

The New Insecurities of Canadian Integrated Ocean Management

Brit Sojka

In the Canadian Arctic, new federal policies are challenging the ideals of integrated ocean management. Consolidated environmental regulatory authority and efforts to subdue and silence environmental research are also placing the Arctic's ocean resource-dependent and subsistence-based indigenous communities at risk. Through the lens of Canadian ocean and coastal governance, this paper is an attempt to identify and address some of the emerging insecurities and tensions that exist between current federal resource management policies and their ultimate impact on both the people and environment of the Canadian Arctic.

The reduction of year-round ice cover in the Canadian Arctic has been seen as a momentous business opportunity by many companies eager to tap the region's previously inaccessible resources. In anticipation of this unprecedented investment and development pressure, the policies and management frameworks that govern these resources warrant attentive consideration – both with respect to Canada's response to external globally-driven pressures as well as to the nation's ability to sustainably leverage this wealth for long-term human benefit. Although potentially one of the wealthiest nations on earth – particularly if estimated values of untapped oil, natural gas and minerals are correct – achieving and sustaining high levels of human well-being has remained incredibly challenging for Canada in the face of rapid environmental change and the nation's many competing socioeconomic demands.

With the passage of Canada's *Oceans Act* in 1997 and the adoption of Canada's Oceans Strategy in 2002, a new ocean management paradigm emerged in Canada that attempted to unify and regulate the divergent and competing uses of the nation's marine resources. Over the past decade, increased global attention on socio-ecological system resilience has also prompted shifts

in U.S. ocean policy toward ecosystem-based management (EBM) and the use of integrated ecosystem assessments (IEA) by the National Oceanic and Atmospheric Agency (NOAA) (Fluharty 2012; Murawski & Matlock 2006). As the Canadian Science Advisory Secretariat (CSAS) emphasized, the marine resource “manager’s reality is evolving – it is moving from single stock to multispecies fish management, from mostly fisheries users to multiple users (fishing, transportation, oil and aquaculture, ecotourism, recreational boating, dumping, mining, etc.), and lastly moving from management by activity to Integrated Management” (2001: 35). Described in Canada’s Oceans Strategy (2002) as “a continuous process through which decisions are made for the sustainable use, development and protection of areas and resources”, integrated ocean management has been heralded as a means to overcome fragmented and sector-specific decision-making (36). It marks an acknowledgement on the part of Fisheries and Oceans Canada (DFO) that the conventional top-down model of resource governance is no longer supported by the broader scientific community as the preferred means to achieving and maximizing human well-being and ecological function.

Instead, public participation and the principle of subsidiarity (i.e. life-impacting decisions should be made at the lowest level of governance possible) are the new elements of best practice in an era of increasing complexity and uncertainty (Berkes et al. 2005; McCay & Jentoft 1996; Wiber et al. 2004; Ludwig 2001). As described by the Royal Society of Canada’s 1995 case study, the era of aquatic science that gave rise to the *Oceans Act* in 1997 emphasized the collaboration between members of civil society, indigenous groups, the private sector and policymakers to help promote the generation and use of local knowledge in their research (Berkes et al. 2005). The creation and institutionalization of co-management agreements through First Nation land claims agreements – many finalized in the early 1990s – also strengthened these collaborative management norms (Fast et al. 2001; Penikett 2006).

Beginning in 2006, however, with the ascendancy of Stephen Harper’s conservative federal administration, the ability of DFO and Environment Canada to promote the ideals of integrated ocean management have been systematically cut short. A decimation of agency budgets, massive reductions in federally-funded research, and wide-spread and targeted lay-offs of resource management staff have incapacitated Canada’s ability to execute the vision of the *Oceans Act* or to widely promote informed and integrated resource governance in meaningful and substantive ways (Leahy 2011; Harnett 2013). In 2013-14 alone, DFO lost \$89 million from its budget and an additional \$100 million cut has been promised – along with the stated intention of “consolidating decision-making authority” – over three years starting in 2015-2016 (McLeod 2013). These cuts have been further aggravated by reductions in climate science and policy positions – such as Canada’s withdrawal from the Kyoto protocol in 2011 – that exemplify the lack of federal priority now being given to understanding and addressing the impacts of climate-related environmental change.

Granted, budget cuts to natural resource management agencies have not been restricted to Canada in recent years. The United State’s federal budget sequestration in March 2013 has also had a chilling impact on NOAA’s hiring of new staff and has further drained the agency’s grant and contract funding for the year (Berger 2013). However, the budget woes of the United States have not been accompanied by such a targeted and systematic dissolution of federal industry oversight as has been observed in Canada. At the same time there has also been an increasing

alarm among many in the Canadian scientific community over the administration's "muzzling" of scientists with research or evidence that does not support and advance the administration's current pro-industry and pro-oil/gas development agendas (Fitzpatrick 2012; Linnet 2012). The ability of resource managers and government scientists to engage with communities in meaningful ways has become highly politicized according to a recent report from the University of Victoria's Environmental Law Clinic. This is due, in part, to the administration's new policies requiring all government scientists to receive consent from public relations officers before answering questions from the media (Greenwood 2013).

Both the dismissal and silencing of Canadian scientists are not just issues of concern for researchers monitoring the downstream impacts of industry, however. For many years, Canadian researchers have also played an important role in international efforts to describe and model climate change. Charles Emmerson (2010) has recently addressed the ongoing significance of these efforts. As he succinctly states, "get it right, and we will save money and lives; get it wrong, and we will waste money and lose lives. The case for supporting Arctic scientific research, therefore, is unanswerable. And the case for supporting its internationalization – to allow for the best global talent to emerge and to allow for a common scientific understanding of climate change to be forged – is compelling" (141). As collaborative international science and research has also been a dominant means of establishing Canada's presence in the power dynamics of the emerging Arctic world region, reverberations from the felling of environmental science and research may portend surprising upsets to Canada's geopolitical clout in the years to come – and these surprises will, no doubt, have implications for Canadian lives and livelihoods.

Already, for many people in the Canadian Arctic, the ongoing international debate over whether or not we have exceeded the prescriptive environmental boundaries needed to provide "a safe operating space for humanity" is no longer moot (Rockström et al. 2009). The reality of the Canadian North is concretely one of a climate-altered environment. Yet, while this international debate persists, much of the environmental management theory and literature remains co-opted by ongoing calls for scientists and policy-makers to work on building greater ecosystem resilience as a way to deal with the extent of climate change uncertainty. However, as Berkes et al. (2005) have emphasized, "discussing vulnerability only in the positive terms of resilience and capacity places the onus on Aboriginal people to absorb and counteract negative environmental impacts caused by the industrial economy, rather than targeting the problems to demand change" (65). In lieu of ecosystem resilience theory, calls are now being made by some environmental ethicists for traditional management norms to be replaced by governance models described as "adaptation planning" (Dryzek et al. 2013). Adaptation planning recognizes that the "traditional knowledge" that scientists and policy-makers have previously used to govern our planet may no longer serve as a useful guide to our climate-changed future. Instead, versatile new tools will be needed to address the unexpected, urgent and immediate problems once guarded against through risk assessments and incremental policy course corrections.

Yet, like resilience, the idea of adaptation is fraught with the potential for misuse amid the power imbalances of many environmental management contexts. Faced with the need to adapt to a rapidly changing environment, Canada's indigenous communities are experiencing considerable pressure and incentive to reformulate the way they perceive, value and act toward their environment and the resources it contains. Much as they have for the past 200 years, southern

society, science and technology are continuing to reshape indigenous epistemologies and self-perceptions as an implicit exercise of colonial conquest (Douglas 2007; Latour 1993).

Douglas (2007) has addressed the many forces that have promoted the separation of nature from subsistence-based communities – a process he describes as “enormously beneficial, as it allows modern societies to treat nature as an objective, manipulatable sphere that is separate and distinct from humanity”(215). Latour (1993) has shown how early nineteenth century programs of European scientific inquiry used the ‘rhetoric of inclusion’ to exploit Inuit knowledge and abilities in scientific expeditions and resource exploitation while fundamentally disregarding and marginalizing indigenous interests and concerns. Through the lens of history, these examples provide greater insight into the ongoing concern over the postcolonial inequities of Arctic environmental change. These concerns are commonplace in many resource management debates and can be seen in everything from Haalboom & Natcher’s (2012) unease over the potential consequences of labeling climate-impacted indigenous communities “vulnerable” to calls by Veland et al. (2013) for researchers and policy-makers to do a better job of epistemologically ground-proofing risk assessments.

It is within this evolving and polarized worldview that Canada’s coastal communities now contend with the everyday use of their environment’s ocean resources. Agrawal (2006) has discussed how limiting governance tools to the representation of a small set of desirable features within an environment – for example, funding just enough science to estimate the quantity of oil and gas in the ocean seabed – can result in the devaluation of the day-to-day use of resources by local residents in management calculations (61). Agrawal’s work, which focuses on the evolution of forestry practices under a colonial regime, speaks to the social conflicts that emerge from management classification systems developed out of and in support of colonial rule. The Canadian settlement history of indigenous landscapes as well as the current reformulation of natural resource policies to better serve the needs of the current conservative agenda share many characteristics with this colonial narrative – not least, the underlying reality that people’s lives fundamentally depend on the quality of their environment and their ongoing access to and safe use of the renewable resources those environments produce.

How then are these fractures in the ideals of integrated ocean management, the move to shrink science and the consolidation of decision-making playing out in regard to the ability of Canadians to safely depend on ocean resources at provincial and local scales? One way to answer this question may be found in Canada’s capacity to address the problem of persistent organic pollutants (POPs). Due to the atmospheric deposition of far-ranging air pollutants, many of these toxins now infuse the remote Arctic environment. Further contamination risks have also been placed on human health and wildlife by the unmonitored industrial wastes which have accumulated around harbors, oil rigs, mines and the Arctic’s two thousand military sites (Fisk et al. 2003). As a result of these pollutants, contaminated food has become a widespread concern among Arctic indigenous communities which rely heavily on the hunting and gathering of local foods. The Inuit eat four times the amount of fish per capita than other Canadians and further increase their exposure risks by eating the fats and organs of marine mammals where lipophilic contaminants accumulate (Fisk et al. 2003). The significance of these activities to the well-being of an entire community is further amplified by kinship systems that promote widespread food distribution and sharing (Birkes et al. 2003).

DFO has never had the capacity nor the mandate to fix the complex international issue of atmospheric POPs. Indeed, it is a problem which has long engaged Canada and its indigenous peoples in ongoing United Nations negotiations and treaty-making (Downie & Fenge 2003). However, DFO and federal policies do intersect around the human use of these contaminated resources in a number of ways. These policies have the potential to either undermine or support the well-being of local communities through their ability to provide reliable information, restrict access to marine resources or valuable habitats, give value to local interests and knowledge, and, ultimately, determine the future of a community's overall human and natural resource wealth. With Canada's long-standing recognition of the significant health – and economic – impacts of POPs regulation on subsistence-based communities, Canada's decision to shut down the DFO's entire ocean contaminants program earlier this year is disturbing. It is disturbing from a human rights standpoint, an environmental stewardship standpoint and from a national security standpoint as well.

In 1970, Prime Minister Trudeau used "legislation setting out measures necessary to prevent pollution in the Arctic Seas" to assert Canadian sovereignty over the Northwest Passage (Canada, Speech from the Throne, 23 October 1969). Trudeau's geopolitical tactic was taken in response to Humble Oil's decision to send its oil tanker *SS Manhattan* on a trial run from the Baffin Sea in the east to Viscount Melville Sound in the west. Today, it is hard to imagine Canada's current administration taking a similar strategic approach or Canadian officials being "haunted by visions that someday the passage might be choked with oil tankers" as were those of in Trudeau's era (Grant 2010: 350). As Peter Ross, one of DFO's former environmental toxicologist emphasizes, starting in April 2013 "the entire pollution file for the government of Canada, and marine environment in Canada's three oceans, will be over-seen by five junior biologists scattered across the country, (Vancouver Sun 2012). Apparently, preventing pollution in Canada's Arctic Seas is no longer a necessary concern.

Despite the belief held by many researchers that democracies are more likely to promote higher levels of environmental quality at the federal level (Fredriksson et al. 2005; Lake & Baum 2001; McGuire & Olson 1996; Payne 1995), the onus of marine pollution protection and other forms of environmental quality conservation has increasingly been left to Canada's provinces, local communities and third sector NGOs in recent years. The rise of neo-liberal political agendas in both Canada and the United States has brought with it the rhetoric that state-centered problem-solving of society's ills is undesirable because the state lacks sufficient economic incentive to efficiently allocate resources (Gideon, 1996). Consequently, the policies advocated by neo-liberal politicians frequently result in cutbacks in public sector funding and support for many public good programs with the expectation that these voids in governance will be filled by other sectors of society.

In 2012, however, Canada severely tested the underlying neo-liberal rhetoric and justification for these environmental budget cuts by also attacking the funders of environmental NGOs. Recognizing that the front-line NGO activism opposing the Enbridge pipeline had received financial support, in part, through grants made by U.S.-based foundations, the Harper government attempted to reframe support for environmental conservation as an issue of national allegiance and foreign interference. As a changing climate grants greater access to the Northwest Passage and to Canada's Arctic marine resources, the precedent this has set must be one of

extreme insecurity for Canada's sparsely populated northern territories with no inherent jurisdiction with which to oppose federal power. International access to the Northwest Passage has long been viewed as an encroachment on Canadian national sovereignty. Thus, any challenge to federal actions or plans for this region has great potential to become part of this larger geopolitical discourse. Given this context, leveraging international support to mitigate the local impacts of federal policies may be exceedingly difficult for some Canadian Arctic communities.

In Nunavut, less than 35,000 people – the vast majority of whom are Inuit – occupy more than 725,000 square miles. Nunavut is also home to some of the most biologically productive Arctic marine regions in the world. Lancaster Sound, for example, sits just east of both the Northwest Passage and the 3,400 square kilometers of offshore oil and gas leases now held by Shell Oil (AANDC 2013). Once proposed as a UNESCO World Heritage Site due to the area's dense feeding aggregations of bowhead whales, narwhals, polar bears, seals and seabirds, Lancaster Sound now serves as an uncertain regulatory hot spot in the Canadian Arctic's ongoing contest between natural resource conservation and non-renewable resource extraction (Byers 2013).

Since 1987, much effort has gone into the attempt to designate Lancaster Sound a National Marine Conservation Area. In 2010, Ottawa outraged advocates of this effort by contracting with a German ship to complete seismic testing in the area as part of the conservation area feasibility study. An injunction, sought by the Qikiqtani Inuit Association (QIA), halted the seismic surveys and the QIA's conservation area planning projects continued – a number of which were funded by remarkably un-Canadian sources (Nunatsiaq News 2012). Surprisingly, Prince Albert of Monaco has not yet been condemned by the Canadian federal government for funding efforts to incorporate Inuit traditional knowledge and co-management models into Lancaster Sound's conservation efforts or for helping to fulfill the aspirations of Canada's integrated ocean management strategy.

Lancaster Sound is one of twelve sites that has been systematically advanced over the past two decades to fulfill the many domestic and international commitments Canada has made to establish a system of marine protected areas (MPAs). The UN Convention on Biological Diversity (1992), Canada's *Oceans Act* (1996), Canada's *Oceans Strategy* (2002), Canada's *Oceans Action Plan* (2005), Canada's *Health of the Oceans* funding (2007), and the 2010 CBD Conference of the Parties have all upheld Canada's promise to move forward with the protection of marine natural regions (Government of Canada 2011). Efforts did accelerate in 2011 to complete the reviews and MPA designations of these 12 priority areas. However, as Sabine Jessen (2013) warns "with cutbacks now to budgets at Fisheries and Oceans Canada, Environment Canada and Parks Canada, we are seriously concerned about the government's capacity to move ahead in creating and managing effective [MPAs]" (Jessen 2013). Indeed, both this lack of capacity and the evisceration of the Canada's Environmental Assessment Act in 2012 mark a radical departure from the cross-sector cooperative approach to marine resource governance that previously supported both MPA establishment and integrated ocean planning.

In the late 1990s, for example, Canada committed itself to the integrated management planning processes outlined in the *Oceans Act* through work undertaken as part of the Beaufort Sea Integrated Management Planning Initiative (BSIMPI). This period in time was marked by yet another industry ramp up of hydrocarbon exploration and development in the Mackenzie Delta-Beaufort Sea – an area which falls within the Inuvialuit Settlement Region of the Canadian

western Arctic. The concerns that surrounded these escalating development activities are very similar to those surrounding Lancaster Sound and many other areas of the circumpolar Arctic today. The Inuvialuit of the area struggled over the potential impact new development would have on their environment, food sources and way of life while at the same time welcoming the economic support that these activities might bring to their communities. At the same time, entrepreneurial hydrocarbon industries found themselves lost in what they felt to be the Arctic's ongoing blizzard of regulatory uncertainty and legal complexity.

In 2001, Inuvialuit management, industry and DFO put Canada's integrated management framework to the test. The BSIMPI Management Committee was organized to evaluate a proposal to establish a Marine Protected Area for an important Beluga whale aggregation area in the Beaufort Sea. The goal of this effort was the minimization of potential conflict between ocean-related activities and diverse resource users. In 2009, these early integrated management efforts culminated in the release of the Integrated Ocean Management Plan for the Beaufort Sea and the official announcement of the Tarium Niryutait Marine Protected Area in 2010.

Berkes et al. (2005) describe the level, depth and extent of the consultative process involved in the BSIMPI as "exceeding that of other consultative processes which had to date been conducted in the communities" (104). Indeed, the BSIMPI efforts - and those it would stimulate in the years to come - involved an intensive program of outreach and community building exercises within and across industry, members of the local community and the natural environment. Persistent cross-sector engagement was believed to have promoted trust, aided in the identification of alternative solutions acceptable to all parties, encouraged better definition of the issues and problems involved and increased the sense of ownership all parties maintained in the proposed plans and solutions (Berkes et al. 2005).

Today, the management context of the Beaufort Sea and the industry players pursuing development projects in and around the Tarium Niryutait MPA are both changing rapidly. A recent devolution agreement between Ottawa and the Northwest Territories is minimizing federal oversight of projects and NWT leaders have begun courting new South Korean and Chinese investors to fund resource extraction and export projects (Hussain 2013). In 2011, Korea Gas Corporation (Kogas) became a large new shareholder in the Umiak natural gas reserves on the northern edge of the Mackenzie River delta and have begun scoping Tuktoyaktuk - less than 12 miles from the Tarium Niryutait MPA - as a potential site for a new natural gas export terminal (Byers 2011). Voutier et al. (2008) have discussed how public participatory processes were again used in 2006 to address ongoing concerns within the Inuvialuit Settlement Region over the cumulative environmental and social impact of new development projects that have traditionally only been reviewed by government on a project by project basis. These efforts - resulting in the development of the Beaufort Sea Strategic Regional Plan of Action in 2007 - are believed to have laid the groundwork necessary for the balancing of regional socio-ecological values while also creating greater regulatory security for investment (Voutier et al. 2008).

With so many new and powerful interests taking the field and the high stake risks and expenditures involved in the Arctic's dynamic regulatory context, it is unclear whether the Inuvialuit Settlement Region's tradition of cross-sector collective action can persist. What is absolutely clear, however, is that, with the passage of the new Canadian Environmental Assessment Act (CEEA) in 2012, the Beaufort Sea's regional planning efforts have come just in

the nick of time. In Gibson's (2012) words, the new CEEA "eliminates most federal government involvement in environmental assessments and sharply curtails the scope and potential effectiveness of what remains" (179). The new CEEA legislation is anticipated to reduce the number of environmental assessments the federal government pursues each year from several thousand to a few hundred. The assessments that remain on the table will be undertaken – or not – at ministerial discretion and will offer little opportunity for the alteration of project plans. Almost all of the federal government's own projects will be exempted and no concern will be given to the cumulative impacts of individually exempted small projects grouped within the same geographic location (Gibson 2012).

Alternative environmental assessments may still be undertaken through provincial and territorial processes. However, it is unclear whether the capacity exists in many regions – particularly within First Nations communities – to take on this responsibility. Kirchoff et al. (2013), for example, have described how the impacts of CEEA changes are being further compounded by recent federal government funding cuts to Aboriginal Representative Organizations, "the primary mechanisms through which the federal government has been able to collaborate on issues affecting Aboriginal peoples" (9). Indeed, repealing provisions of Bill C-45 – the legislative vehicle responsible for authorizing the new CEEA as well as for weakening a number of other marine resource protection regulations – is at the top of the list of the indigenous movement's Idle No More campaign's calls for change (Idle No More, 2013). Changes to the CEEA are part of the complex of perceived attacks this entire bill has made on the sovereignty of Canada's indigenous peoples.

However, strict federal legislation mandating environmental assessment will not alone be sufficient to achieve cooperative co-management arrangements that allow for effective cross-sector use of the marine environment. In the United States, over forty years of legislative mandates – such as the National Environmental Policy Act (NEPA) and the Magnuson Fishery Conservation and Management Act – continue to systematize and formalize processes of Social and Environmental Impact Assessment in an effort to better inform planners and decision-makers of the potential outcomes of proposed projects, programs and policies. These requirements – including the acquisition of baseline data and trends, scoping of probable outcomes to proposed actions, and projections of estimated effects – fundamentally shape the architecture of resource management frameworks. However, these management technologies of hard science – particularly under conditions of risk and uncertainty – also run the risk of becoming what Foucault has called a "regime of truth", used by decision-makers in attempts to shield themselves from the fundamental political discourse each of those technologies abstractly represents (Foucault, as quoted in Scott 2012).

In the United States, current 'regimes of truth' still go to great lengths and expense to prioritize particular forms of inquiry and management practice. Scientists charged with ecosystem based management test and tinker with systematic and rational conceptual management frameworks while the complex issues facing these agencies have yet to become systematic and rational problems. Millions of dollars are spent on a handful of all-too-brief marine research cruises in the U.S. Arctic to capture data on physical and biological oceanographic conditions that, in the end, often fail to describe the seasonal pulse and pattern of an ecological system that is known intimately by local or indigenous residents. The rich empirical data captured by these cruises are

undeniably valuable. They are necessary and appropriate for integration into risk computations and political discourses surrounding important governance decisions at certain governance scales. However, both the data and the scales of governance to which they are directed often remain inherently unresponsive to the day-to-day survival needs of subsistence hunters and fishers or to the management of human well-being in small coastal communities where qualitative calculations of environmental change manifest themselves in descriptive place names, oral histories, and the cultural norms and practices rarely recognized or given value by the “usual” indicators of sustainable development or economic welfare.

As Karen Scott has discussed (2012), “in a policy world dominated by discourses of ‘hard’ evidence, policy actors have to back up their decisions with statistical evidence that represents the interests of all concerned as fully as possible” (8). Yet, ironically, the increasing wealth of hard evidence available to today’s decision-makers has not been shown to have an empirical linkage to substantive changes in policy or societal outcomes (Flyvbjerg 1998; Boulanger 2007; Rydin 2007; Rydin et al. 2003; Levett 1998; Cobb 2000; Innes 1990; Scott 2012). Indeed, given the high levels of uncertainty that hangs over predictive science and the vague probabilistic nature of risk assessments, it should not be surprising that socio-political factors drive most decisions and that science is instead used to shield decision-makers against the inherent challenges and difficulties of social debate, negotiation and collective action.

Resource managers in both the U.S. and Canada responsible for updating or developing plans to govern the proposed multi-sector use of marine environments are increasingly looking to environmental consulting firms to fill knowledge gaps and temporarily augment the institutional capacity of management agencies charged with fulfilling unique planning mandates. Many environmental consultant firms have, in the process, been tasked by their public sector clients with the independent development of indicators to describe environmental and coastal community well-being. Often, these consultant-derived indicator reports follow similar formats comprised of: (1) a literature review to identify widely used indicators, (2) a review of available community data and (3) a final suite of suggested indicators based on focus group contact with community members and/or other key informants. However, the treatment of these processes as technical exercises rather than substantive theoretical or social debates may not be sufficient to establish the necessary relevancy or significance within a community – or the specialized disciplines of resource management – to ensure meaningful long-term governance.

While expedient for the short 2-6 year time frames that set the rhythm of business for many political mandates, the data produced by these products is inherently limited and limiting. The sustainability, equity and human well-being issues involved in marine resource governance are no less complicated than those involved, for example, in the 20 year negotiation process which was required to produce the Yukon First Nation land claim agreement in Canada (Penikett 2006). This point is raised, not to promote lengthy and exhaustive deliberative processes, but to emphasize how oversized a task integrated socio-ecological system governance actually remains and how ill-equipped prescriptive formulas of inquiry based on small core data sets – or no data at all as now may be the case in Canada – may actually be in supporting current governance efforts.

Since the emergence of the Arctic Environmental Protection Strategy (AEPS) in 1989, the international community has undertaken considerable effort to conceptualize and design a new governance space for the Arctic. Arctic indigenous leaders have been engaged by nation states in novel forms of diplomacy and power-sharing arrangements. At the same time, however, unprecedented international attention has been given to identifying and gaining access to the Arctic's natural resources and further delineating the global suite of economic opportunities that will accompany ice-free regional access. Canada's complex political realities as well as a rapidly changing physical environment are – with increasing urgency – demanding that the members and managers of Arctic subsistence-based communities interact in new ways with western science, new strategic partners and new environmental management technologies to ensure the well-being of their people. However, as Greer and Harvey (2004) remind us, the “needs of the poor do not always conform with the goals of the powerful” (7). Aligning these needs and goals remains the true test of Canadian integrated ocean management.

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