discharges of oil in the certain designated "special areas," of which the Antarctic treaty area is one. The Arctic is not yet recognized as a special area and there is no movement to obtain the special area designation for any region in the Arctic.[181] However, the international regime of the LOSC allows domestic laws to impose stringent pollution controls, such as Canada's *Arctic Waters Pollution Prevention Act*.

Annex II, pollution from noxious liquid substances also prohibits discharges in special areas, again including the Antarctic treaty area, but not the Arctic.

As tourism increases in the north, discharge of sewage and garbage from vessels will be a growing problem. Since MARPOL's sewage annex, Annex IV, is not yet in force, this remains an environmental problem. Increasing volumes of garbage may also pose threats to the marine Arctic environment.

The Arctic marine environment is governed by the host of marine conventions, and the voluntary programs developed by various Working Groups of the Council, such as the Regional Programme of Action for the Control of Land-Based Pollution, the Emergency Guide, and the Offshore Oil and Gas Guidelines.

Atmosphere

The global atmosphere agreements have been influenced more by Arctic than Antarctic concerns and advocacy in recent years. Airborne pollution sources affecting the Arctic environment and the health of Arctic residents are being tackled at the global level through the global treaties, such as the *UNFCC, Vienna Convention* and *Montreal Protocol on Substances that Deplete the Ozone Layer*, the recently adopted *POPs Convention* and the regional controls of *LRTAP* and its *Protocols* two of which, the Heavy Metals and POPs Protocols, were specifically developed for the Arctic.

Mining

Always a controversial topic in the Antarctic, an entire treaty was drawn up to establish a regime for regulating mineral activities. This treaty never came into force. The prohibition on mining contained in the *Madrid Protocol* was only made possible in 1988 when key states refused to ratify this treaty, buoyed by strong opposition to the existence of any mineral activity on the continent from major environmental groups such as Greenpeace. In addition, exploitation of mineral resources may not be economically feasible.

In the Arctic, the environmental impacts of mining are also controversial. Mineral exploration and development are well advanced in at least three of the Arctic states: Canada, the United States and Russia. Mining is subject to the domestic legal regulatory regimes of each Arctic state. The effects of mining on the Arctic environment are not regulated at the global or regional level. As yet no proposals have been made to prohibit mining in the fragile Arctic environment, but there are increasingly frequent calls to more strictly regulate this activity and use the precautionary principle

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[181] Donald R. Rothwell, "Global Environmental Protection Instruments" in Davor Vidas, ed., *Protecting the Polar Marine Environment – Law and Policy for Pollution Prevention* (Cambridge: Cambridge University Press), 2000, 61.

to prevent repetition of past mining-caused environmental disasters.[182] Preservation of biodiversity requires stricter control of mining as well. Sharing of benefits from profitable resource extraction activities is another area where the legal regime could be improved.

One of the Arctic Council Working groups has proposed that the Arctic states "develop and adopt Arctic-wide environmental guidelines on opening, operating and closing mines in the Arctic coastal zone."[183]

Nuclear Activities – Radioactive Waste

Almost all military activities can have significant harmful environmental impacts.

As all military activities, nuclear explosions, and radioactive waste disposal have been prohibited in the Antarctic since 1961, there is no legacy of environmental damage from these activities.

In contrast, the Arctic remains a military and nuclear zone, with a history of contamination. Rather than concentrating on remediation and rehabilitation, Russia in particular appears to be on the verge of increasing nuclear risks, as evidenced by recent proposals to construct floating nuclear power plants, ship nuclear waste via an Arctic route, and accept vast new amounts of nuclear waste for storage and disposal.[184] There are 110 decommissioned Russian nuclear submarines moored in Arctic harbours, 70 of which contain spent fuel, and a threat from deficiencies in the entire spent fuel management process.[185] The Arctic Council is prohibited from dealing with military security by the terms of its founding Declaration, though AMAP has examined the environmental and human health impacts resulting from military activities.

Nuclear weapons are the major source of radionuclides in the Arctic region. Air concentrations have dropped since the cessation of bomb tests and consequently the body burden in people has decreased. Sources of future potential problems are: power plant and nuclear vessel accidents, dumped nuclear waste and primarily, accidents with nuclear weapons. The secrecy of these activities obscures their impacts.[186]

Waste Disposal

Hazardous waste import and disposal is another difference between the two regimes. In contrast to Antarctica, where the import of hazardous waste is prohibited by the *Basel Convention* and the disposal of waste for past and present work sites is subject to the strict provisions of Annex III of

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[182] For example, at the closed Giant gold mine, in NWT, Canada, two-hundred and sixty thousand metric tons of arsenic trioxide are buried underground, and clean-up plans are stalled: Gail Whiteman & Katy Mamen, *Community Consultation in Mining: A tool for Community Empowerment or for Public Relations?*, Cultural Survival Quarterly, 2000.

[183] Arctic Council, PAME, *Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-Based Activities*, 1999, HM R2.

[184] Thomas Nilsen, "Floating Nuclear Plants in the Siberian Arctic?" WWF Arctic Bulletin 4.00, 2000.;Giles Whittell, "Russia to accept nuclear waste – for $30 billion," Vancouver Sun, Dec. 22, 2000, A9c; Greenpeace, "New Polar Route Plans for Japanese Nuclear Shipments are Desperate Madness," January 22, 2001 at http://www.greenpeace.org/pressreleases/nuctrans2001jan22.html.

[185] AMAP Report on Issues of Concern: Updated Information on Human health, persistent organic Pollutants, Radioactivity, and Mercury in the Arctic, Sept. 2000.

[186] AMAP, SOAER, Radioactivity chapter.

the *Madrid Protocol*, the Arctic remains a dumping ground. Russia has made troubling proposals to boost its economy by importing massive volumes of this waste.

Environmental Assessment

The detailed scheme in place in the Antarctic ensures that strict standards are applied across the continent. The *Madrid Protocol* and Annex I impose stringent standards on the ATCPs for all activities having more than a minor or transitory impact. In the Arctic, domestic law governs environmental assessment, though the Arctic states are encouraged to follow the voluntary Arctic EIA Guidelines.

Biodiversity Protection

Designation of the Antarctic as a natural reserve protects the continent's biodiversity. In addition, Annex II to the *Madrid Protocol* creates a legal regime to conserve Antarctic flora and fauna. A "specially protected species" list is part of this Protocol, pursuant to Article 3 (4) and currently lists two species: the fur seal and the Ross seal. The Protocol also contains a provision preventing the introduction of alien species "onto land or ice shelves or into water," in Article 4.

Without a similar treaty framework, the Arctic has incomplete legal protection for biodiversity. Management is carried out on a species-by-species basis. Some individual species have comprehensive legal protection, such as polar bears. A myriad of Arctic species is not covered by a treaty or agreement. There is no Arctic parallel to the ecosystem approach of the Antarctic's CCAMLR, where the spectrum of predator-prey relationships and the entire food chain are essential components of wildlife management. There is no Arctic parallel to the prohibition on the introduction of alien species in the Antarctic.

The Arctic Council's activities in biodiversity protection have identified problem areas, such as the under-representation of marine and boreal forest areas in the protected areas network, but to-date, the CAFF Working Group's plans to address biodiversity conservation have not generated significant change.

Sustainable Use and Consumptive Use of Species

One particular issue promoted by some Arctic states relates to the need for sustainable use of marine mammal and other biological resources. The United States is adamantly opposed to this idea, while other states believe that it is an essential precondition to sustainable development in the North. Legally, this is another key distinction between the Arctic and Antarctic regimes: Article 3.1 of the *Madrid Protocol* prohibits the taking of flora and fauna without a permit. Sustainable use is legally permitted for aboriginal subsistence in the Arctic, subject to the various domestic legal regimes of the Arctic states. Consumptive use of species remains controversial in the Arctic, as some prominent campaigns show, such as the International Fund for Animal Welfare campaign against sealing, and Greenpeace and the WWF campaigns against whaling.

Protected Areas

All of Antarctica is to be maintained as a "natural reserve" according to the *Madrid Protocol*. The Antarctic has a complex system for area management, which consists of Specially Protected Areas, Sites of Special Scientific Interest, Marine Sites of Special Scientific Interest, Historic Sites and Monuments, Specially Reserved Areas, Multiple Use Planning Areas, and CEMP [CCAMLR Environmental Monitoring Programme] Sites.[187] Annex V to the *Madrid Protocol*, *Area*

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[187] John Heap, Editor, *Handbook of the Antarctic Treaty System*, 8th Edition, 1994, available on line at http://www.icair.iac.org.nz/Subfolder/treaty/handbook/forward_eighth.html.

Protection and Management, will simplify this management system, when it comes into force, by redesignating existing areas into two types of Antarctic Protected Area, Antarctic Specially Protected Areas (ASPAs) and Antarctic Specially Managed Areas (ASMAs). Access to ASPAs will requires a permit; access to ASMAs will not.

In the Arctic, states use domestic protected areas designations. The CAFF Working Group of the Arctic Council has complied information on these areas, and has conducted work to complete a Circumpolar Protected Areas network (CPAN). CAFF uses the IUCN protected areas system of classification. The eight Arctic states are urged to work towards a goal of protecting 12% of representative biogeoclimatic zones in their land and marine areas. To date, the number of marine protected areas lags far behind terrestrial areas.

3. Evolution of Two Legal Systems

Both legal systems have evolved. The Antarctic legal regime has evolved from a straightforward short treaty to a complex series of treaties, measures adopted under the treaties, and a new comprehensive *Protocol on Environmental Protection* over the space of forty years. There is reason to believe that the Arctic system will similarly evolve. As one Arctic expert has written, even ten years ago, no commentators would refer to the Arctic area as a region capable of having a legal regime.[188] Yet now, there is a coordinating body in place, the Arctic Council, neither an international organization nor a secretariat, which has taken over coordination of the AEPS and supplanted it with five Working Groups. Yet so far, the record has not produced tangible strides forward in environmental protection for the North.[189] Detailed plans of action are carried out by the Working Groups.

Regional governance in the Arctic world has developed rapidly since the Arctic Environmental Protection Strategy was signed in 1991. This Strategy is an example of soft law, a flexible agreement that is not legally binding, but may in future become so.

As the next chapter discusses, gaps in the international and regional agreements to protect the Arctic environment; the lack of comprehensive protection for this region compared to the equally remote, though uninhabited Antarctic region; and the need to incorporate principles of sustainability and innovative features recognizing the nature of society and economy in the Arctic all point to a need to develop an Arctic regional environmental protection agreement. The debate over the need for a new regional agreement has reached the stage where it is one of the chief subjects of discussion at a regional meeting.[190]

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[188] Young, Oran R., *The Structure of Arctic Cooperation: Solving Problems/Seizing Opportunities, **A paper prepared at the request of Finland in preparation for the fourth conference of Parliamentarians of the Arctic Region, Rovaniemi, 27-29 August 2000, and the Finnish chairmanship of the Arctic Council during the period 2000-2002.*

[189] VanderZwaag, David " International Commons – The Arctic" in *The Year in Review*, 1999, 10YbIEL 303-307.

[190] Young, Oran R., *The Structure of Arctic Cooperation: Solving Problems/Seizing Opportunities, **A paper prepared at the request of Finland in preparation for the fourth conference of Parliamentarians of the Arctic Region, Rovaniemi, 27-29 August 2000, and the Finnish chairmanship of the Arctic Council during the period 2000-2002.*

VI. Need for Regional Arctic Agreement on Environmental Protection

"The adoption of the Arctic Environmental Protection Strategy provides a useful opportunity to develop new legal arrangements and institutions to govern an ecosystem which transcends national boundaries and requires international cooperation for its adequate protection to be assured. The soft law approach it currently envisages provides a first step; ultimately it will be necessary to establish appropriate institutional arrangements and substantive rules, perhaps similar to those applied in the Antarctic, to ensure that agreed obligations are respected and enforced."[191]

1. Accelerating Arctic change

Change in the North is accelerating. From the diamond rush in the Canadian North to proposals for floating nuclear power plants in Russia's far North, economic activity is flourishing. The world's oil companies are vying to site at least one natural gas pipeline in the North, along either the Alaska Highway, or the Mackenzie valley route.[192] Climate change is melting ice and has produced year-round open waters in the Arctic Ocean for the first time in recorded history. Polar shipping routes and air routes are increasing. A host of new Arctic cooperation organizations are flourishing, from the Standing Committee of Parliamentarians from the Arctic Region, to the Northern Forum, to the Barents Euro-Arctic Council. Indigenous organizations have gained new power and prominence. Global non-governmental organizations, such as Greenpeace and the World Wildlife Fund, are increasing attention in the North.[193] National American organizations are also expanding programs in the North.[194] The UN family is also gaining more of a northern dimension, with UNEP's GRID-Arendal office as the regional focal point for Arctic environmental information within UNEP, and the Global Environment Facility financing projects in the Arctic ranging from an integrated ecosystem approach to conserve the largest wild reindeer population in Eurasia to a project considering the significance of aquatic food chains as pathways of exposure for indigenous peoples.[195]

2. How well is the Arctic legal regime protecting the environment?

The answer depends on which nation is studied. The environmental prognosis for the region is weak as long as individual Arctic nations continue to treat the environment as a low priority. Recent

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191 Philippe Sands, Principles of International Environmental Law (Manchester: Manchester University Press) 1995.

192 Proposals for the pipelines are reported in (2000) Enviroline, vol. 12:1, 3. The Mackenzie Valley route was rejected by the Canadian government in the late 1970s following the Berger inquiry, whose report *Northern Frontier, Northern Homeland*, 1977, comprehensively examined the issue of development in the North and its impact on indigenous peoples.

193 See the Greenpeace International website at www.greenpeace.org, and the WWF Arctic Programme site at http://www.ngo.grida.no/wwfap/.

194 For example, the Environmental Defense Fund has published a draft The Arctic at Risk: A Circumpolar Atlas of Environmental Concerns, Stephanie Pfirman *et al*, online at http://rainbow.ldeo.columbia.edu/edf/.

195 Financing Sustainable Development: GEF and the "Northern Dimension" Remarks by Mohamed T. El-Ashry Chief Executive Officer and Chairman Global Environment Facility, Rovaniemi, Finland, August 29, 2000.

examples of what many argue represent an apparent disregard of the environment include Russia's abolishment of its environment and forestry committees; the United States' refusal to ratify the *Kyoto Protocol* and the proposal to open up the Arctic National Wildlife Refuge to oil and gas drilling; and the limited progress Canada has made to clean up contaminated sites in its Arctic region. The federal government, one of the largest landholders in northern Canada, has identified some 2000 contaminated sites on federal land in the North. Of these 39% have been remediated or are being risk managed, 48% have been assessed and require no further action, 8% still require assessment and 5% require remediation or risk assessment.[196] The Canadian Commissioner of Environment and Sustainable Development estimates that federal funds needed for clean up of all contaminated sites in Canada, not just those in the North, may be in the order of $2 billion, an estimate which excludes the costs of dealing with radioactive waste.[197] No cost estimates are publicly available for clean up of Northern Canadian contaminated sites alone.

The answer also depends on which environmental issue is considered. As the preceding chapters demonstrated, there are numerous holes in the Arctic environmental legal regime when compared to the comprehensive regime in place in the Antarctic. PCB laden whale tissue, melting ice from greenhouse gases produced thousands of miles away, and declining populations of some charismatic polar species show that the environment is not yet adequately protected.

In general, pollution is more adequately addressed by binding legal agreements than biodiversity protection, both by the global agreements in place, and by the Arctic Council.

Pollution is the focus of the more successful Arctic Council Working Groups. AMAP's comprehensive State of the Arctic Environment report, followed up by its 2000 report on Arctic environment and human health addresses air, water and land-based pollutants. Other comprehensive plans are the Arctic Plan to eliminate all sources of pollution (ACAP) and the Regional Programme of Action to reduce land-based sources of marine pollution. Under the aegis of the Arctic Council, useful new guidelines have been produced: the Arctic EIA Guidelines, the Arctic Guide for Emergency Prevention, Preparedness and Response, and the Arctic Offshore Oil and Gas Guidelines. Targeted campaigns, such as the campaign to eliminate PCBs in the Russian Arctic are another successful programme of the Arctic Council.

Troubling pollution sources still remain untouched by the global and regional Arctic regime. The legacy of past contamination from military and nuclear activities remains, and has not been singled out for action by the global community or the regional harmonizing body. Military activities are specifically exempt from the Arctic Council's mandate, though the Council has sponsored some work to clean up PCBs from former military installations in Russia.

The legal regime is weaker when considering protection of species and spaces and the rich biodiversity of the still relatively untouched Arctic. The global legal regime to protect biodiversity is not as developed as the pollution regime. The *Convention on Biological Diversity,* a framework Convention, contains minimal concrete obligations for contracting parties. More issue-specific treaties, such as CITES, are useful adding another layer of protection for species at risk such as walrus and polar bears.[198] Conservation of sensitive wetland habitats, and world heritage sites, occurs through the *Ramsar* and *World Heritage Conventions*, though both these treaties could impose even stronger obligations on contracting parties and both could be more widely used in the

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196 Personal communication, Department of Indian and Northern Affairs.

197 1996 Report of the Auditor General of Canada, Chapter 22 – Main Points – Federal Contaminated Sites – Management Information on Environmental Costs and Liabilities; 1999 Report of the Commissioner of the Environment and Sustainable Development, (Government of Canada: Ottawa), available on line at http://www.oag-bvg.gc.ca.

198 Both these species have been listed in Appendices to CITES.

Arctic. And some individual species are well served by legal regimes designed for them. Commentators cite the *Polar Bear Agreement* as an example of a successful simple wildlife treaty, though recent analysis shows that some of the bears' critical habitat is unprotected.[199] Some herds of caribou are legally protected, such as the Porcupine Caribou Herd, through a bilateral United States-Canada agreement,[200] while the fate of others, such as the Bathurst Caribou Herd is uncertain due to unknown impacts of the Ekati diamond mine on the herd's migratory route and still others, such as Peary Caribou, are in serious decline.[201]

Unwillingness to address critical issues for Arctic biodiversity, such as the consumptive use of wild species, including trade in those species, means the Arctic Council has missed an opportunity to make a valuable contribution. The task of making progress in these key areas has been left to NGOs such as the World Wildlife Fund, which has prepared Guidelines for the Consumptive Use of Arctic Species.[202] Arctic biodiversity protection is one area where a regional legally binding agreement would be useful. Reconciling ecological sustainability and the consumptive use of species is a critical Arctic issue, and there are many other regional models to learn from around the world.

3. Regional Arctic environmental protection agreement

Various arguments have been made to consolidate the Arctic legal regime into one or more region wide agreements.

The initial Arctic Council proposal was accompanied by a draft framework treaty. The draft included "to promote the use of the Arctic Region for peaceful purposes" in the list of the purposes of the Council, mirroring the Antarctic treaty wording.[203]

Opinion is split on the need for a region wide treaty, though many conservation organizations, scientists, government representatives and academic experts favour a new Agreement. An example of an opinion opposing a new agreement is that continuing efforts to solve Arctic problems on a piecemeal basis would be crippled by a "grand but generally unrealistic vision of a comprehensive, region-wide governance system for the circumpolar world."[204] The other viewpoint is expressed by an expert who favours the adoption of an even stronger legal regime, encompassing not only the environment, but the entire sustainable development agenda, through adoption of an Arctic Treaty on Sustainable Development.[205]

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199 CAFF Habitat Conservation Report No. 5 – Gaps in Habitat Protection in the Circumpolar Arctic – A Preliminary Analysis, 1996..

200 Canada-US Agreement on the Porcupine Herd, 1987. This Agreement may be in jeopardy due to increased calls to start oil and gas drilling on the US portion of habitat.

201 Canadian Wildlife Service, Committee on the Status of Endangered Wildlife in Canada and Northwest Territories government: http://www.nwtwildlife.rwed.gov.nt.ca/Publications/speciesatriskweb/pearycaribou.htm.

202 WWF Arctic Programme: Wild Species Use, *Guidelines for Consumptive Use of Arctic Species*, at http://www.ngo.grida.no/wwfap/CCU/.

203 Donat Pharand, "Draft Arctic Treaty: An Arctic Region Council," reprinted in (1991) Northern Perspectives, vol. 19:2.

204 Oran Young, Young, Oran R. *The Structure of Arctic Cooperation: Solving Problems/Seizing Opportunities* **A paper prepared at the request of Finland in preparation for the fourth conference of Parliamentarians of the Arctic Region, Rovaniemi, 27-29 August 2000, and the Finnish chairmanship of the Arctic Council during the period 2000-2002, 15.

205 Sanjay Chaturvedi, *The Polar Regions*, 1996.

The form of an Arctic regional agreement has also been vigorously debated. A regional Arctic environmental protection agreement could not be similar to the *Madrid Protocol* in the Antarctic because the intent is not to make Arctic a nature reserve but to allow for sustainable use and development. However, a regional agreement similar to the *Biodiversity Convention* with its 3 themes: conservation, sustainable use and sharing of benefits, may be an appropriate model.

Proposals have been made to use:

- a single comprehensive environmental agreement addressing both land and vessel based pollution, contingency planning and biodiversity protection;
- a convention on Arctic land based sources of pollution;
- a broader sustainable development and environmental protection convention covering both marine and terrestrial areas;[206]
- a Protocol to other Conventions, i.e. an Arctic Protocol under the *Biodiversity Convention*; and
- an Arctic Ocean Regional Sea regime under the UNEP Regional Seas Programme. UNEP has taken preliminary steps to establish a Regional Action Plan for Protecting the Arctic Marine Environment with the eight Arctic states. An Action Plan may be more feasible than a full fledged agreement, and could stimulate activities by the Arctic states to more efficiently protect the environment.

This list of options is not exhaustive, and further work to identify the full range of legal options and the pros and cons of each option would be required to evaluate which course to pursue.

The main arguments in favour of and against a treaty are set out below. The arguments favouring a new legally binding treaty are convincing, considering the value of the Arctic, the serious nature of the environmental threats, and the lack of a comprehensive framework in which to address these threats.

3.1 Advantages of an Arctic environmental treaty

The main advantage of a treaty is the potential for increasing states' obligations to protect the environment through the elaboration of enforceable targets, timetables, and scheduled dues. A binding legal agreement could attract more serious attention from states. There is some concern that the Arctic states are paying less high-level attention to the work of the Arctic Council. At the most recent biennial Council meeting, only three Ministers represented their countries.[207] A binding treaty could also signal a higher level of political commitment towards this region.

A treaty incorporating assessed dues could overcome the problem of serious and chronic underfunding for the Council, and lend stability to the Council's work.

A treaty would raise the political profile of Arctic issues, and encourage the Arctic states to take the environment more seriously. A dedicated secretariat with personnel, offices, and a budget could advance the Arctic environmental protection agenda more readily than the current voluntary, rotating chairs of Arctic Council.

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[206] David VanderZwaag, "Land based marine pollution and the Arctic" in Davor Vidas, ed., *Protecting the Polar Marine Environment*, (Cambridge: Cambridge University Press), 2000.

[207] "Ministerial" with Only Three Ministers," WWF Arctic Bulletin, vol. 4, p. 4. (2000).

Provisions for financial and technological transfers are now missing from the Council's agenda. Adoption of this type of provision, common in modern environmental treaties, may induce compliance by those states that require assistance for clean up.

There is a need to consolidate the current huge range of dense issue specific arrangements, and add missing elements such as:

- dispute settlement options,
- benefit sharing,
- incorporation of the precautionary principle and other significant legal principles, and
- address conflicts and overlaps by including the principle of subsidiarity.

Legal experts debate whether the use of a binding treaty is necessary to achieve these advantages. All these goals could also potentially be achieved under the current soft law legal regime.

Much of the substance of a framework agreement is already in place. It would be relatively easily to formalize an Arctic Council agreement, enshrine the mandates of the five WGs, add innovative features designed to address the particular needs of the Arctic, and give the whole arrangement a sustainable development focus. The change from the AEPS to Arctic Council happened in a relatively short time frame. As the pace of change accelerates in the Arctic, converting the Arctic Council agreement into a more comprehensive treaty may be warranted. The precautionary principle may be incorporated into a new treaty to ensure that one of the last of earth's great wilderness areas remains intact.

3.2 Disadvantages of an Arctic environmental protection treaty

The main argument against a new treaty is that the current soft law arrangement is relatively new and it is too early to evaluate whether it needs to be supplemented by an enforceable treaty.

Arctic states may be unlikely to want to invest time and energy into a treaty at this stage. The WGs are carrying out detailed plans of action implemented nationally (e.g. AMAP and national contaminant programs). Some argue that a treaty would not add much, as the action plans that would be set in place under a treaty are already established. There is also the risk of "treaty congestion" and "treaty fatigue" due to the rapidly expanding number of global environmental and other treaties.

Soft law can be useful in an area without a long history of international cooperation, like the Arctic. Soft law requires neither formal procedures of ratification, nor the passage of domestic implementing legislation. Both these processes can take time, and may be difficult to achieve due to political constraints. Treaty making may involve serious constitutional or legislative barriers. Negotiating soft law instruments will usually be quicker, and provisions in these agreements take effect immediately.[208]

Treaties may produce weaker commitments than a soft law regime. Because agreements are not legally binding, states may be more willing to include substantive commitments, and reach

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[208] Alexandre Kiss, "Commentary and Conclusions" in Dinah Shelton, ed. *Commitment and Compliance*, 2000, 239.

agreement quicker in a soft law regime. Governments may also be more willing to take innovative approaches when the end result will not be legally binding. States are more likely to include loopholes in legally binding agreements to limit their exposure to new or expanded commitments.[209] Other arguments against development of a treaty at this time include:

- The time and expense of formal treaty negotiations could act as a barrier to continuation of soft law development;
- A formal new organization, such as a treaty secretariat, could be expensive to operate;
- A comprehensive regime can be difficult to obtain support for, and consequently difficult to implement. The best example of this phenomenon is LOSC, which took eleven years to from negotiation to coming into force, and is still not implemented worldwide; and
- Also, many international treaties are already taking the special needs of the Arctic into account such as the POPs treaty. Pursuing Arctic specific goals in existing global regimes may be faster, less expensive, and more effective for the environment.

3.3 Potential Subjects for a new Agreement

There are a number of serious environmental issues discussed in this report for which there are no existing legal rules. A new agreement should include principles, substantive legal obligations, and innovative features.

Principles

A regional agreement could give legal force to the sustainable development principles articulated in the Sustainable Development Framework to guide the work of the Council and all its associated bodies. These principles could draw on work done by many others, such as from indigenous organizations.[210]

The principles could also be drawn from well-established principles of international environmental law, such as:

- the precautionary principle,
- the principle of intergenerational equity,
- the polluter pays principle, and
- the obligation not to cause environmental harm.

The precautionary principle, in particular, has not yet been incorporated into the Arctic legal regime. Instead, Ministers have chosen to wait and act only if the voluntary actions undertaken by the various Working Groups do *not* work, the opposite of the precautionary approach, e.g. a

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[209] Young, Oran R. The Structure of Arctic Cooperation: Solving Problems/Seizing Opportunities, **A paper prepared at the request of Finland in preparation for the fourth conference of Parliamentarians of the Arctic Region, Rovaniemi, 27-29 August 2000, and the Finnish chairmanship of the Arctic Council during the period 2000-2002, 18.

[210] Inuit Circumpolar Conference, *Towards an Inuit Regional Conservation Strategy*, 1996; *Agenda 21 from an Inuit Perspective*.

statement by the Inuvik Ministerial Conference of March 1996 "…should implementation of various proposed actions not occur, or should they prove inadequate to address emerging problems, then reconsideration of further legally binding instruments should be pursued." [211]

Additional innovative legal principles for the Arctic region could include:

- subsistence preference, which gives subsistence users preference for living resources when there are not enough stocks to satisfy the demands of commercial, recreational and subsistence users; and

- co-management, which recognizes the right of user groups and indigenous communities to participate in decision-making regarding living resources.[212]

Each of these principles is relevant to Arctic environmental protection, and none of these principles is present in the current regime. A new regional agreement could ensure that innovative arrangements working well in one or more Arctic states could be adopted for the entire region.

Substantive Obligations

In addition to incorporating key principles, the topics that could be covered by an Arctic sustainability agreement include building on the successes of the ATS, and the adoption of rules similar to those found in the Annexes to the *Madrid Protocol*:

1. Annex I, *Environmental Impact Assessment*; The voluntary rules used in the Arctic could be converted to a legally binding agreement.

2. Annex II, *Conservation of Antarctic Fauna and Flora*; The Arctic sorely needs a comprehensive plan and rules to conserve its unique and globally valued biological diversity.

3. Annex III, *Waste Disposal and Waste Management*; Building on these stringent rules, new Arctic rules could be developed to promote clean technologies and pollution prevention recognizing the fragility of the Arctic environment.

4. Annex IV, *Prevention of Marine Pollution*; This Annex contains standards similar to those in the MARPOL Convention, and is specifically linked to MARPOL.

5. In addition, Annex V, *Area Protection and Management*, to consolidate the different protected area designations used by the Arctic states and to design common rules for access and management.

Other potential topics where substantive obligations would be useful include:

- Sustainable use and consumptive use of Arctic species, such as seals, whales, polar bears and walrus.

- Conversion of the voluntary rules for offshore oil and gas development, environmental impact assessment and polar navigation into binding requirements.

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[211] See discussion in Davor Vidas, "The polar marine environment in regional cooperation" in Davor Vidas, ed., *Protecting the Polar Marine Environment* (Cambridge: Cambridge University Press), 2000, 89-92.

[212] Testimony of Oran Young to SCFAIT, Canada and the Circumpolar World, chap. 5, p.2.

- Harmonization of environmental standards in the Arctic region through regional rules to regulate land-based pollution; vessel-source pollution; mining and the protection of biological diversity.[213]

- Tourism is a subject that could be addressed by a regional agreement. More than one million tourists visit the Arctic annually.[214] Wilderness travel, ecotourism, and cruise ships, among other forms of tourism are growth industries and bring people to previously untouched wilderness areas. Regulation of this industry is limited. Voluntary guidelines have predominated to date with little discernible impact. In the Antarctic, tourism activities are subject to the strict planning controls that apply to all activities having a more than minor or transitory impact. Stringent waste disposal standards also apply in the Antarctic to tourism and other operations. An Arctic accord could include provisions to control the environmental impact of tourism, incorporating WWF's guidelines for sustainable tourism in the Arctic.[215]

4. Innovative Features for a new Treaty or Regional Agreement

The Arctic has become a hotbed of innovative approaches to governance. A new agreement or treaty should incorporate the innovations that have been adopted to date; and should seek to use new innovate approaches

The Arctic Council is one of the first regional governance bodies devoted to environmental protection and sustainable development.[216]

Unlike the Antarctic, whose legal regime developed to stall territorial claims, halt militarization and preserve a pristine environment for scientific research, the Arctic's nascent structure includes the development needs of people and is not an attempt to replicate the "nature reserve" at the South Pole. With the addition of the Working Group on Sustainable Development, the Council's focus has shifted to encompass sustainable development.

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213 Oran Young, "Emerging Priorities for Sustainable Development in the Circumpolar North" Background paper for Circumpolar Conference on Sustainable Development in the Arctic, 1998, available online at http: www.dartmouth.edu/~arctic/articles/whitehorse.html.

214 GEO-2000, *Global Environment Outlook*, (UNEP: Nairobi), 2000.

215 WWF, *Linking Tourism and Conservation in the Arctic, 1997*, online at http://www.ngo.grida.no/wwfap/publications/.

216 Another example is the 1972 *Great Lakes Water Quality Agreement* (GLWQA) between Canada and the United States. The original Agreement specified objectives to reduce the discharge of substances toxic to human, animal or aquatic life. Subsequent amendments incorporated the ecosystem approach, and committed the two governments to the virtual elimination of persistent toxic substances. The Agreement now sets goals for non-point contaminant sources, contaminated sediment, airborne toxic substances, and contaminated groundwater. The International Joint Commission (IJC) monitors and evaluates the progress of this Agreement. Though the Agreement has worked to reduce pollution in some areas, levels of persistent toxic substances remain unacceptably high; exotic species continue to have severe impacts on indigenous species and expanding populations and changes in land use due to urbanization and other development processes continue to impact sensitive tributary and nearshore habitats. From the website of the Great Lakes Water Quality Agreement at http://www.on.ec.gc.ca/glwqa/intro.html.

4.1 Indigenous Participation

Representatives of indigenous organizations have formal representation on the Arctic Council as Permanent Participants, akin to state status. This recognition of the rights of indigenous peoples to participate in regional governance has few parallels in international society.[217] It may be a crack in the iceberg of interstate relations, recognizing the legitimate role of non-state actors and civil society representatives in decision-making structures. A regional agreement could formalize this participation.

A regional agreement could build on the special role afforded to indigenous groups as Permanent Participants in Arctic Council, could recognize co-management and TEK, and provide a platform for institutionalizing and standardizing impact and benefit sharing agreements. Recognition that biological diversity is highest in areas of cultural/linguistic diversity is another environmental reason for enshrining special status for indigenous peoples in an Arctic regional agreement.[218] The right of traditional peoples to development options that are culturally determined and not imposed from outside, and that incorporate customary, sustainable resource use could be a key component of a regional agreement.

4.2 Co-management

Co-management is well developed in the Arctic region, in part due to indigenous land, resource and participation rights. Co-management is a term used to describe shared decision-making in the planning and administration of natural resources. Many co-management resource management structures in the Arctic consist of a combination of government and indigenous representatives. Comprehensive land claims settlement agreements in Canada have led to many co-management arrangements and new joint decision making bodies. Examples such as the *Mackenzie Valley Resource Management Act* in Canada, a federal law which provides direct indigenous participation in resource management, planning, regulatory approvals and review and monitoring provide a good base for examining how co-management works in practice.[219] Other examples are found in the US where organizations such as the Alaskan Eskimo Whaling Commission, Alaska Eskimo Walrus Commission and Association of Native Village Council Presidents jointly develop regulations for wildlife management.

Although devolution of regulatory powers through a co-management regime will remain a subject for domestic law, a regional agreement could encourage more widespread use of this legal tool.

4.3 Traditional Ecological Knowledge (TEK)

An expanded role for TEK is also a possible topic for inclusion in a regional environmental agreement. Different Arctic states already incorporate this type of knowledge in their environmental assessment and monitoring regimes, and the Arctic EIA Guidelines also refer to the desirability

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[217] The Arctic Council agreement is careful to note that the use of the word "peoples" does not connote any claim for self-determination.

[218] WWF, *Indigenous and Traditional Peoples of the World and Ecoregion Conservation: An Integrated Approach to Conserving the World's Biological and Cultural Diversity*, 2000, online at www.panda.org.

[219] See discussion in Alex Ker, *The Legal Regulatory and Policy Framework for Non-renewable Resource Development in the Northwest Territories*, (Ottawa: National Round Table on the Environment and the Economy), 2000.

of including this type of knowledge. Numerous reports, workshops and seminars have explored the topic.[220] A comparison of how well the Arctic states are integrating TEK into their environmental procedures and whether a standardized approach would be helpful is another potential area for exploration in a regional agreement.

One area known particularly for its mining potential is the West Kitikmeot/Slave area of the Northwest Territories. The area is home to a population which includes Inuit, Dene and Metis aboriginal peoples, who depend upon the natural resources of the area. There is insufficient information and data on the area in terms of development potential, environmental quality, wildlife populations, and critical habitats. Consequently possible cumulative effects of development in the area are poorly understood. The West Kitikmeot/Slave Study was initiated to provide an information base to support sound resource management decisions and to examine the short-term and long-term effects of development.

A unique feature of the West Kitikmeot/Slave Study Society is that it is a partnership of aboriginal and environmental organizations, government and industry. These partners joined together as a society in late 1995 to make sure the effects of development on the environment, wildlife and people of the West Kitikmeot/Slave Study (WKSS) area are minimal and that northern people get a share of the benefits that may come from development. Traditional knowledge and scientific knowledge are placed on equal footing, as providing keys to sustainable development. Grizzly bear, water quality and community health final reports have been posted to the WKSS Internet website as the study continues through its final year.

Perhaps the most innovative of the Study components is the Traditional Ecological Knowledge Research in the Kache Kue study region. This project is focusing on learning about the ecology of the study region from the traditional knowledge of Chipewyan elders. Key species, habitat, and the effects of development are the main areas of focus, with the goal that indicators of ecosystem health can be developed. Researchers work with the elders to understand the meaning of their stories, and document them in written form with maps. Information collected includes traditional land use, significant cultural/spiritual sites and Chipewyan terminology.[221]

4.4 Impact Benefit Agreements

The use of impact and benefit agreements is another innovative feature in some Arctic states. Standardization of this requirement could go a long way to achieving sustainable development in the Arctic region. Allowing some resource development to proceed in areas that are less ecologically sensitive than others, with the full involvement of affected residents of the region and complete legally enforcable agreements for mitigating harmful impacts and sharing benefits would be a step beyond traditional environmental impact assessment towards a sustainable future.

Impact and Benefit Agreements (IBAs) have become a powerful tool for securing local economic benefits in parts of the Arctic. Negotiated directly between a developer or project proponent and an indigenous group or local association, these agreements may cover cash payments, revenue sharing, training obligations, local employment targets, cross-cultural training, protection of cultural values, social and cultural impacts monitoring and mitigation, and environmental provisions, such as reclamation procedures, research obligations, incorporation of tradi-

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[220] See the compendium of examples included in Burgess, Philip *Traditional Knowledge*, A Report Prepared for the Indigenous peoples' Secretariat, 1999, available online at http://www.arcticpeoples.org/knowl.htm.

[221] WKSS reports are available on the WKSS website (www.wkss.nt.ca).

tional ecological knowledge, and environmental impacts monitoring and obligations. IBAs may be voluntary, or legally required by domestic statutes,[222] acquisition of tenures or operating licences or permits,[223] or in recognition of indigenous land claim rights.[224]

Though common in some Arctic countries, IBAs are not universally used. The sparse research data indicates indespread use in Canada, some use in Russia, and little, if any, use of this legal tool in the European Arctic regions. IBAs are gaining more prominence and important issues related to their negotiation have surfaced. Confidentiality and non-disclosure requirements in IBAs, which pit aboriginal communities against one another and forestall open communication about common terms, are a concern. Other concerns include the uncertain relationship of IBAs to public regulatory processes, enforcement and the need for a legal or constitutional basis to ensure that IBAs are part of the normal regulation of larger projects.[225]

The impacts of resource development on Arctic communities and particularly on indigenous peoples have been largely negative. Cultural breakdown, environmental damage, and on-going health problems are common legacies across the North. IBAs represent a potential for change, especially if a requirement to negotiate these agreements is institutionalized, to prevent the serious deficiencies resulting from the current piecemeal project-by-project, community-by-community approach. Many questions surrounding IBAs need resolution, such as whether bilateral agreements between local people and industry produce fair arrangements that ensure appropriate benefits for local people; the role of government; and the potential need for a legislated framework to ensure fairness, consistency and clarity.[226]

This issue also deserves further attention from a global and a regional Arctic perspective. Should resource companies be required to enter into IBAs with local communities wherever they operate? What special requirements should operate in indigenous communities? Is there a need for guidelines, or a legally binding agreement to institutionalize the already commonly used benefit sharing arrangements that some multinationals now voluntarily adopt? What role can international law play in this regard?

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222 In Canada, oil and gas legislation applicable in the North requires the negotiation of "benefits plans," e.g. *Canada Oil and Gas Operations Act*, R.S. 1985, c. O-7, s. 5.2, but mining legislation does not contain similar requirements.

223 For the BHP Ekati diamond mine in Canada's Northwest Territories, completion of IBAs became a condition of obtaining final regulatory approvals from the federal government. In particular, a water licence was held up until IBAs were negotiated in a short conditional time period imposed by the regulators: Alex Kerr, *Impact and Benefits Agreements as Instruments for Aboriginal Participation in Non-Renewable Resource Development*, (Ottawa: NRTEE), 2000, 18.

224 For example, the Inuvialuit Final Agreement requires that "participation" agreements be negotiated where the use of the surface is more than casual or temporary, Janet Keeping, "The Legal and Constitutional Basis for Benefits Agreements: A Summary," vol. 25.4, Northern Perspectives, Fall-Winter 1999-2000. In Alaska, USA, land claim settlements have also required significant financial transfers to indigenous groups, though those have been payments from the federal government, rather than transfers from corporations.

225 Kevin O'Reilly, "Impacts and Benefit Agreements: Tools for Sustainable Development?," vol. 25.4, Northern Perspectives, Fall-Winter 1999-2000.

226 Janet Keeping, "The Legal and Constitutional Basis for Benefits Agreements: A Summary," vol. 25.4, Northern Perspectives, Fall-Winter 1999-2000.

4.5 Indigenous Knowledge and Intellectual property Rights

One of the three themes of the *Convention on Biological Diversity* is access and benefit sharing. The Secretariat of the Convention has convened experts' meetings on this topic to explore how access and benefit sharing can be used to conserve biological diversity.[227]

A large part of the focus of these meetings has been on the use of intellectual property rights as a vehicle for encouraging biodiversity conservation. Intellectual property rights can be one way that the economic sharing of benefits arising from biodiversity conservation can occur. Article 8(j) of the Biodiversity Convention is the link to indigenous peoples on this issue. It states that: Each Contracting Party shall, as far as possible and as appropriate, (j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.

Case studies relating to intellectual property rights, indigenous peoples and the protection of biodiversity in Canada have been compiled, with several examples form the Arctic: the Igloolik floe-edge boat and arctic char fish farming.[228] More work on this topic may be appropriate for an Arctic regional environmental protection agreement.

5. Conclusion

There are many potential topics for a regional Arctic agreement to protect the environment and promote sustainability. The Antarctic has a well-developed regime and forty years of experience to draw upon when designing an invigorated Arctic regime. Innovative features to meet the unique needs of Arctic residents are also proliferating, and should be incorporated into a strengthened legal regime. A treaty could play a valuable role in promoting Arctic sustainability. Whether or not a legally binding treaty is negotiated soon, the Arctic Council should move to promote and strengthen the innovative features that are already part of the Arctic regime, and continue to work to preserve the unique features of the Arctic region.

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[227] Report of the Panel of Experts on Access and Benefit-sharing on the work of its first meeting (UNEP/CBD/COP/5/8) 1999, available online at http://www.biodiv.org/benefitsharing/html/abs-pe-2-home.html.

[228] Howard Mann, *Indigenous Peoples and the Use of Intellectual Property Rights in Canada: Case Studies*, 1997, prepared for Industry Canada and the Canadian Working Group on Art. 8(j) of the Biodiversity Convention.

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