

Circumpolar Arctic Consultation

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The **Liu Centre for the Study of Global Issues** and
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(DFAIT)

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Summary Report

1. The Arctic consultation was attended by a diverse group of participants including physical scientists, social scientists, practitioners and government. Three speakers introduced the agenda for discussion. The Hon. Lloyd Axworthy (LIU Centre) framed the day's discussion by giving a history of his involvement in circumpolar issues and DFAIT initiatives while he was Minister. He challenged participants to "fill out the framework" of the Northern Dimension of Canada's Foreign Policy (NDFP) to address emerging issues reinforcing that the NDFP was purposely constructed to be flexible in addressing new issues. ACX/Simon gave an overview of Arctic Council structures and the need for its work to be relevant to the constituents it serves - making science relevant to policy makers and northerners so that informed decisions can be taken. Dr. Hadi Dowlatabadi (UBC) provided a snapshot of rapid environmental change affecting people using the example of small island states and the Arctic Council's SLICA (Survey of Living Conditions in the Arctic) study highlighting that the environmental problems faced are largely imported from other parts of the world.
2. A keynote lecture (reproduced here in full) was presented by Dr. Robert Williamson (Arctic Institute of North America).
3. Prepared contributions by Dr. Peter Johnson (Canadian Polar Commission), Dr. Frank Griffiths (University of Toronto) and Dr. Karen Erickson (University of Alaska Fairbanks) offered a variety of topics for discussion, impressing on the need to increase funding and political commitment to northern issues, to helping develop a more empowered Arctic Council, strengthening Canadian participation in developing Arctic policies, encouraging the establishment of an Arctic Parliament, developing a highly expert arctic research network, and what many said was a pressing need - to engage southerners citing the issue of sovereignty and security in the north, particularly the NW passage. A further suggestion was that the federal government should declare Canada a "Northern Nation" and to prepare appropriate policy responses to that declaration.
4. Scientific information was provided by Mr. Wayne Lumsden (Canadian Ice Service), Dr. Grant Ingram (UBC), Dr. Laurie Chan (Mc Gill University and recent recipient of one of the six Northern Research Chairs) and Dr. Stewart Cohen (Env. Cda) on climate change in the arctic, ice cover changes and impacts of contaminants in northern traditional foods. These presentations were a necessary contribution to addressing the objective of human security in the circumpolar region from a physical sciences standpoint.
5. Dr. Jamie Smith from the Policy Research Secretariat (PCO) indicated that he will encourage an Arctic focus at the annual policy research conference to be held in early 2003. Over 1000 policy makers and practitioners have attended previous conferences. In addition, the secretariat is in early planning for a northern workshop to be held in

Whitehorse, Yukon that will address among many other themes, human security in the Arctic and circumpolar issues.

6. Recommendations as outlined in the summary of this report were offered as conclusions.

Introduction - Olav Slaymaker, Academic Director, Liu Centre for the Study of Global Issues

The primary objective is to address the need for enhancement of human security in the circumpolar region under circumstances of rapid environmental change.

The Liu Centre acknowledges the grant from the Department of Foreign Affairs and International Trade, which made this consultation possible.

The consultation touched upon the four overarching objectives, as developed in the 'Northern Dimension of Canada's Foreign Policy' and endorsed by DFAIT.

Four objectives:

1. To enhance the security and prosperity of Canadians, especially northerners and Aboriginal peoples;
2. To assert and ensure the preservation of Canada's sovereignty in the North;
3. To establish the Circumpolar region as a vibrant geopolitical entity integrated into a rules-based international system; and,
4. To promote the human security of northerners and the sustainable development of the Arctic.

Within these objectives, the following three priorities are central to this consultation.

1. Support for the work of the Arctic Council;
2. Realizing the full potential of the University of the Arctic and, enhancing a Canadian and circumpolar policy research network; and,
3. Promoting sustainable development through the pursuit of economic and trade opportunities across the circumpolar region.

The three priorities fall within the mandate of the Liu Centre, which is:

1. To create a new template for policy development in the area of environmental policy and human security.
2. To challenge the assumption that scientific research in the area of human impacts on environment should be separated from an analysis of their consequences and interaction with human security issues.
3. To provide insight into environmental security problems through collaboration among scholars in the humanities, social sciences, and natural sciences.

Keynote Lecture for Consultation on Present Circumpolar Issues
CIRCUMPOLAR GOVERNANCE

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Arctic Institute of North America
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Slightly less than fifty years ago, when I was first in the Arctic, the thought of the Circumpolar Region as a major forum and potential fulcrum for various forms of national and international governance would have been widely considered a preposterous notion. In those days contact beyond our area habitat was once a year by the annual supply ship, and occasionally through the odd trader amateur radio. Aviation was virtually never called upon. The indigenous people were uninvolved in Canada. Now, in 2002, we may increasingly find a number of informed and responsible people, gathered together to discuss precisely that very question of circumpolar governance.

This paper is a beginning of analysis and development of judgmental dynamics in response to Circumpolar environmental change. Interest here is in attitudinal persistence, adaptation, and the significance of socio-cultural reorganization related to contemporary climatic developments. Problems to be dealt with include the implications of persisting and accelerating climatic change for a people heavily committed to known regions for which they have great respect, and which provide identity, psychological, physical and metaphysical sustenance.

Recent decades have radically changed Inuit attitudes toward nation-state concepts, and having then experienced national manipulations of their political being, the Inuit now need to anticipate further identity changes. The Arctic Ocean will go through metamorphosis from a remote ice-bound barrier-region to a possible major seaway for global mercantile shipping. For the key socio-political unit of the Arctic at the mobile micro-social level, family considerations may undergo profound life-way changes with many attitudinal adjustments. Nation-states concerned with sovereignty issues will perhaps call forth national identity assertions contrapunctally at a time when broader but otherwise unquestionable indigenous circumpolar cultural identity may seem more important.

Changes to language, values, and social organization and self-determination strategies will complicate family and community life and Arctic politics. The Inuit have become remarkably skilled politically and by no means as manipulable as in the past. Nation-states will depend on them heavily and their demonstrated skill in public relations and administration will place them in increasingly significant situations. The paper concludes with a list of suggestions in which the Inuit may participate with the nation-states in securing the trans-Arctic seaway predicted for future decades, and in the process working around the sovereignty issues.

I suggest that socio-cultural change substantially resulting from migration to quasi-urbanized settlements, tends to skew, disfunctionalize or re-define the roles of both women and men. All of this may strain values and relationships. On the other hand, the acculturation factors can be discerned more clearly in rapid and extensive life-way change situations, than in circumstances of gradual change. This impels people to articulate their perceptions more graphically, and evokes more specific and organized resistive or adaptive reactions, to achieve cultural preservation, and advance self-determination. We have seen in the Arctic considerable organizational growth specifically dedicated to cultural reinforcement. Many cultural preservation groups have become politicized effectively.

Attitudes in acculturation situations are susceptible to change. Over my lifetime in the Arctic, I have seen the authority and advice of the elderly during the early days of rapid-change urbanization -- ignored and pushed aside, only to be recalled half a generation later and treated with considerable respect. Meanwhile some of the “young Turk” leaders of past decades have aged and themselves become elders and valuable bridge-people between generations, seeing the opportunities of some modernization in the future, all of the while drawing on the known and respected ethical tenets of the previous generation.

Inuit and Nuna Relationship

So far in contemporary discourse on Arctic society we have been attempting to define a few concepts whereby we can understand the processes of attitude and value change in response to the environmental changes happening in the Arctic, in the last two or three decades most notably. We have recognized that the relationship between the Inuit and nuna (the habitat) is much more than purely technical and economic. The physical and metaphysical relationship with the habitat is enabled by the complex naming system which links human souls with the companionate souls of the living creatures upon which they depend and with which they share the habitat. It should be noted that the name-soul combination is the conceptual social instrumentation for this people-nuna relationship. The Inuktitut language has been rich in symbology entrenching the sense of integration of the individual soul with Sila, the cosmic soul, linked by the naming system to the habitat. Though all of this is today not always articulated in these terms - these integrated metaphysical notions have been the cultural foundation in the achievement of land settlements, which reflect beliefs and values affecting attitudes toward the habitat and to whatever would threaten this relationship.

Over the last fifty years, the Canadian Inuit have moved from a situation wherein their sense of participation in a nation-state was minimal or entirely lacking - to a vital role in the Canadian governance. This present structure with its traditionalistic supportive values and use of the language in which the values are entrenched - is likely to become a vital factor in the resolution of sovereignty issues when they emerge more crucially as the ice recedes and Northwest Passage becomes feasible. In contrast to southern attitudes, Inuit value a companionate relationship with the Arctic environment and dislike or fear the imposition of all forms of alien power on their habitat. Equally, as northern pragmatists they have come to use modern imported transport and shelter technology as

unintrusively as possible, while still valuing memories or stories of dog-team, qajaq and snow-house life. Common attitudes about current warming trends are curiosity, an outgrowth of the classical Inuktitut value for intelligence, apprehension about alienating environmental changes caused by bizarre climate shifts, and the normal Inuktitut idea of conservation of nervous energy by not draining oneself emotionally about something about which nothing can be done, a notion best summed up by the common Inuktitut usage - “ajunnammammat.” The highly unfamiliar and menacing changes now happening are inducing a previously unexpressed feeling of vulnerability.

Many observers and analysts have concluded that with its minimal official presence in the Arctic, the federal government of Canada will have serious difficulty in upholding its claims to sovereignty in the areas of the sea-lanes linking the waters of the North Atlantic with the Orient. In this situation the significance of the presence in the Arctic of our anciently indigenous population is very great. The Arctic is their home and the foundation of their identity and will remain so. In slightly more than a generation-and-a-half the Inuit of Canada have passed from an absence of mind concerning southern Canada, which exceeded even that of southern Canadian reference to the existence of the Arctic and its denizens.

Inuit and Sovereignty

Today we are impelled to think with increasing urgency about the Arctic as a region where indigenous people have anciently been at home and will go on being permanently resident. The Inuit explored and settled the Arctic over 5,000 years ago, and their claim to a primary voice in modern governance is not to be challenged. They are a people still guided by traditional values maximizing intelligence, habitat-relatedness, family loyalty, sharing of goods, means for self-sufficiency, information and personal feelings. They feel strongly about respect for souls of people and creatures they depend upon. They favor governance and law-giving consensus. They use these principles legislatively, and avoid the time-loss and dignity-damaging maneuvers of other chambers by having no party politics. The autonomy of the individual is respected. Women, who like men, are the bearers of non-gendered souls, are valued in terms of intellect and their influence on governance is very substantial. In the last two-or-more decades, women have held many of the top governing and representational positions in the circumpolar world, and, as Christian missionary influence declines, continue increasingly to do so.

The Polar Sea is more than the World's Longest Short-cut. It is a place for policy-making of very extensive global significance. It is now a place of huge logistic and strategic importance. It is a place of world trade importance; industrial importance, and its environmental dynamics are of great importance to the planet.

Canada, as a major Polar nation, has a profound responsibility in the development of that Arctic policy-making. Of course, the long-indigenous Inuit must be vitally involved in all aspects of Arctic future development.

Recent History

Naturally, the Inuit did not see their habitat as a “way through” to anywhere else. They were where they wanted to be. The habitat was their centre; and mythically the farthest north place was the navel of the world, as the Greenlanders say. There was no hierarchical group structure, no “chieftainship.” The basic social unit was the family, with advisory influence residing in the elders. People lived in small changeable hunting bands, and had a clear sense of belonging in their dialectal group. Kinship is important, but there is no “tribal” structuring.

It is only in the last 400 odd years that people ventured north from Europe, seeking the Northwest Passage as a short cut to the riches of Cathay. For example, in the latter part of the 17th century Martin Frobisher, an English privateer, prospector and adventurer, got as far as a long fjord on southern Baffin Island, looking for the Northwest Passage and is believed in local legend to have been turned back by defending Inuit. Frobisher ran, and presented to a quick-eyed Inuk archer a perfect target as he rolled over the side of the boat in retreat. ¹ It was presumably not for this feat of arms, but for distinguished blood-letting during the defeat of the Spanish Armada by English ships and British weather, that this hero business-man was knighted and his name imposed upon the modern maps of land long-before named by the people whom territory this had been for millennia.

Of political significance to this day is the metaphysical importance of named places and the names themselves, linked as they are with the persisting souls of people. Thus anciently named places stand as abiding and sanctified metaphors for their family history.

Other Europeans, including roving Norsemen, Basque and Dutch whalers had been into Baffin Bay earlier than the English and many more came later. The whalers in the 19th century spread all over the Arctic, and in the latter phases of their exploitation, took to wintering with their Inuit helpers. Through the increasingly symbiotic relationship with the southern ships' companies, the Inuit learned about social stratification and hierarchical power. They also learned that power held far away can affect lives in remote places. The fur trade later institutionalized this pattern, which I call ‘exteriorization’. Throughout the 19th century the more obviously strategic probing of ships of the Royal Navy added to the traffic. Some were looking for the Northwest Passage, glory and promotion, and, quite often, each other. But though they were birds of passage they were responsible for the first “political” marks on the Arctic, inserting their own geographical names on their maps, ignorant of prolific names long-established by the indigenous people. The nouveau-arrives visitors used place-names from their own country, or the names of their aristocratic sponsors, their relatives and, inevitably, their monarchy. Less political, but more insulting, they sometimes left nugatory indications of their lack of knowledge and imagination in the form of blank areas labeled terra incognita or terra nullia. This colonialistic toponymy, along with flag planting, went on until quite recently, when, in 1975, the Danish Minister for Greenland, Tom Hoyem, thrust the pole of the Dannebrog into Hans Island, a small patch of gravel between Greenland and Northern Ellesmere Island. As his final colonial fling before his department was disbanded, the gesture did not stay the determination of the Greenlanders and the

establishment of Greenlandic Hjemmestyre (Home Rule), formalized by the Danish parliament in 1979.

Logistics and Modern Politicalization

Remote warfare had already politicized Greenland when, after the invasion of Denmark by Germany near the beginning of World War II, the governor of South Greenland negotiated a controlled American military presence on the Greenlandic coast, paying off the cost fully with the cryolite ore mined at Igviut and used for aircraft alloys by the allies. North and South Greenland each had an Advisory Council made up of appointed Greenlanders. Both declared support for the Danish Crown when the Nazis invaded Denmark. Meanwhile, in April 1942, western Arctic shores received belligerent attention from the Japanese forces. They invaded the Aleutian Islands, strategically attractive American territorial possessions, thus galvanizing the Americans into frenzied activity in the construction of the military bases along the coast of Alaska. They also jerry-built the Canol pipeline from Norman Wells toward a planned terminal in Alaska, (though not even a pint of oil was ever delivered through it). The long-term effect of these experiences was a significant increase in the worldliness of the Alaskans.

Inuit men who were recruited into the American military saw much of the world, and observed living standards, political practices and human rights discernibly better than experienced in their home territory. This later engendered politically heightened expectations as to their governance and living standards when they got home to Alaska. But the bulk of the USA in the “southern 48” continued to see Alaska and indeed most of Canada as virtually empty hinterland, until, in the middle of the Cold War, the Soviet Union also was believed to be perceiving the cross-Arctic route as the Big Short-cut. In 1953, fearing the advent of Soviet bombers fleets coming over to North America by the Polar route, the Americans undertook the largest, fastest and most far-extended construction work ever done in the Arctic.

From western Alaska to the Greenland icecap, flying in to ice airstrips an estimated total of 25,000 southern workers and hundreds of thousands of tons of materials and equipment, the Americans built a line of radar stations designed to detect approaching Soviet bombers short-cutting over the Pole to mainland USA. As they went along, they also built weather-reporting facilities and airstrips on the land, so that the people manning the radar sights could be often and regularly supplied with fresh foods, mail and the latest movies. The bombing-raider detection technology was obsolescent before the line was finished, though it did occasionally brilliantly detect passing flocks of geese. But the Distant Early Warning Line did very extensively change the life-ways of the northern people. The frontier of aviation was moved from south of the tree-line to north of the Arctic Circle. This made it possible for larger passenger and freight-bearing aircraft to come into the Arctic and enabled the government to initiate quasi-urbanization processes across the whole north. These developed various forms of macro-social organization, which ultimately and rather haphazardly formed a complex of modernized “political”, structures within the constitution of Canada. Inuit in the pathway of the DEW Line, and others brought in from distant areas - were employed and paid increasingly high rates as their skills, reliability and industrial-life adaptability increased. Urbanized habits,

consumption patterns and aspirations were acquired. So too was the ability to work with and deal with the volatile people from the south. In a very short time, in the late 'fifties and 'sixties, the tiny Arctic fur trade posts became places to which the Inuit were encouraged to move, to help with government service building and housing construction, and to avail themselves of the medical facilities and schooling which the Canadian government was gradually developing.

Macro-social Organizational Adaptivity

There has been much criticism in Canada of the federal government's operations in the Arctic in the earlier years after the creation of the Department of Northern Affairs in 1953, a remarkably amateur, often heavy-handed, but usually well-meaning northern administration. But one of several good accomplishments, and one that had founding significance for progress towards self-governance in the Arctic was the DNA initiative of Co-operative development. In the process of community Co-operative organization, the people learned the techniques of modern macro-social organization and successfully put them to use when Territorial moves toward the establishment of Local Government were initiated. These organizational skills were also applied to the politically significant Hunter and Trapper Associations, regional education and health boards, and very significantly, later, to the formation of national Inuit representational bodies. It was the publicly effective work of these para-political bodies, which influenced the general Canadian public, and won their support in the creation of various modes of governance in the north.

So when the people of the eastern and central Arctic were finally enfranchised, first to elect one Member of Parliament in 1964 and in 1966 able to vote for representation by three new members of the NWT Legislature, a people who not long before had no electoral system - and no need of one - became increasingly successful politically. Thus we find ourselves with a structurally variant but workable governance situation across the Arctic. There is the Makkivik Corporation in Nunavik and Quebec, and the indigenous corporate structures of Alaska and the Inuvialuit of the western Arctic. There is the "sovereignty association" style of Home Rule (Hjemmestyre/ Namminersornerulerneq) parliamentary government and Danish-style administration in Greenland. All of these geo-political units of the Inuit world have attempted to design their processes of governance to be sensitive to their distinctive cultural values and practices. Nunavut is the most recent one and the most discernibly Inuktitut in style, with procedures favoring the use of the Inuktitut language in both legislative and administrative activity. (Nunavut was promulgated as a distinctive, quasi-provincial, territorially self-governing geo-political unit, still evolving governmentally, in April, 1999). Like post-colonial Greenland, Nunavut still conducts much of its bureaucratic business in the language of the original administration, but Inuktitut is declared to be the official language and its greater use an abiding objective.

Inuit are also increasingly and impressively heard in the legislatures of the north, with Greenland and Nunavut leading the way, in the use of the indigenous language. For more than a decade, Canadian Inuit have been operating television networks and are mainly responsible for radio broadcasting at both the local and regional levels. Everywhere in

the Arctic they are increasingly taking entrepreneurial initiatives. The Inuvialuit own oil, gas and mineral exploration companies, and, presided over by a powerful Inuk woman - they are expressing themselves strongly in favor of such matters as pipeline development and expansion of the hydro-carbon industries generally. The Inuit own and operate airlines, construction companies and retail businesses, with the Inuit making an art of subsidization until self-sufficiency is achieved. Of course they learned the art from the corporate world. All of this has happened over slightly more than the last forty years, or in the space of less than one generation. Meanwhile, gradually, but with increasing momentum, the climate and the whole physical environment has been changing, radically and with growing pace.

Climate and People: Some Power Variables

In parts of the Arctic west, continuous and discontinuous permafrost have been subsiding, riverbanks crumbling and water levels changing. Hunters and trappers are expressing more vocally and with knowledgeable detail - growing concern about this contemporary climate change, particularly over the last decade. The passionate attachment to the Inuit habitat is still strongly felt and expressed in many ways, from the laments of modern indigenous singers to the fiscal and electorally-motivated concerns set forth by politicians. Many urbanized Inuit still feel the need to spend some camping time away from the settlements, and were deeply dismayed by the loss of financial wherewithal to equip and outfit themselves as a result of the virtual destruction of the seal- skin market by the ill-informed or sometimes falsified protest activities of organizations like Greenpeace and its more shrill extremist offspring. This experience has however stimulated and politicized people who previously were not engaged in public affairs.

Power is now a concept well-understood by Inuit in terms other than the remote-controlled colonial domination exerted over them in earlier eras by fur-traders, missionaries and police. Through three decades of reasoning and non-confrontational use of intellectual power, the Inuit have negotiated their way to substantial financial compensation, to land-control, industrial activity control, resource-product royalty and income-sharing, veto power over 'development' where the habitat is threatened, the right to undertake their own 'development' initiatives, and permanent seats on virtually all power-holding boards. Their present capital investment capacity and financial power is now formidable.

The foregoing is a shamefully-abridged account of some aspects of the organizational acculturation that the Inuit have undergone since the middle 'fifties, when the generalized framework of experience in modern governance was mainly initiated, but it may be enough to cause us to ask where we now stand in the circumpolar world.

The modern towns and villages of the Arctic present a mixed social situation. Unemployment is high, hunting has been seriously curtailed as the result of Animal Rights extremists' activity, drinking and drug-use incidence is problematical, and youth suicide rates are twice that of the average among the provinces. But the communities are working on these problems, and as self-determination progresses, improvements in all problem areas is discernable. Schooling is increasingly carrying students to higher

grades, post-secondary education enrollments are growing, indigenous entrepreneurial initiatives are proliferating, and extractive industry activity is occurring more widely, both in the Shield regions and in sedimentary areas.

Some people in the Arctic feel despairing about their present life and future prospects, and act out their despair tragically. Others are impressed by what has been achieved in so short a time, and express optimism. Some simply try to trudge on from day to day or season to season, 'hoping for the best', but worried about what is happening around them. This is the population that, still growing more rapidly than most other segments of the larger southern society - will be in place in the Arctic and facing the problems that seem likely to arise with the sequelae of climate change. The recession of the sea-ice is seen as a serious threat to the fauna and flora and micro-biota of the Arctic, and in addition to the pollution derived from the various industrial sources of the hemisphere.

Already the Arctic Ocean is a huge sump of toxins and pollutants carried from industries and nuclear power plants into the Polar region by upper atmospheric winds and the great, (mainly Siberian), rivers which travel into the northern waters, whose currents then circulate them around the vast bowl of the Polar Sea.

We do not yet have any precise idea about when the ice will be sufficiently diminished as to allow passage of mercantile shipping through the polar seaways, a route linking by distances seven thousand kilometers shorter than by way of Panama, the huge markets of Europe and Asia. Most people do anticipate that, realizing how much can be saved by the shorter distance - the volume of shipping and the pressure thus created will be enormous. It is to be anticipated that however stalwart Canada may be in defending its sovereignty in the Arctic, international pressures will find some way to enable other-nation sea-faring through the Arctic Archipelago.

National and International Administration Implications: Power and the Passages

Even though the ice may be much diminished, the stormy and foggy and rapidly-changeable Arctic weather, and the movement of the 3m-thick old ice from the central polar sea area to possibly plug the straits and sea lanes between the Arctic islands - will still make the region more-than-usually navigationally hazardous. Winds of higher velocity are to be expected, and wave amplitudes greater, especially in ocean areas with extensive fetch. There will still be brash ice and some thicker pans. More ice-berg calving is to be expected, and mainly-submerged growler-ice will still be a hazard to shipping. It will still dark for long hours in the winter. It will still be cold, and in winter strong winds and heavy seas will cause deck, hull and superstructure icing, threatening stability. Demands on fuel supply will be greater. Navigation in the Arctic waters will always require higher standards of seamanship, and Canadian crews and their vessels will be expected to set standards. Special training planning and facilities will have to be initiated. Much hydrographic work still remains to be done. Charts need to be up-dated, satellite-delivered vectors will need up-dating, localized present-weather reporting will be desired. Navigation generally is still a cause of concern. Monitoring of vessels in passage will be vital, from allowed hull strengths to engine and steering reliability, as well as radar, sonar and other movement-safety devices. Cargos will need surveillance, and vessel inspection

and interdiction procedures internationally agreed upon. Coast Guard and other security measures will need the force of international law.

This highly complex situation is clearly one that requires international forethought and collaboration. There is profound and justifiable concern about future pollution and its circular movement around the polar sea. Local weather reporting, search and rescue activities, inspection of ship condition, design, cargo and seasonal sailings will be among the monitoring and safety functions necessary. Much thought and research will be necessary to make feasible effective governance and administration of the polar sea region. Should this be, as seems obvious to many Canadians, a purely Canadian responsibility? Should this be a joint task for Canada, the USA and Greenland? Or should this all be altogether the responsibility of an expanded and considerably more-empowered Arctic Council?

Something like the Arctic Council is certainly needed, but, without doubt, it needs to be something with greater powers and functionally more effective. This is where extensive research may be a considerable help. Here are a few examples of questions that should be asked:

1. What can we learn from the experience of the U.N. agencies and about sea-passage through national waters?
2. What can be learned from other regional blocs and international communities in the world, with shared geography, trade and security interests?
3. How will we plan, fund and co-ordinate much-needed biological, oceanographic and climate research? They too will be applicable to a wide-range of human-oriented research; and, also to inquiries into the findings of international law. Greater public concern is needed to strengthen the political confidence of Canada in involving itself in the Arctic Council or whatever grows from it.
4. We will need to learn as a nation how to be more politically assertive in encouraging others in concern for the Arctic (and the Arctic Council), especially in dealing effectively with our closest and most powerful neighbors.
5. Evaluation of channels of communication will need to be done thoroughly. Computers have made possible the operation of the new widespread administrations of the Canadian north, but they have yet to show how the human element using them can improve upon their use.
6. There is a need for evaluation of a variety of other modes of communication e.g. through diplomacy, through the channels of industry, the indigenous organizations, and the networks of scholarly research.
7. We will need to investigate various models of governance, and evaluate them for appropriateness in devising our own circumpolar nation structures.
8. Following these evaluations, we can then develop plans, make agreements and conclude treaties, having identified and avoided the pitfalls noted during our evaluations and having built on the proven strengths.
9. It will be necessary to study, for example, the Inuit Circumpolar Conference, the Nordic Council, the Pan-Saami organizations, the Siberian culture-identified State

- governments, Greenland, the Alaska state government and the corporate models which grew out of the land settlement agreements.
10. We will have to learn from the lessons of Greenland's twenty years of experience of post-colonial Home Rule.
 11. We will need to look for guidance from the Indigenous Peoples Secretariat of the Arctic Council.
 12. What can we learn from the United Nations in terms of political procedures?
 13. We will have to evaluate the post-colonial patterns, linkages, problems and positive aspects of relationships between old colonial powers and new indigenously-weighted political units.
 14. Is there anything we can learn from the European Union?
 15. Would it be possible to accumulate sufficient funds from the operation of the N.W.P. sea-lanes to improve the financial situation of the Arctic Council?
 16. What is the possibility of legislating royalty gains from industrial development as sources of funding for the Arctic Council's part in regional governance?
 17. Is it possible to arrive at a significantly larger and realistic financial plan for a much-more-developed Arctic Council?
 18. Is there any virtue in the idea of a permanent base and administrative headquarters for the Arctic Council instead of the present practice of rotation? This should be evaluated in terms of cost saving and consistent administration while learning from the bureaucratic mistakes of the United Nations.
 19. Perhaps such a headquarters could be located in a non-dominant country like Iceland, Denmark, Finland, Sweden, Norway or a Canadian provincial setting, e.g. St. John's, Newfoundland or Halifax.
 20. As part of the research evaluation of the European Union in terms of its relationship with and relevance to the circumpolar world, is there any value in a study of the European Parliament, the Inuit Circumpolar Conference and a model of a possible Circumpolar Parliament? Certainly the members of the Arctic Council have more in common than many of the European Parliament do with each other. Is that a useful comparative model, or would it be an unhelpful exercise in comparing apples and oranges? Should the idea of a Circumpolar Parliament be considered as a way of providing genuine grassroots representation and guidance to the international Arctic administration?

Inuit Ancestry and Capacities as a Binding Force

When all of the evaluations are done, the Arctic Council nations might seek to appoint very high-level international leadership to create a super-national form of governance, using the framework of the Arctic Council but further ensuring its greater authority and legality. Would it be more effective than the Strasbourg model? Is that one of the areas of experience in recent European history from which we can learn, and can we be sure that it would effectively involve the indigenous people at all levels? Can we learn from ICC - knowing that, diverse organizationally as the circumpolar nations are, the feeling of commonality of the Arctic region's people thus may become politically powerful in their own mega-region? Indeed the fact of shared cosmology, values, cognition, tundra and taiga life, sea-borne life, habitat commitment and language affinities, physical similarity of the people, and their strong support for their sense of ancient common identity - are

more binding than any grouping of highly-heterogeneous and less compatible Europeans. Earlier successes achieved by Inuit para-political organizations argue that their influence may be much greater than their population numbers might suggest, and thus, as I believe, the people of Inuit ancestry may prove to be the functional cement that the Arctic Council needs. This certainly should be an organizational objective of the Arctic Council's planners and enablers.

21. Is it possible to create and make effective use of a highly expert Arctic Dynamics Predictive Panel, made up of indigenous people and senior circumpolar scientists and, too, drawing upon Arctic expertise from government experts and from the southern fringe of the Arctic world, like France, Germany and the U.K. and given overall philosophical, holistic and integrative oversight and guidance by one, two or three renowned intellects? Should the predictive group's deliberations be stimulated philosophically by two or three of the most sophisticated intellects in the world? Could they develop sufficient integrated insight and overall vision as to influence impellingly the policy-makers and political authorities of the Circumpolar community?

Finally, it will be necessary to ask how it will be possible to keep the populations south of the Arctic fully informed, more involved much more interested in and indeed proud of their Arctic regions, and supportive of their national, regional and international forms of governance. For Canada, it should be a serious political objective to emphasize the significance of the country as a major Polar nation. There should be a senior Federal Department of Polar Affairs, high in Cabinet ranking, and headed by leading politicians. Schooling throughout all grades should inform and integrate students into Polar-nation consciousness. Popular news, feature program and information services in all media should be encouraged, to emphasize our Polar character. All government departments, and most business, (particularly those enjoying government subsidies) should be strongly encouraged to make much more of our national Arctic identity. Inuit may well play a valuable part in this, not only in government and business representation at high levels, but in the arts, going beyond sculpture and print promotional, which has indeed done great good for Canada and the Inuit - but also in music, dance, literature, film production and drama.

Indigenous Affinities and Potentials in the Arctic

Let it also be remembered again - that, spread around more than a third of the Polar littoral - are people speaking or inheriting the cognition and world view of one generic language family. They also share a common cosmic and global perspective, value system, and respect for intellect and sharing of habitat. They are dialectally distinctively varied - but they recognize a common basic language-family heritage, and the bonds of shared values are exceptionally strong. This gives them a sense of group strength significantly greater than their populations. At home over such a huge extent of the northern range of the world - this endows them with remarkable potential and public-feeling power. Whatever we dream of in terms of northern structures of governance, shared functions, and even disagreements and incongruities - the Inuit are not to be discounted in the politicized councils of the northern hemisphere - indeed they are a rare force for

international shared strengths. It would be wise to maximize the abiding strengths of the Inuit. They will stay.

Ambassador Mary Simon, Ambassador for Circumpolar Affairs. Environment? Security, Circumpolar Issues

As most of you here know, Canada's foreign policy initiative in this area - The Canadian Dimension of Canada's Foreign Policy - was pursued by Mr. Axworthy during his former tenure as Minister of Foreign Affairs. As Ambassador for Circumpolar Affairs, I had the responsibility of overseeing its development and the honour of hosting the June 2000 launching ceremony.

Permit me a moment to review the origins of this new policy initiative and its objectives....

In 1996 parliamentarians from the Arctic States recommended the adoption of national policies and international arrangements that would broaden Arctic security issues from the predominantly military focus to the development of collective environmental security that includes the values, life styles and cultural identity of Indigenous northern societies. This new agenda for security cooperation, they continued, is inextricably linked to the aims of environmentally sustainable human development. Meeting these challenges is essential to the long-term foundation of assuring circumpolar security, with priority being given to the well being of Arctic peoples and to safeguarding northern habitats. (From: "Canada and the Circumpolar World").

This broader concept of human security - one that entails respect for cultural diversity and implies enhancement of the political, economic, and social values that are essential to Canadians was carried over into the development of the Northern Dimension of Canada's Foreign Policy.

In its introduction, the policy reinforces the importance of Canada's long-standing foreign policy tradition of international cooperation and institution building in an increasingly interdependent and globalized world. It also takes on, as a new guiding theme, the protection and enhancement of human security. The policy has four overarching objectives, namely:

- Enhancing the security and prosperity of Canadians, especially northerners and Aboriginal peoples;
- Asserting and ensuring the preservation of Canada's sovereignty in the North;
- Establishing the Circumpolar region as a vibrant geopolitical entity integrated into a rules-based international system; and
- Promoting the human security of northerners and the sustainable development of the Arctic.

Achieving these objectives will require domestic, regional and international action. The past ten years has seen an unprecedented process of multilateral cooperation and

institution building in the circumpolar region, designed to foster international cooperation. There now exists a real potential for creating synergies around a northern agenda. Ensuring that human security, environmental integrity and good governance are mutually reinforcing objectives is our common challenge.

In the face of the range of environmental threats, many of which are transboundary in nature, clearly the future security of the Arctic region is closely linked with our ability to manage complex northern issues.

That is precisely why Canada continues its active support for the Arctic Council as the body best placed to identify and promote circumpolar cooperation in a variety of areas. The Arctic Council, a unique forum in which the eight Arctic States and Indigenous northern peoples as Permanent Participants come together to discuss and decide on matters of common interest. It is, therefore, well placed to address the environmental challenges faced in the circumpolar region and the active participation of Indigenous peoples ensures that the work does not lose sight of the human dimension.

The five main working groups of the Council collectively implement an agenda that focuses on sustainable development and environmental protection. The working groups are: The Arctic Monitoring and Assessment Program (AMAP) to assess and monitor the Arctic environment; the Conservation of Arctic Flora and Fauna (CAFF) to conserve biodiversity of Arctic flora and fauna; the Emergency Prevention, Preparedness and Response Group (EPPR) to prepare and work collectively in times of emergencies; the Protection of the Marine Environment Program (PAME) to co-ordinate the regional plan for the Arctic oceans; and the Sustainable Development Working Group (SDWG) to develop projects in areas of human development such as tourism, telemedicine and children and youth. These groups report on the state of the Arctic environment and give scientific advice to Ministers of the eight Arctic States.

It is accepted by the Arctic Council that sound knowledge is an essential foundation for the integrated decision-making that will be necessary for the Arctic where the sensitive environment and societal vulnerabilities are insufficiently understood. Funding the necessary partnerships and scientific research, building human and financial capacity, incorporating traditional knowledge and finding better ways to manage jurisdictional complexities are necessary ingredients for progress.

In "Agenda 2003" the Sustainable Development Strategy for the Department of Foreign Affairs and International Trade, human security, the relationship between trade and the environment, the North and effective advocacy in international fora are now clearly part of our goals over the next years.

Consistent with our sustainable development strategy, we are working to bring an "Arctic Voice" to the 2002 World Summit on Sustainable Development in Johannesburg. As some of you may recall, despite efforts by the Inuit Circumpolar Conference, and others, the Arctic did not receive any specific attention as a region. Now, ten years later, the Arctic is clearly a region of focus when matters related to environment and development

are discussed. Transboundary pollutants, loss of biodiversity and climate change are of deep concern in the Arctic and gaining acceptance as an indicator of the world's environmental health.

It is also important to remind ourselves that Canada's north is again attracting the attention of other national interests. Its vast oil and gas reserves, along with those in neighbouring Alaska, are being heavily factored into a domestic North American continental energy policy. In February 2001, the Canadian Centre for Foreign Policy Development conducted a Round Table on our northern foreign policy in Whitehorse. Participants raised concerns surrounding the challenges of finding a balance between sometimes competing interests and accounting for the effect of increased energy production on the environment and the lives of northern peoples.

Meeting the pressing economic needs of northern communities, especially those of Indigenous peoples, while respecting sustainability principles, including environmental protection, human health and respect for cultural diversity will continue to challenge northerners, governments and industry.

Arctic residents, including Indigenous peoples, are far better equipped now than in the past, to participate forcefully and constructively in national, regional and global political and economic decision-making. Over the past ten years, many positive changes have occurred in both the policy and legal relationships between Arctic Indigenous peoples and government, creating a more equitable basis for the productive partnerships that will continue to emerge. Our collective responsibility is to continue building on these accomplishments and new directions.

Peter Johnson, University of Ottawa - Canadian Arctic Sovereignty, Linkages with Changes in the Arctic Ocean Environment, and in Governance

The three themes selected for this consultation have a number of cross cutting aspects and I would like to address of the issues that need to be considered in view of regional, national and international discussions. My remarks, presented in my capacity as Chair of the Canadian Polar Commission, are based on my experience as the Vice-Chair of the Commission for the last three years, as the President of the Association of Canadian Universities of Northern Studies from 1997 to 2001, as a member of the Council of the University of the Arctic from 1997 to 2001, as a founding member of the Steering Committee of the Northern Research Forum, and as a Vice-President of the International Arctic Science Committee.

The issue of Canadian sovereignty in the Arctic is fundamental to these discussions. Sovereignty brings with it many obligations ranging from stewardship and supporting residential populations, to fulfilling international obligations within the circum-arctic world. Sovereignty is a multifaceted issue. It is not just legal recognition of control over a physical component of the globe but it also has implicit and explicit requirements. The possibility of a challenge to aspects of Canadian sovereignty has never been greater as the probable effects of climate change make the region more and more economically accessible. In the past security has been the main driver of Canadian Arctic sovereignty discussions. During the Cold War North American defense concerns made us look north and put resources into northern science and technology. With the end of the cold war and the advent of new forms of governance in the North the federal commitment to science and scholarship in the North has withered. Once recognized as a strong northern focused nation we now find ourselves the target of open international criticism for our lack of national commitment to the North. Perhaps part of the reason lies in the fact that while we are aware of being a northern nation most of us have very little appreciation of “The North” or of “The Arctic”. Communication and education must, therefore, be part of sovereignty.

Many people in the federal public service will disagree with these comments, pointing to the new governments in the Yukon, NWT, and Nunavut and the regional government in Nunavut and to the support given the processes of devolution. But how sustainable are these governance arrangements and how sustainable are the economics? The Yukon economy is in very poor shape, there are major problems to overcome in Nunavut, and the NWT is just coming to terms with the land claims arrangements and the pressures for economic development.

So let me raise some aspects of sovereignty and the Arctic Ocean.

Jurisdictional Sovereignty

- The Inuit and the Gwich'in have a concept of homeland and territory, which does not differentiate land from water. Terrestrial and marine resources have been the basis of their culture and economy and although they are very likely to embrace many aspects of the global economy such as mining mineral resources, developing

commercial fisheries, etc., they will always have a relationship with their territory which is based on different values from the 'western' society. How is this to be built into international consideration of jurisdiction over the Arctic, or is to be considered at all? In addition, there is the question of ensuring equitable sharing of revenues and opportunities from land and ocean based renewable and non-renewable resources. A component of this is the necessity to ensure that the products of the cultures are acceptable in world markets.

- Apart from some satellite coverage Canada has failed to maintain surveillance capacity in the Arctic. At the "On Thinning Ice" conference the military indicated they had 2 over-flights per year, the Coast Guard Search and Rescue capacity in the south with long response times even if aging equipment operates flawlessly. Environmental clean-up expertise and equipment needs to be developed and would take a long time to deploy. Maintaining sovereignty means maintaining a capacity for surveillance and response, which requires investment and commitment (money and equipment), and the development of both human and technological capacity in the North. Technology to deal with air crashes, fuel leaks, and cruise ship running around, for example. Human capacity needs to be developed in the North to lead these roles.
- In order to ensure communications necessary for any sovereignty concerns the North in general and the Arctic in particular must have equal connectivity as the south. There must be a 'state of the art' communication satellite network in the circumpolar region and northern populations should not have to point satellite dishes at the southern horizon to access some signals. At present connectivity in the North is patchy, varying from less than adequate to good, but is still falling behind the advances in the south. The dialogue dividing is widening. To implement e-governance, e-learning, e-medicine, etc., the technology must be first class, dependable, and have suitable backup. The federal government has made many statements in the Innovation Strategy and in the broadband initiative that must be backed up with action for the North.

Intellectual Sovereignty

- Sovereignty implies an obligation to pursue research in one's own territory. The research may be conducted by scholars from the communities or from the universities and governments and may involve partnerships but it needs adequate resources. Whether it is for stewardship, for economic development, for social and cultural integrity, there is always some requirement regionally, nationally, or internationally for scientific information and technology development.
- I maintain that these obligations also require mechanisms for establishing Science and Technology priorities, mechanisms which involve all interests and mechanisms which provide resources for addressing the most pressing issues. The mechanisms must involve true horizontality in government, including open discussion with the pertinent communities in the North, and with the universities, allowing true

partnerships to develop. The mechanisms must also involve a proactive logistics structure supported over the long-term and covering all of the Arctic.

- At present, Canada is failing to provide basic data from the Arctic, which is required by the international community (meteorological data for example), and is failing to conduct fundamental research, which is required for example, to fully assess the implications of climate change for the Arctic Ocean. There is also the question of the human resources necessary for intellectual sovereignty. It may sound rather trite but in order to pursue science in the Arctic we need scientists. The problems of the federal government science and technology workforce in general are fairly well known and as well as internal committees at the senior official level the Council of Science and Technology Advisors (CSTA) is in the process of preparing a report. The problem of the northern S&T workforce within that overall unit has not been commented on but it appears to be in a more precarious position. Only two or three universities offer any really comprehensive program in Arctic issues. Most universities have only a very small northern research community of professors and this is reflected in how few Canada Research Chairs have been awarded to northern expertise. The Northern Research Chair program here at least provided some northern focus but there is no guarantee that the full program can be implemented.

Monitoring for International Requirements

- Every nation has an obligation to international monitoring networks. In the Canadian Arctic and in the North in general monitoring networks have shrunk to the point of being inadequate in some cases. The CSTA identified Related Scientific Activities (RSA's) as being part of the mandate of some government departments but this aspect of mandates is not being adequately maintained. Territorial government monitoring programs have been reduced along with federal programs. In that last issue of the environmental report on the Yukon a comparison was made between the diminished hydrological monitoring commentary on the low priority of monitoring at all levels of government. The international community has complained about the reduction in monitoring in the Canadian Arctic. Monitoring is required to support our international treaty obligations, to lay the groundwork for regulation and protection, and to underpin issues relating to safety such as climate forecasting.

Frank Griffiths, University of Toronto - Circumpolar Governance

The central issue is how to galvanize Canadian public interest. Perhaps by specifying a 30-year time frame. How big is the potential mobilization of the sovereignty issue in Canada's south?

Southerners are fickle and cannot be counted on. Information flow can maintain interest.

The prevailing discourse on sovereignty suggests boundaries and divisions - this is not useful

The effects of shipping and pollution on fishing grounds impact the Inuit - not southern Canadians.

We should plan for the transfer of sovereignty to the Inuit in 2032. Nunavut might tackle the sovereignty issue. Some social values need to be re-imagined and elevated in importance, specifically, civility, love of life and love of diversity. Civility is a value that is prior to security.

Informal ethnic cleansing should be a source of shame, as should the activities of those who break civil norms by imposing e.g., POPs on Northern Canadians.

There is a disconnect between North and South. Bring the Arctic Council home - Indigenous people should form an intergovernmental Council with indigenous people physically present.

Transfer the Arctic Council experience to other international bodies and make it a leader in global governance.

Karen Erickson, University of Alaska, Fairbanks - Arctic Council as Expression of Human Security

We need to explore global change as a tool of analysis.

1. As a normative tool - is realism adequate?
 - (a) Planetary deficit
 - (b) Needs of the next generation
 - (c) Science objectives towards improving the human condition

Gradual change provokes no action; but in the north, climate change is crossing a threshold.

- a. Planetary deficit. Net degradation of the planet is not well understood. More scientifically literate northerners are needed. What exactly do northerners need to know about danger signals? What is the urgency? What are the key questions? Where are the thresholds?
 - b. Needs of the next generation. How can the well-being of northerners be improved?
 - c. Science objectives towards improving the human condition. Two examples were quoted:
 - (i) Global Science Policy (e.g., Amsterdam 2001)
 - (ii) Climate Change Policy
2. As a cognitive tool
What kind of change do we need to understand to assure sustainability? There needs to be a sea change in the magnitude of insecurity. Globalization of ecological destruction leads to new sense of insecurity. Interdependence required, is this a threat to sovereignty?
 3. Present state of the Arctic Council
What is the nature of circumpolar threats? Suggestions for restructuring of Arctic Council.

Wayne Lumsden - Canadian Ice Service, Environment Canada

There has been a 40% reduction of ice in 30 years (1% per year)

But one anomalous observation is that ice thickness at Resolute Bay has increased (4%)

Grant Ingram, Professor of Earth and Ocean Sciences and Principal, St. John's College, University of British Columbia

Numerous examples of collaborative research studies in the Canadian Arctic were illustrated to show the reality of scientific collaboration in the Arctic.

Canadian Arctic Shelf Exchange Study was emphasized because of its importance to Inuit residents

Laurie Chan, Professor of Toxicology, Northern Research Chair, McGill University

Contaminants in traditional diets

Risks and Benefits

Risks	Traditional	Benefits
Contaminants	Food	Nutrition Taste Health
Socio-cultural benefits		Social and cultural Ecological
Risk management and nutrition education		Children's education

**Stewart Cohen, Environment Canada and Institute for Resources and Environment,
University of British Columbia**

Northern Climate Exchange: strong northern message on effects of climate change

Poleward displacement of boreal forest by 150 - 450 kilometres is anticipated

Change in risk leads to a need for integration of traditional knowledge and science

Importance of direct participation of Arctic people and institutions.

Jamie Smith, Policy Research Secretariat, Ottawa

Examples of policy initiatives that enhance human security can be found at

www.policyresearch.gc.ca <<http://www.policyresearch.gc.ca>>

Robert Kadas

The Arctic Council and the University of the Arctic are model institutions to enhance human security in the circumpolar region. Seven indicators of progress are:

1. Northern Workshop: Whitehorse, September 19 - 21, 2002
2. Contribution to northern policy research conference 'Risk, Security, Governance and Transportation Science'
3. Arctic Science at World Summit on Sustainable Development
4. Enhance the Arctic Council
5. Liu Centre as a brokerage firm to bring various sectors together
6. Bring the Arctic Council home
7. Bring all relevant aspects of understanding of the North together:
Philosophy/ethics - social science - natural science leading to a holistic northern policy

Geoff Dabelko, Woodrow Wilson Centre - Institutional Issues

A. Environmental Security/Absence of Conflict/Sustainable Peace

Environment as the driver - Russia, Norway and US collaborative clean up of the Barents Sea

Peru/Ecuador border conflicts

Transboundary river basins: Nile Basin is problematic

B. Quality of Life/Human Security/Saving Lives

Macro and micro-nutrients & Health - productivity impacts

Water & poverty

Environment & security in UN system

C. Environmental Institutions - military to obey EPA
Regulation - (rollback by Bush)
Radioactive waste can be resolved by traditional institutions

Focus on poverty does not guarantee environmental security
How do we get the environment higher on the agenda.

Warren Mabee and Evan Fraser (Research Associates, Liu Centre for the Study of Global Issues)

Tools for analysis of environmental impacts

1. Typology
Can we research the human impacts of environmental change?
Human resources; human impacts on environment
Environmental impacts on human; environmental resources
2. Tools
.. Index Human Resources
... Sustainability / Human Impacts
Land Use Cover Change Environmental Resources
Resources/Conflict - Environmental Impacts
3. Requirements
How can these be used to reduce vulnerability?
Anticipating environmental threats
Environmental problems in human term
4. Problems
Local affects
Necessary linkages to institution

Problems of information base in socio economic systems?
Top down approach - reductionist emphasis
Social indicators and social resilience - ...
Environmental theory
What does an average household need to survive?

Biophysical and social linkages
Build new institutions
Capacity building network to incorporate the indigenous peoples

Recommendations

A consultation on Circumpolar issues was hosted by the Liu Centre for the Study of Global Issues and co-sponsored by DFAIT/AGA on April 10, 2002. Moderated by Dr. Olav Slaymaker (LIU Centre), discussion focused on three themes: 1. The role of the Arctic Council in Circumpolar governance. 2. Improving the understanding of the changing Arctic environment and impacts on indigenous peoples. 3. Suggestions for policy initiatives to enhance human security in the Circumpolar region. Recurring interventions centered on the need to define issues in human terms - that information/science data must be translated into common understanding in order that affected people and communities can make informed decisions for action. Highlights of recommendations fall under two categories: those to be addressed by the federal government as a whole, other government departments or other governments and ones which can be addressed by DFAIT.

The recommendations to be addressed by the first group include: increased funding for physical and social sciences research in the north. Improved means to educate high school students in the sciences. Engaging in an Arctic Council style of consultation to address domestic northern issues. Recommendations which could be addressed by DFAIT include: building greater capacity for northerners to address international challenges, helping to close the gap between physical and social sciences both in the north and in the south including an exchange of traditional knowledge and western science. Encouraging the University of the Arctic to identify specific issues to be studied. Reinvigorate Canada's contribution to the Arctic Council by expanding the circle of people who develop national positions - going back to the people it represents to provide meaningful, regular input. Provide further support to Arctic Council Permanent Participants at the local, national and international levels so that it is the major contributor to developing the "Arctic Voice"

Abstracts

Climate Change in the Arctic: Challenges & Opportunities, Dr. Stewart Cohen

Climate change will affect the future of Arctic ecosystems, including reduction in ice and snow cover, permafrost thaw, and changes in vegetation and wildlife, but there is insufficient understanding of its implications for Arctic peoples, given other forces of change. In the long term, there will be a need for direct participation of Arctic peoples and institutions in climate change research and dialogue within and beyond the circumpolar region. New opportunities may come within Canada through the Canadian Climate Impact Adaptation Research Network (C-CIARN), while the ongoing Arctic Climate Impact Assessment will produce a circumpolar view of climate change concerns. The UN Framework Convention on Climate Change and Kyoto processes can also provide important opportunities for Arctic peoples to prepare the circumpolar.

Fast Times at Latitudes High, Dr. Hadi Dowlatabadi

This talk will provide a quick sketch of social and environmental changes in the circumpolar region. It is by no means comprehensive. It is however, representative of the nature of the challenges ahead. In particular, it highlights how the physical flows and biological systems subject this region to more than their fair share of effluents from far beyond their borders. A key challenge, as I see it, is the weakness of global governance structures for addressing the concerns of people of the Arctic and others like the Alliance Of Small Island States.

Global Change as a Tool of Analysis, Dr. Karen Erickson

Three components of global change analysis will be examined: (1) “the planetary deficit” (2) research focused on “the next generation of questions” (3) science and policy objectives “to improve the human condition”.

Environmental degradation will reliably continue through each of our lifetimes. Steady change in the natural and physical world seems to command relatively little action measured against shattering social and political upheavals. Scientists themselves disagree on the pace, magnitude, and effects of global climate change but the impacts are nowhere more visible and alarming than in the Arctic where resident communities recognize not only the erosion but also the upheaval.

In general, global climate change is only one of the multiple destructive forces with which today’s civilization must live and cope. Add resource depletion, pollution, disease, starvation, and fast-track methods of mass destruction, including CBRN terrorism, and it can be clearly understood that a debt is mounting in terms of overwhelming threats to our existence. Our *planetary deficit* cannot simply be forgiven by the World Bank or Group of 8. Neither is one nation alone capable of solving the problems arising from the planetary deficit. Are we solvent at this time in terms of having the capacity, institutions,

and will to deal with versatile and intensifying threats? Are we organized to do so? Do we have the research agendas in place to deal with the planetary deficit?

Science and policy-making communities have an increasing responsibility to recognize the state of the world by addressing critical questions. What levels of global change are intolerable? How close to “intolerable” are we? How are cultures sustained under the pressures of adaptation to threats that are upon them? Conventional questions on the causes of global warming and general observations of the impacts on society pale in significance to questions that ask what Northern peoples need to know about change and upheaval in order to sustain ecological, economic and human security. The *next generation of questions* is based on the assumption that the physical and political worlds of all latitudes are inextricably linked in a seamless web of global danger as well as opportunity.

Global change with respect to the North also means the globalization of the North. The effects of technological surge and information inundation are both subtle and penetrating, and have outdistanced human and social advances. The most important role for education and public policy may be to remind Northern constituents of the significance of *improving the human condition* upon which global long-term stewardship ultimately depends.

Innovations in Clayoquot Sound, Dr. Jamie Smith

In 1993, almost 900 people were arrested in Clayoquot Sound in the largest act of civil disobedience in Canada. A community of only 5,000 people had become the focus of international attention as a result of concerns over logging the old growth forest on Meares Island - a place thought to be home of the largest tree in Canada, and the major source of drinking water for the local community. Together with legal action on the part of the First Nations this protest led to a complete halt in logging within Clayoquot Sound.

In 1998, fishing in the region came to the same misfortune after the declaration of a “zero mortality” policy to protect the endangered coho stocks. The convergence of these issues created a crisis, which brought about community driven innovations in decision-making and management of natural resources in Clayoquot Sound. These innovative organizations for managing resources have clearly identified the need to have respect for economic, social and environmental values, while recognizing that all three values are interconnected. Members of these new institutions commonly use two Nuu-cha-nulth First Nations terms, Hushukish Ts’awalk (“everything is one”) and Iisaak (“respect”), to describe their operating principles. In May 2001, a workshop entitled “Adaptive Management and Community Sustainability” investigated the innovations in Clayoquot Sound. The workshop not only provided a venue for the local community to revisit their own innovations and future plans, but also allowed visitors to the region to learn from the communities’ experience. A workshop is currently being planned in the north, possibly in Whitehorse to examine innovations in northern communities.

Sea Ice Variability in the Arctic Coastal Waters, Dr. Grant Ingram

A large proportion of the Canadian coastal zone is influenced by sea ice. In the Arctic, the timing of ice formation and melt changes interannually, as does the extent of the ice covered region. Furthermore, the timing of ice onset/breakup, sea ice thickness and degree of ridging have a direct effect on a number of economic activities in the coastal zone, such as fisheries and maritime transport. Sea ice characteristics influence the Arctic marine ecosystem in fundamental ways and contribute to changes in coastal morphology. The main features linking sea ice and to processes in the coastal regime of the Canadian Arctic are described, as well as the scientific efforts underway to help understand this important area of Canada.

Biographies

Dr. Hadi Dowlatabadi, Canada Research Chair, Faculty of Graduate Studies, U. of British Columbia, University Fellow, Resources for the Future, Adjunct Professor, Carnegie Mellon University

After a Ph.D. in Physics and Cambridge University in England, moved to a post-doctoral position at Carnegie Mellon University studying acid rain. In 1987 he joined Resources for the Future to gain a better understanding of economics. In 1989-90, he was a Warren Weaver Fellow at the Rockefeller Foundation where he helped design LEAD (Leaders for Environment and Development) and the Energy Foundation. From 1991-2001 he returned to the Department of Engineering & Public Policy at Carnegie Mellon University to coordinate and then lead a research program focused on integrated assessment of climate change. In 1996 the National Science Foundation rewarded that effort with support to establish one of two Centers of Excellence for Human Dimension of Global Change Research (CIS-HDGC 1996-2004). The Center brings together over 40 investigators and their students from 19 institutions and 9 countries to study the interactions between managed and natural systems. In July 2001 Dowlatabadi a Canada Research Chair at the University of British Columbia where he works at the Sustainable Development Research Institute and the Liu Center for the Study of Global Issues. Dowlatabadi has been a University Fellow at Resources for the Future since 1997 where he continues to learn about resource management and economics.

“While I love pure research my career has been focused on real world problem-solving. This has allowed me to work with and learn from experts in a wide range of disciplines. I rely on mathematical models to organize my thoughts. My approach to problem solving is often concentrated on the uncertainties and complex dynamics of the natural and social systems. I have enjoyed developing this approach to problem solving through the study of a wide range of issues. These have ranged from: technical change to energy markets, from plant ecology to the spread of HIV/AIDS, from demographic change to the psychology of adaptation, from tropospheric air pollution to climate change, and from coastal storms and inundation to geo-engineering of earth’s climate. I am now trying to understand and model the cognitive and organizational aspects of how we understand and interact with the world around us.”

Franklyn Griffiths, University of Toronto, The Politics of Canadian Northern Foreign Policy

Franklyn Griffiths is Ignatieff Chair Emeritus of Peace and Conflict Studies at the University of Toronto. He is the author of: “A Northern Foreign Policy (CIIA, 1979), editor of Politics of the Northwest Passage (McGill-Queen’s, 1987), author of Towards an International Arctic Council (CARC, 1991) and of Strong and Free: Canada and the New Sovereignty (Stoddard, 1996).

Dr. R. Grant Ingram, Professor, Earth and Ocean Sciences & Principal, St. John's College, University of British Columbia

Grant Ingram is a Professor of Physical Oceanography in the Department of Earth and Ocean Sciences and Principal of St. John's College at the University of British Columbia. He completed a Ph.D. in Physical Oceanography at the Massachusetts Institute of Technology (MIT). Following graduate work, he taught and developed an interdisciplinary research program in oceanography at McGill University, becoming a Professor in the Department of Atmospheric and Oceanic Sciences. In 1991, he was named to the Federal Commission examining the environmental and social impacts of the Great Whale River hydroelectric project on Hudson Bay. He was President of the Groupe Interuniversitaire de Recherches Oceanographiques du Quebec from 1991 to 1997. He served as Chair of the Canadian Land-Ocean Interaction in the Coastal Zone Program. Current research includes impact of climate variability and predicted global change in northern and Arctic ocean regions, the role of hydrodynamics on the control of biological processes in the ocean, and the environmental changes in coastal waters resulting from hydroelectric development.

Peter Johnson, University of Ottawa

Peter Johnson was educated at Leeds University, England, and has been Professor, Department of Geography at the University of Ottawa since 1985. He is a Fellow of the Arctic Institute of North America and has been committed to northern science throughout his career in teaching and research. He has worked in a number of national and international capacities, many with a particular focus on northern environments: working groups of the International Commission on Snow and Ice; member and chair of the Sub-Committee on Glaciers of the Associate Committee on Hydrology; and representative of the Canadian Association of Geographers on the Canadian Geoscience Council. Professor Johnson is past President of the Association of Canadian Universities for Northern Studies and Canada's representative on the International Arctic Science Committee (IASC) Council.

Ambassador Mary Simon, Ambassador for Circumpolar Affairs, Senior Arctic Official

Mary May Simon, born in Kangirsualuujuk (George River), Nunavik, has held a number of positions with the Inuit Tapirisat of Canada, and served as a Board member from 1991 to 1994.

In March 1997, Ms. Simon was appointed as a Member of the Joint Public Advisory Committee of the Commission on Environmental Cooperation, a side agreement of NAFTA, and was elected Chair in December of 1997. Ms. Simon served as the President of the Inuit Circumpolar Conference from 1986 to 1992, and as Special Envoy from 1992 to 1994. From 1980 to 1983, Ms. Simon served as an Executive Council Member of the Conference. Ms. Simon was appointed Canada's first Ambassador for Circumpolar Issues on October 31, 1994, becoming the first Inuk to hold an ambassadorial position. In

1992 Mary Simon was awarded a honorary Doctorate of Laws from McGill and, in 1994, from Queen's University. In 1995 she was named Chancellor of Trent University.

Mary Simon has been honoured for her work through appointments to the Order of Canada, the National Order of Quebec and the Gold Order of Greenland. In April of 1996, Ms. Simon received the National Aboriginal Achievement Award for her work on environmental issues and for raising awareness of, and promoting solutions to, the challenges facing the Inuit of Greenland, Alaska, Russia and Canada.

Dr. Olav Slaymaker, Academic Director, Liu Centre for the Study of Global Issues

Olav Slaymaker was Head of the Department of Geography (1982-1991); Associate Vice-President Research (1991-1995), Director of the Liu Centre for the Study of Global Issues (2000), Chair of South-North Studies (2001-present) and Academic Director of the Liu Centre for the Study of Global Issues (2001-present). His major teaching interests are: global environmental sustainability; the South-North dialogue; history and philosophy of environmental science and the biophysical environments of British Columbia.

His major research interests are focused on environment-society interrelations in mountain regions: specifically in relation to their geomorphology, hydrology, land use and sustainability. He has published over 100 scientific papers and 16 books. He has been Visiting Professor at the Universities of Cambridge (U.K.), Vienna (Austria), Canterbury (New Zealand), Southern Illinois (U.S.A.) and Oslo (Norway) and has received the following awards and distinctions: Killam Senior Research Fellow; Erskine Fellow; NSERC International Collaborative Research Fellow; Certificate of Merit, Japanese Geomorphological Union; Fellow of Norwegian Academy of Science and Letters and Award for Service to the Profession of Geography, Canadian Association of Geographers.

Olav Slaymaker is a past-President of the Canadian Association of Geographers; a past-President of the International Association of Geomorphologists; a past-Governor of the International Development Research Centre, Ottawa; a past- Board member of the Social Science Federation of Canada and of the Canadian Geoscience Council; a Fellow of the Royal Canadian Geographical Society; and has chaired several Commissions of the International Geographical Union.

His major teaching interests are: global environmental sustainability; the South-North dialogue; history and philosophy of environmental science and the biophysical environments of British Columbia.

Robert Williamson, University of Calgary

Doctor Williamson (CMS, MLA, Ph.D.) is Professor Emeritus of Cultural Anthropology and Research Associate of the Arctic Institute of North America (based at the University of Calgary). Over some 43 years of northern work, he has done research along the Mackenzie Valley and the Delta, Baffin Island, Nunavik, N.W. Hudson's Bay and

Greenland. Moving with the social changes over his life-time, his work has moved from language and belief studies in the earlier igloo-dwelling and dog-team travel days, to increasing concern with applied anthropology, dealing with quasi-urbanization, industrialization, health, macro-social organization and politization, identity, communications and the arts, self-determination and socio-ecological and logistic dynamics – to the contemporary situation of Arctic climate change. He was founder of the Inuit journal *Inuktitut* and a pioneer to the CBC Northern Service broadcaster, mainly in *Inuktitut*. He also served two terms on the Northwest Territories Legislative Council. He has worked consultatively with Inuit Tapirisat of Canada and the Inuit Circumpolar Conference, and earlier worked with the National Museum of Canada and the Department of Northern Affairs. He has published extensively. For twelve years he was Head of the Arctic Research and Training Centre at Rankin Inlet, NWT and Associate Director of the Institute for Northern Studies at the University of Saskatchewan. Dr. Williamson has been a member of the Order of Canada since 1975. His present research interest concerns the social impact of the DEW Line and possible developments arising from global warming in the Arctic.