

InfoNorth

An Urgent Appeal to the Government of Canada to Proclaim our Northern Identity

By John H. England

INTRODUCTION

NUMEROUS reports spanning the past three decades clearly identify the importance to Canada of northern science, technology, economics, environment, culture, and international affairs. The ongoing resolution of land claims with First Nations peoples and political devolution of the Northwest Territories are now being accompanied by a dramatic rise in economic interest and activity in northern Canada. We have come an immense distance since the Berger Commission wisely rejected the social and environmental costs anticipated from premature economic development of the Mackenzie Valley corridor (Berger, 1977). Looming new developments of unprecedented scale now present for Northerners both significant opportunities and challenges, especially if long-term cultural vitality and a sustainable environment are to be maintained. Northern Canada is also a key archive and bellwether for global climate change, and understandably it has become increasingly the focus of foreign researchers, whose resources vastly exceed those of Canadians. In light of this northern transformation, this article revisits Canada's ongoing unpreparedness in northern science and technology (England et al., 1998), contrasts Canada's inactivity with proactive steps being taken by other countries with well-structured polar agendas, and recommends recently proposed solutions as a long-awaited remedy.

TWO PERSISTENT COMPONENTS OF CANADA'S NORTHERN CRISIS

By failing to provide appropriate and qualified leadership, we have in effect abandoned our northern interests and responsibilities

For the past decade there has been a progressive downsizing of the federal government's research departments. These and other cutbacks have inevitably undermined the traditional synergy between government agencies and universities (England et al., 1998). The negative impact on careers and opportunities within the university community was further documented by the Northern Task

Force (1998–2000), jointly conducted by the Natural Sciences and Engineering Research Council (NSERC) and the Social Sciences and Humanities Research Council (SSHRC). A serious consequence of the downsizing has been reduced recruitment of northern specialists, both as graduate students and as faculty, at Canadian universities. This shortfall will result in the inability to meet national needs and international responsibilities as the present scientific community retires.

Canada's underfunding of northern research has pushed us to the periphery of international polar science. Indeed, more and more of our valuable time is spent lobbying for our fragile existence. Lacking the resources to initiate programs of international interest, many Canadians depend on invitations from foreign researchers to tag along on their projects, many of which operate in our own country. Within the environmental earth sciences, examples of international projects include the U.S. National Science Foundation's Paleoenvironmental Arctic Science (PARCS), Paleocology of Arctic Lakes and Estuaries (PALE), the joint Russian-American Initiative on Shelf-Land Environments in the Arctic (RAISE), and the European Science Foundation's Quaternary Environments of the Eurasian North (QUEEN). As quoted in *Canadian Geographic*, Ian Stirling, a senior Canadian Arctic wildlife scientist, aptly warns that our researchers risk becoming "scouts for big-money projects from other countries" (Struzik, 1999:48). This statement was not intended to slight foreign scientists; to the contrary, it is conspicuously *our problem!* Nor does Stirling suggest that we should look unfavourably at scientific collaboration with foreign research groups—quite the opposite. But he does highlight the marginalization of Canadian scientists as they are persistently forced to be followers.

A rather alarming example of our scientific passivity was unintentionally displayed last year in Canadian newspapers. A prominent article highlighted the activities of a U.S. National Science Foundation (NSF) project that had hired the Canadian icebreaker *Des Groseilliers* to be frozen into the sea ice for a year to study the surface heat budget of the Arctic Ocean (SHEBA, October 1997–October 1998). Although a few Canadian scientists participated in SHEBA, the article referred solely to an array

of American scientific projects. The only mention of a Canadian contribution was reserved for the culinary success of our galley staff! But Canadian scientists who point out the stronger funding given to foreign researchers may be dismissed as American wanna-bes. This dismissal, even if made tongue in cheek, implies a serious misunderstanding of science and opportunity on our part. The real crisis here is a lack of Canadian leadership and vision.

Canadian Arctic policy remains inefficient and indecisive, without legislation to direct us

Unlike the United States, Finland, and other members of the eight-nation Arctic Council, Canada lacks legislation that recognizes our northern identity and provides a strategy for what ought to be conspicuous self-interest (England et al., 1998). The lack of such legislative structure, combined with the modest resources committed to northern research, ensures our inefficiency and weak performance. It also serves as an effective disincentive to northern study and recruitment because the glaring uncertainty of adequate support (that has plagued generations of Canadian scientists) has convinced many to work in the south, where costs are lower and the likelihood of successful results (productivity) is higher. Furthermore, without an integrated structure, all foreign research initiatives in Canada must approach an array of administrative agencies. This 'broken front' ensures that these initiatives remain poorly integrated with our own national interests and, in some cases, has caused unnecessary conflicts.

SOBERING COMPARISONS WITH OUR CIRCUMPOLAR NEIGHBOURS

There is now unprecedented international interest in polar research, and the Arctic is becoming a veritable academic Klondike for purposes of understanding global climate change. Meanwhile, Canadian northern scientists remain trapped in a wearisome self-flagellation, lamenting our inactivity before puzzled onlookers from the international community. Repeatedly, we are forced to update embarrassing comparisons with what other countries are doing in polar matters.

The United States of America: The Undisputed Polar Leader

The scope, integration, and support of Arctic research in the United States have increased enormously since the passage of the Arctic Science and Policy Act (1984, amended 1990). This proactive legislation established a thorough structure, a dedicated budget, and rigorous planning to ensure that research stays on course. As a result, U.S. Arctic research and training now eclipse those of Canada (see England et al., 1998). The U.S. legislation

established the National Science Foundation (NSF) as "the lead agency for implementing Arctic research policy" (SEC. 102.(b)3). NSF Arctic and Antarctic research is funded principally through their Office of Polar Programs, which has three subdivisions: Arctic System Science (ARCSS), Arctic Natural Sciences, and Arctic Social Sciences. Interdisciplinary research is concentrated within ARCSS. The Office of Polar Programs has recently opened a science liaison office in Moscow to facilitate American and Russian collaboration in the geosciences and in the Arctic. The United States also recently initiated collaborative Arctic research with Norway (see below).

Amendments to the U.S. Arctic Research and Policy Act in 1990 established the Arctic Research Commission and an Interagency Arctic Research Policy Committee (IARPC) to help implement the Act. IARPC includes all the major federal agencies (NSF, Departments of Commerce, Defense, State, Agriculture, Energy, Interior, and Transportation, as well as NASA and the EPA etc.). Canada has no similar integrated structure or national strategy. The NSF chairs the IARPC, develops five-year plans (updated every two years) to promote the national policy, and publishes these biennial reviews and reports on the status of current American research in the semiannual journal *Arctic Research of the United States* (1999). By Canadian standards, the diversity of research reported in any one of these issues is simply staggering (from geophysics and glaciology to marine ecology and medical and human engineering). There is also the Arctic Research Consortium of the United States (ARCUS), a nonprofit corporation that coordinates educational, professional, and scientific interests. ARCUS highlights ongoing NSF research in its publication *Witness the Arctic*. ARCUS has recently established the Arctic Research Support and Logistics Working Group (RSLWG), which is supported by NSF. Another new NSF program, in the planning phase, is the Study of Environmental Arctic Change (SEARCH). This will be a long-term, multidisciplinary and interdisciplinary program investigating the physical, biological, and social sciences, centred around the environmental variability associated with the Arctic Oscillation—an atmospheric variation linked to global atmosphere and ocean circulation, called *Onami* (Inuit for "tomorrow").

Funding for Arctic research within NSF now stands in the hundreds of millions of dollars (U.S.) annually. Arctic logistical funding presently totals \$25 million, "\$3 million more than the President's budget request" (*Witness the Arctic*, 1999:16). Direct comparison to Canada is difficult. But NSERC/SSHRC funding for northern research is likely less than that provided by our lead agency for Arctic logistics (Polar Continental Shelf Project, NRCAN), which has a total annual budget of ~\$4 million (Cdn), of which \$1 million is earmarked for all university support (annually). In the United States, support for Arctic research is further supplemented by the Office of Naval Research, which has just procured the first dedicated scientific

icebreaker, the U.S.C.G.C. *Healy*. The *Healy*, designed to meet government, academic, and industrial interests, is one of the world's largest non-nuclear icebreakers. It is fully equipped with survey/cargo boats, two helicopters, depth sounding and sub-bottom profiling/coring systems, and a TerraScan weather satellite system. Designed for extended polar operations, it has the ability to overwinter with a scientific party of 50, beginning in 2001.

Other Arctic Initiatives

Finland's Ministry of Trade and Industry recently released *The Current State of Arctic Research in Finland* (Saarnisto, 1998), which identifies Finland's Arctic interests. These include environmental and climate change ("of the entire northern hemisphere"); access to the whole of northern Russia as a natural laboratory, now open to Western scientists; unexplored natural resources relevant to Europe's energy supply; northern seaways (their Northeast Passage in particular); and geopolitical and other economic considerations (e.g., shipbuilding, transportation, human issues of indigenous peoples, and health). The document also highlights Finland's success in having the European Union ratify its *Northern Dimension*, which sets out a coordinated policy on the Euro-Arctic Barents region, at the Luxembourg summit in December 1997. Finland expresses this keen Arctic interest even though its Arctic territory is smaller than many Canadian Arctic islands! The Finnish document also compares Arctic research elsewhere, noting, for Canada, that despite our "vast Arctic land and sea areas...national research funding has declined drastically" (Saarnisto, 1998:50). Here is another Arctic nation publicly acknowledging our northern ambivalence.

The Arctic interests of numerous other nations are also summarized in the Finnish document. The Swedish Royal Academy of Sciences includes the Swedish Polar Research Secretariat (logistical) and the Polar Research Committee. Sweden launched its Arctic research program in 1987. Last summer, the Swedish Royal Academy of Sciences funded its "Tundra Northwest Expedition 99," hiring a Canadian icebreaker to traverse the Northwest Passage with European and North American scientists onboard. Despite the invitation to travel through our own territory at their expense, few Canadians could be found to join in this ecological research. Norway's national committee for polar research is actively developing Svalbard (Spitsbergen) into a wide-ranging centre for Arctic research, including educational opportunities through University Courses on Svalbard (UNIS). Norway's Norsk Polarinstitutt in Tromsø has also just signed a Statement of Cooperation with the United States (NSF Office of Polar Programs) to promote common interests in Arctic and Antarctic research, with an emphasis on an expanded U.S. presence on Svalbard. Denmark's Commission for Scientific Research in Greenland has published a new strategy for 1998–2002 that

emphasizes the global environment, Arctic natural resources, and Arctic social development, including health.

UNANIMOUS CALL TO ENACT A CANADIAN POLICY

The Association of Canadian Universities for Northern Studies (ACUNS) met in Ottawa on 5–7 November 1999 to address the crisis of northern science in Canada. ACUNS members debated the need for Parliament to enact a Northern Science and Technology (S&T) Policy, taking into consideration two other current initiatives intended to bolster Canada's northern science and technology. The first initiative involves an interdepartmental, federal government committee of Assistant Deputy Ministers (ADMs) who are working to establish a Northern S&T Strategy in collaboration with the Canadian Polar Commission and the granting councils. A working group established by the committee has drafted a framework for northern S&T within the federal government. The committee is focusing on improving cooperation, efficiency, and delivery of services to government and nongovernment clients. It is important to note that the objective to improve interdepartmental cooperation is already a fundamental component of the U.S. Arctic legislation (mandatory interagency cooperation). However, this cooperation represents only a small part of the many American initiatives designed to promote their national agenda in the Arctic.

The second recent Canadian initiative to revive the northern science community has focused on universities through the joint NSERC/SSHRC Northern Task Force. The Task Force is currently preparing its final recommendations on how the physical and social science councils might direct resources to rejuvenating northern science. ACUNS acknowledges that both of these initiatives (the Assistant Deputy Ministers' Committee and the Northern Task Force) are necessary and constructive steps. However, they remain limited in scope and cannot possibly meet the broader national needs for an integrated government policy. Support for such a policy was the *unanimous* choice at the annual general meeting of ACUNS, and the Association issued a formal statement to the Prime Minister and various cabinet ministers. The establishment of a policy is also an objective of the Canadian Polar Commission.

ACUNS questions why government would seek to establish only a northern strategy or framework within its departments without a complementary national policy to direct it. Civil servants who have publicly defended the adequacy of a strategy alone have dismissed the need for a policy on the grounds that it would take too long to work out or would not be of interest at the ministerial level. For those of us who have faced the languishing demise of the northern research community, these are not acceptable arguments. Rather, the civil servants' underlying attitudes

are unfortunate testimonies to Canada's apathy and indecision when it comes to a northern commitment.

SOLUTIONS READY-MADE FOR GOVERNMENT ACTION

It is evident that the time has come to redress our current disorganization by acting on widespread, sound advice. Two interrelated solutions supported by the ACUNS AGM of 1999 are presented here.

Solution #1: Establish Effective Legislation

We urgently require the passage by Act of Parliament of legislation that will define Canada's northern interests and provide a thorough structure for their attainment. For the most part, the passage of such legislation would be 'cost-neutral,' as many of its components are already funded but remain poorly integrated. This legislation would establish a Northern Science, Technology, and Policy Act. The Act would be fundamentally multidisciplinary/interdisciplinary, encompassing all aspects of the physical and social sciences, and it would address and take initiative from the needs of northern communities, science institutes, and governments.

The composition of this legislation is not proposed here, but suffice it to say that the U.S. Arctic Science and Policy Act (1984, amended 1990) could serve as a useful guide for its establishment (see IARPC, 1999: Appendix E). The U.S. legislation is thoughtful and thorough, and 15 years after its passage the vitality and diversity of the American research agenda provide clear evidence of its success. Such legislation in Canada would of course reflect Canadian needs (e.g., the Nunavut Research Agenda, 1997, provides an instructive overview), and its authors would consider other relevant foreign legislation. Clearly, Canadian legislation will have specific needs that differ from those of the United States or elsewhere. However, it should be noted that several key components of the U.S. Act (e.g., its Arctic Research Commission) already have counterparts in Canada. Furthermore, we have other components in place that have no counterpart in the existing U.S. legislation, such as the Arctic Ambassador and the logistical agency, Polar Continental Shelf Project. Hence, Canadian legislation as envisioned here would serve three functions:

1. To formally recognize and proclaim our interests as a northern nation;
2. To pull together presently disconnected national agencies and resources, integrating them in a far more effective structure (see below) that will ensure maximum efficiency and cooperation both within and outside government; and
3. To implement a scheduled review process to assess whether we have met our objectives and to set new priorities as needs arise.

Solution #2: Establish a Canadian Polar Institute

Arctic research is being spearheaded by prestigious polar institutes around the world, which have no Canadian counterpart. Such institutes optimize the efficient use of resources and create a critical mass of knowledge, stimulating a nation's research capacity and meeting defined needs. Examples of foreign institutes include the Russian Arctic and Antarctic Institute, St. Petersburg; the Alfred Wegener Polar and Marine Institute, Bremerhaven (with a staff of over 600, and a dedicated research icebreaker *Polar Stern*); the Danish Polar Center, Copenhagen; the Norsk Polarinstitut, Tromsø; the British Antarctic Survey and the Scott Polar Research Institute, both in Cambridge, UK; and recently, the Japanese-funded International Arctic Research Centre at University of Alaska, Fairbanks. The United States also has vigorous Arctic research institutes at several universities, many of which have annual research budgets measured in tens of millions of dollars (U.S.), e.g., the Institute of Arctic and Alpine Research (INSTAAR), University of Colorado at Boulder; the Polar Science Centre, University of Washington; and the Byrd Polar Research Centre, Ohio State University at Columbus. The much smaller research institutes at Canadian universities are not remotely comparable, having far more modest resources and agendas (for example, the Centre d'études nordiques, Université Laval; the Canadian Circumpolar Institute, University of Alberta; the Arctic Institute of North America, University of Calgary).

Canada requires an identifiable structure that would provide a focal point for our polar agencies and intellectual expertise, both Arctic and Antarctic. Presently, these agencies and interests are physically dispersed, diminishing their accessibility to their clients and their ability to establish a coordinated agenda. Therefore, the second requirement, which would be embedded in the broader legislation (above), includes the establishment of a *Canadian Polar Institute*, as proposed in 1985 by the Honourable David Crombie, then Minister of Indian Affairs and Northern Development. The argument in support of a Canadian Polar Institute is not made simply to mimic other countries; rather, it recognizes that their formula is conspicuously successful in optimizing resources and creating a critical mass. And this should not be a 'virtual institute': Canada itself borders enough on being virtual! The proposed *Canadian Polar Institute (CPI)* is not intended to supplant or diminish the many existing sister institutes with northern interests around the country (e.g., Nunavut Research Institute, Aurora Research Institute, Yukon Science Institute, or those at Canadian universities cited above). Rather, the *CPI* is intended to be complementary, and other institutions would be directly affiliated with it, indeed would influence its agenda (see proposed structure, below). The *CPI* would serve as an effective national hub for existing agencies and services that already have dedicated budgets. It would have a broad mandate, including both social and physical sciences. It would promote

community involvement, and it would have 'porous walls' that encourage participation and interaction with all interested stakeholders.

Possible Structure of the CPI

There is no single, integrated, national centre in Canada that provides one-stop access to northern agencies, resources, and policies. For example, anyone visiting Ottawa (where the Polar Commission, Arctic Ambassador, and Polar Continental Shelf Project are located, together with numerous other 'northern' government departments) has the onerous task of finding these widely separated agencies or individuals amidst unfamiliar territory. With the modest resources now available for its northern agenda, Canada would benefit enormously from their integration. It is proposed that the *CPI* would house the Polar Commission (Policy, Communication, and Public Education); the Arctic Ambassador (Foreign Affairs/ International Relations); the Polar Continental Shelf Project (logistics); and, to the degree possible, resident scientists and visitors. The integration of lead northern agencies would substantially improve their interaction, collaboration, and efficiency. Ideally, departments with strong northern interests and research missions would have members there as well (i.e., Natural Resources Canada, Department of Indian Affairs and Northern Development, Department of Fisheries and Oceans, Environment Canada, Department of Foreign Affairs, Agriculture and Agrifood Canada, Health Canada, Transport Canada, etc.). Precedent does exist for housing members of different departments in a single facility (e.g., the Bedford Institute of Oceanography, Dalhousie). In addition, the *CPI* would also encourage involvement by visitors from northern communities, as well as academics and students (Canadian and foreign). It would also serve as the lead agency for Canadian participation in international science efforts, such as the International Arctic Science Committee and the polar committees within the International Geosphere-Biosphere Program (IGBP). A national polar library should also be established at the *CPI*. This would be connected with other electronic abstracting and indexing services around the country, such as the Arctic Science and Technology Information System (ASTIS).

Ensuring Effective Partnership within the CPI

In order to ensure effective partnerships amongst the individuals and agencies both within and outside the *CPI*, it is proposed that the institute be guided by a *Canadian Polar Policy Network (CPPN)* that would serve as an advisory board. The *CPPN* would have representatives from the *CPI* (Canadian Polar Commission, Arctic Ambassador, Polar Continental Shelf Project, scientists, etc.) and it would also include members from northern communities and institutions, sister institutes across the country, and major granting agencies (NSERC, SSHRC, CIHR).

The emphasis here would be to ensure effective integration and planning across the complete spectrum of national interests, with particular attention placed on northern communities and institutions. As stated by the Honourable Richard Nerysoo, former Minister of Education, Culture and Employment (NWT, 1994), "For many years, northerners have participated in research designed to meet the needs and priorities of others, and it is only fair that now we have an opportunity to see research that meets our needs" (Nunavut Research Agenda, 1997:4). Functionally, the *CPPN* would play a role similar to that of the U.S. Interagency Arctic Research Policy Committee (IARPC). The *CPPN* would serve to ensure that full effort was brought to bear on identifying and planning for emerging issues that warrant attention. The *CPPN* would report to the Director of the *CPI*. The Director would act primarily as a facilitator, pursuing the initiatives identified by the *CPPN*, and ensuring interaction and communication between the various members of the *CPI*. The Director could report to the Prime Minister's office, assuming that the mandate of the *CPI* were commensurate with such a national role.

The presence within the *CPI* of government departments and agencies would encourage cooperation while maintaining each member's autonomy. Therefore, the Arctic Ambassador would remain accountable to the Minister of Foreign Affairs, but would nonetheless benefit from and influence the complete spectrum of opinion and concerns made available within the broad venue of the *CPI*. Similarly, the Canadian Polar Commission would continue to report to the Minister of Indian and Northern Affairs, but as policy makers with the responsibility for promoting northern issues and public awareness, Commission members would benefit from collaboration with others, such as resident scientists. PCSP would remain accountable to the Minister of NRCan, but its planning would benefit from direct partnership with the scientific community that uses its resources. The scientific community could also evaluate the legitimacy of proposed projects requesting PCSP support (an evaluation now done by the PCSP's Scientific Screening Committee). The challenge for all members of the *CPI* would be to maximize efficiency, communication, planning, and partnership in fulfilling our national, northern objectives. The *CPI* agenda would naturally span all sectors of strategic, cultural, social, scientific and technical importance; hence, it would touch on most, if not all, ministerial portfolios. The *CPI* would also serve as a national centre of expertise, providing a one-stop contact point for all international polar initiatives, which could then be efficiently coordinated with Canadian interests.

In October 1999, the Honourable Lloyd Axworthy, Minister of Foreign Affairs, publicly announced the need for a Polar Policy to be drafted soon by his Department. His vision could readily be expanded to include the legislation proposed here, which would provide Canada with

the means to address and fulfill its northern agenda. It is long overdue to rigorously structure and nurture Canada's northern responsibilities and opportunities, and to recognize that the Arctic has rapidly become an important international stage. We will simply continue to flounder and squander potential if we ignore the need for proper legislation. Conspicuously, such legislation remains the *missing foundation*, at growing expense to the future of our northern interests. Do we have the will and the vision to act?

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