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# OCEANS POLICY: A CANADIAN CASE STUDY\*

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## INTRODUCTION

Canada, as most other coastal nations, has, over the years, developed an intricate set of policies and regulatory instruments focused on the management of traditional sectoral uses of the oceans. A decade ago, the necessary steps were taken to modernize the way in which Canadian authorities manage ocean-based activities. Canada did not set out to design “one” comprehensive, all inclusive oceans policy. The primary approach taken was the identification, through Canada’s *Oceans Act*,<sup>1</sup> of one federal lead authority responsible for the coordination and harmonization of existing policy and statutory instruments and the formulation of a national vision and guiding principles for oceans management within which existing and emerging policies and laws would be interpreted and implemented.

This paper outlines the national statutory and policy instruments and Canada’s implementation approach to oceans management. The political and environmental context within which a new management approach was developed will be described as well as the processes which led to the development of the *Oceans Act*, its policy framework, Canada’s Oceans Strategy<sup>2</sup> and finally the government of Canada’s blue print for action, Canada’s Oceans Action Plan.<sup>3</sup> The relationship between key ocean-related agreements and Canadian domestic law and practice is summarized. In closing, lessons learned during the past decade will be examined as will the challenges which lie ahead.

## OCEAN POLICY CONTEXT, PROCESSES AND INSTITUTIONAL ARRANGEMENTS

### BASIC INFORMATION

Canada is a maritime nation which borders on the North Pacific, the Arctic and the North Atlantic oceans with marine areas covering a broad range of ocean climactic and oceanographic environments. Canada’s current oceans regions total almost 3 million km<sup>2</sup>,<sup>4</sup> and this will likely increase significantly once the extended continen-

tal shelf is delimited through the United Nations Convention on the Law of the Sea (LOSC) process.

Eight out of the ten provinces and all three territories border on oceans and approximately 24% of Canada’s population inhabits the coastal zone along a coastline which is one of the longest in the world at about 265, 523 km. The oceans provide the recreational, environmental,

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employment, income and cultural staples to over 7 million Canadians who live in coastal communities.<sup>5</sup>

Challenges in coastal and marine environments are being recognized by governments world-wide. Canada has, in the past, defined itself as fishing and shipping nation, with a long history and culture based on the rich productivity and diversity of its ocean resources. With the emergence of a number of other ocean-related industries, many of which vie for access to the same ocean space, the footprint of each industry and that of the sum of these activities have taken their toll on the environment resulting in:

- failing oceans health, including declining fish stocks, increasing numbers of marine species at risk and invasive species, declining biodiversity, and marine habitat loss;
- growing oceans user conflicts and administrative, jurisdictional and regulatory complexities; and,
- an oceans industry sector that is significantly weaker than its potential.

The marine areas which border Canada are vastly different from one another. The Pacific Coast of Canada is characterized by a relatively narrow continental shelf about 50 km in width and a very indented coastal area of bays, fjords with inlets, wetlands and estuaries. In addition to shipping, and Aboriginal, recreational and commercial fishing activities, the dominant industries include eco-tourism with an increasing focus on aquaculture in some areas of the coast.

The Atlantic coast has a much wider continental shelf. Offshore areas have traditionally supported extensive and varied fishing, marine transportation activities and increasing initiatives related to oil and gas, ecotourism and aquaculture activities.

The Arctic marine area along the northern coast of Canada and its archipelago is characterized by a broad shallow shelf and land fast ice. Transportation activities in the Arctic are largely seasonal and predominantly community-supply oriented. Land mining, oil and gas exploration, eco-tourism and subsistence harvesting all contribute to the marine-based northern economy.

Canada still has unresolved ocean boundaries.<sup>6</sup> In the Arctic, the offshore boundary in the Beaufort Sea between Alaska and the Yukon remains in dispute while Canada and Greenland (Denmark) have yet to settle the boundary in the Lincoln Sea. On the Pacific coast, Canada has maritime boundary issues with the United States in the

Dixon Entrance region (British Columbia – Alaska) and seaward of the Juan de Fuca Strait (British Columbia – Washington). In the Gulf of Maine on the Atlantic Coast, Canada and the United States continue to dispute the ownership of Machias Seal Island in the Bay of Fundy and jurisdiction over adjacent waters.<sup>7</sup>

Over the last 15 years, the oceans have been a dynamic growth sector for the Canadian economy, and currently generate over \$22 billion (2002 estimate) directly through ocean-related industries. Commercial fishing continues to make an annual contribution to Canada's oceans economy totaling \$2 B (harvest value), supplemented by a further \$1 B from the fish processing industry. Employment in aquaculture has grown by over 460% and the value of fish farm production has increased by more than 500%. Offshore oil and gas production has increased in annual investment value over the past decade from \$250 M to \$5 B. Employment in the oil and gas sector now represents 4.0% of the overall oceans industry compared to past levels of 0.3%. Recreation and tourism has grown by over 33% in the past decade despite a drop in the number of recreational anglers. There has been major growth in both coastal tourism (156%) and cruise ship tourism (176% in the number of passengers); and although tourism still remains a relatively small contributor to the oceans economy, it is increasing in its influence. The predictions for growth in the ocean sector are also significant. As a maritime nation, Canada has a significant and vibrant shipping industry. Eighty-five billion dollars worth of goods and commodities moved through Canada's national marine transportation industry in 1998.<sup>8</sup>

Aboriginal communities have the longest history of coastal occupancy. Coastal Aboriginal cultures are tied to oceans resources for food, social and ceremonial reasons. Commerce between First Nations and after contact between Aboriginal communities and Europeans were often based on oceans activities or resources.

Canada is a confederation of ten provinces and three northern territories. Federal jurisdiction extends to marine navigation and shipping, international affairs, defense, environmental protection as well as the protection of living resources within offshore areas.<sup>9</sup> Provinces, the sub-national authorities within Canada, may also exert jurisdiction over some offshore waters. In general, provinces own and manage the seabed within the coastal inter-tidal area. Provinces have constitutional authority over property and civil rights within the Province pursuant to Section 92(13) of the *Constitution Act, 1867*.<sup>10</sup> Canadian case law has recognized two legal foundations for provincial offshore jurisdiction, marine areas considered *inter fauces terrae* (between the jaws of land) and marine areas con-

sidered to be part of a province at the time of confederation.<sup>11</sup>

Management of activities within Canadian marine waters has developed on a sector or regional basis and is therefore diverse and lacks a cohesive approach. For example, there are ten major and thirteen minor federal agencies that have mandates that impact on oceans. There are roughly fifty federal statutes directly impacting ocean-related activities and more than 80 provincial laws that affect coastal and marine planning<sup>12</sup>

In addition to this legislated division of power, Canada sets as a high priority its constitutional obligations to Aboriginal peoples. The *Constitution Act, 1982* recognizes and affirms existing Aboriginal and treaty rights.<sup>13</sup> Where land claim agreements have been settled and include specific resource management responsibilities and commitments by the federal government to co-operate and collaborate with the signatories, the situation is clear. In many cases, however, claims which may impact on ocean areas have not yet been settled and interim arrangements which do not prejudice the outcomes of land claims discussions are in place, being developed or needed.<sup>14</sup>

The *Oceans Act* contains an explicit provision to provide certainty that it does not abrogate or derogate from existing Aboriginal and treaty rights. This provision sets out the framework for the relationship of *Oceans Act* program and activities with Aboriginal authorities. While integrated planning and the development of Marine Protected Areas are without prejudice to rights and title; the involvement and support of Aboriginal peoples, where their interests are potentially affected is clearly required. Many coastal communities of and by themselves have large Aboriginal populations and in some areas, specific arrangements respecting harvesting and co-management aspects have been made with Aboriginal authorities.

The importance of the oceans to the federal, provincial First Nation, municipal and local communities, stakeholder and interest groups requires engagement of these interests in setting priorities and planning oceans activities.

It is this context which informed the development of an *Oceans Act*. The federal Department of Fisheries and Oceans is the lead federal agency responsible for the coordination of both domestic and international oceans policy. This mandate is in addition to more traditional marine responsibilities related to the management of Aboriginal, commercial and recreational fisheries, marine safety and communication and environmental response and the provision of marine scientific advice and research.

## BRIEF OVERVIEW OF NATURE AND EVOLUTION OF NATIONAL OCEANS POLICY

Although the development of a national oceans policy and legislation was first proposed in 1987,<sup>15</sup> the first steps towards the elaboration of a national oceans policy for Canada were taken when the Government of Canada, in 1996 enacted the *Oceans Act*, a statute which formalizes, in a comprehensive way, how Canada's oceans are to be defined and managed.

The *Oceans Act* lays the foundation for the oceans policy by committing to a number of principles and is structured to delineate the geographic area over which Canada intends to apply its ocean management approach. The Act defines the guiding principles of integrated management, sustainable development and precautionary approach, provides the mandate to develop and implement programs to implement these principles and finally situates the existing regulatory and management authorities of the Department of Fisheries and Oceans within the context of oceans management. The Act recognizes other mandated authorities and provides guidance on how these mandates should be delivered within the marine environment.

The development and review of the *Oceans Act* through the public and parliamentary process was complemented by a broad public consultation process which led to Canada's Oceans Strategy, the over-arching oceans policy framework for the integrated management of Canada's oceans.<sup>16</sup> During the 5 years immediately following the proclamation of the *Oceans Act*, the ocean management programs outlined in the *Oceans Act* were piloted in the field to better define the policy guidance required and inform the development of the federal Oceans Action Plan.

Flowing from the political commitment in the 2004 Speech from the Throne<sup>17</sup> and the 2005 Budget Speech,<sup>18</sup> the Oceans Action Plan outlines and funds priority areas for action under four major themes, namely: International Leadership, Sovereignty and Security; Integrated Oceans Management for Sustainable Development; Health of the Oceans; and Science and Technology.

## POLICY DEVELOPMENT PROCESSES

In Canada, the development of an oceans policy has been and continues to be an evolutionary process. In 1994, the National Advisory Board on Science and Technology, following extensive public consultations, recom-

mended to the Prime Minister that Canada move decisively to address environmental issues confronting oceanic areas and maximize the economic benefits that could be derived by managing ocean resources more sustainably.<sup>19</sup> Specific recommendations focused on the need to develop a national policy as well as legislation focused on the management of ocean and coastal spaces and resources.

Although similar calls had been made in the past, there was, at this time a convergence of domestic and international fishing and pollution issues primarily in the North Atlantic that served to focus public as well as political interest.<sup>20</sup> As a result of this heightened profile, drafting of a comprehensive *Oceans Act* was initiated and the Act came into force on January 31, 1997.

## THE OCEANS ACT

Architecturally, the Act has three parts, which provide the necessary infrastructure to move forward with a modern oceans governance framework

Part One of the Act recognizes Canada's maritime zones and commits the Government of Canada to meeting its conservation and management responsibilities within these marine areas. Consistent with the terms of the United Nations Convention on the Law of the Sea, Canada has defined its territorial sea, contiguous zone, exclusive economic zone and continental shelf excluding the outermost extent. Canada is in the process of delimiting the outer extent of the continental shelf and intends to make a submission to the UN Commission for the Limits of the Continental Shelf within the required deadline.

Part Two of the Act provides the Minister of Fisheries and Oceans with specific policy and program authorities to implement Canada's approach to oceans management in estuarine, coastal and marine ecosystems. Section 29, of the *Oceans Act*, provides for the development of a national strategy, "Canada's Oceans Strategy" which constitutes the policy framework for modern oceans management and serves as guidance for the development and updating of sector based policies and processes. The Act calls upon the Minister to develop this strategy in collaboration with federal colleagues, provincial and territorial governments, affected Aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements. Finally, the Act includes provisions for the development of three specific program areas: 1) marine protected areas; 2) marine environmental quality; and 3) integrated management plans. These programs are the key tools to implement the national ocean policy objectives:

Understanding and Protecting the Marine Environment; Supporting Sustainable Economic Opportunities; and International Leadership.

Part Three of the *Oceans Act* sets out the accountabilities for the Act. It identifies the Minister of Fisheries and Oceans as the lead federal authority responsible for oceans management within Canada, and situates the existing resource management, scientific, hydrographic, coast guard and other responsibilities of the Department within an oceans management context.

Following adoption of the *Oceans Act*, the department re-allocated modest funds to support the implementation of the Act by initiating pilot work and by developing Canada's Oceans Strategy in consultation with Canadians.

Pilot projects were selected based on feasibility criteria including the complexity of the ocean issues involved, the receptivity of potential partners, the level of scientific information available and the conservation imperatives of the area. Projects included: identification of Areas of Interest for Marine Protected Areas; integrated management pilots for the offshore area around the Sable Gully Marine Protected Area of Interest and around the proposed Marine Protected Area in the Beaufort Sea, as well as other integrated management pilots including the Central Coast of British Columbia. The pilot Integrated Management and Marine Protected Areas provided lessons learned with respect to policy integration, the building of relationships, the development of the governance structures and related arrangements.

The policy development process continued its course with two public engagement and consultation processes, one, focused on the Vision for the Oceans Act; the other a structured consultation on Canada's Oceans Strategy and designed to solicit federal, provincial, First Nation and public input. Over a period of five years, the department engaged the views and perspectives of Canadians by supporting a wide range of discussions, workshops and consultation activities across the country.

## CANADA'S OCEANS STRATEGY

Canada's Oceans Strategy and its companion Integrated Management and Operational Framework<sup>21</sup> were released in 2002 following formal federal, provincial, territorial, Aboriginal and public consultations. Presented to Cabinet, the Strategy received Government endorsement and became the basis upon which federal activities were to be conducted in marine waters.

The release of the Canada's Oceans Strategy as a policy of the Government of Canada set out the achievement of its objectives as a shared responsibility for all federal departments with an oceans mandate.

The following fundamental principles are set out in the *Oceans Act* and Canada's Oceans Strategy:

- *Integrated Management*: plan and manage human activities impacting on oceans in a comprehensive fashion while considering all factors necessary for the conservation and sustainable use of marine resources and the shared use of ocean space;
- *Sustainable Development*: integrate social, economic and environmental aspects of decision-making;
- *Precautionary Approach*: err on the side of caution in making management decisions.

*Integrated Management* is a spatially-based planning process that results in common understanding of ecosystem and human activity objectives on the part of regulators, stakeholders and interested parties and the production of an "integrated management plan" for a geographic area.<sup>22</sup> The plan provides a framework to conduct activities, to develop and implement integrated and adaptive management strategies and actions. The plans are based on the recognition that integrated management planning must occur in an ecosystem context for the decisions to be environmentally sound and ocean activities sustainable.

Canada's Oceans Strategy commits the Government to: work collaboratively within the federal government, and among levels of government; share responsibility for achieving common objectives; and engage Canadians in ocean-related decisions in which they have a stake. Integrated management planning includes the establishment of institutional governance mechanisms as a cornerstone of the national oceans approach. This integration is not limited to policies and legislative authorities which oversee the management of oceans activities, its main reality lies in the planning and management of activities on a geographic basis.

Integration is required to achieve *sustainable development*, which in itself requires that conservation issues be addressed and that economic diversification and multiple uses be recognized as legitimate objectives to be striven for. The ability to adapt management decisions to reflect new scientific and technical developments, changing economic and social objectives and to respond to positive or

negative environmental responses is key to achieving the principles of integrated management and sustainable development.

*The Precautionary Approach* should be followed as part of the decision-making process for integrated management. When there is a risk of serious or irreversible harm and there is significant scientific uncertainty, then decisions and management options will err on the side caution. Within the context of oceans management, application of the precautionary principle is inextricably linked to two other concepts; an ecosystem-based and science-based approach to decision-making.<sup>23</sup>

*The Ecosystem-based Approach* relies on the identification of ecosystem objectives that together with social and economic objectives form the basis for integrated management planning and related decision making. These ecosystem objectives are based on an assessment of ecological information and an evaluation of the risk posed to ecosystem structure and function, based both on the available information and uncertainties. In this way, the risks of uncertainty are incorporated into decisions and are managed into the future through adaptive management

## INSTITUTIONAL ARRANGEMENTS AND PROCESSES USED

Following Prime Ministerial acceptance of the National Advisory Board on Science and Technology on Oceans and Coasts' recommendation that Canada formulate an overall Oceans Policy Framework and develop ocean-focused legislation, a Ministerial Vision Paper on oceans management was released.<sup>24</sup>

Public comments on the Vision Paper served to form the basis of the draft legislation. While parliamentary procedures do not allow for public review of draft legislation, information sessions outlining the intent of the legislation were held. The normal parliamentary consultation procedures which involve formal publication of draft legislation by the House of Commons, as well as targeted consultations with affected parties were conducted. Witnesses to the Parliamentary Review Process, including potentially affected stakeholders, environmental non-government organizations, Aboriginal authorities, coastal communities and academics served to broaden the scope of the Act.

The Department of Fisheries and Oceans (DFO) also led the development of Canada's Oceans Strategy incor-

porating the lessons learned from the pilot application of the *Oceans Act* Program and the views expressed during public engagement processes. Policy development entailed consulting a range of governmental and non-governmental stakeholders and using different mechanisms to connect with sub-national and Aboriginal authorities and the academic community. Since 1997, the department has engaged the views and perspectives of Canadians by supporting a wide range of discussions, workshops and consultation activities, across the country including: a public discussion document, “Towards an Oceans Strategy”<sup>25</sup>; an interactive website; public opinion polls and research; an international conference on Oceans Stewardship;<sup>26</sup> international workshops on integrated management, cross-country consultation sessions; the establishment and use of a Minister’s Advisory Council on

Oceans<sup>27</sup>; and, a national oceans discussion series in cooperation with the Canadian Broadcasting Corporation. Bilateral meetings were conducted with key national stakeholders including environmental NGOs, and the main Aboriginal organizations.

The development of a national oceans policy therefore involved a mix of legislation, policy development, pilot projects and relationship building. While legislation and policy development take place at the national level in federal departments such as DFO, coordination and collaboration are required at many levels to create the environment and tools to implement such a horizontal collaborative initiative. Governance arrangements and processes are described below, and Table 1 gives an indication of the complexity of the relationships required.

**Table 1.** National, sub-national and local oceans governance structures and agreements

Examples of Governance Structures				Examples of Agreements
	National	Sub-national	Local	
International	Membership in international committees councils and science organizations, including Regional Fisheries Management Organizations, Arctic Council, APEC, IMO, IOC			
Other Government Departments (OGD)	Deputy Ministers Committee Support committees	Sub-national Implementation Committees	OGD planning or regulatory processes	National Marine Protected Area Strategy
Provinces and Territories	Canadian Council of Fisheries and Aquaculture Ministers Oceans Task Group	ESSIM Regional Oceans Mgmt Committee	Lead on coastal planning	Can/BC MOU Canada/Quebec St. Lawrence Action Plan
Aboriginal		Region-specific Aboriginal management body to support West Coast LOMA	Planning process/ Traditional Ecological Knowledge Consultation	Turning Point Agreement (Canada-First Nations agreement relating to Pacific LOMA)

Stakeholders				
Local communities	Sub-national Implementation Committees	Advisory/ Planning process		
Industry stakeholders	Sub-national Implementation Committees	Advisory/ Planning process		Ocean Management Research Network Canadian Association of Petroleum Producers /draft seismic regulations
Oceans Interest groups	Sub-national Implementation Committees	Advisory/ Planning process		Membership on Canadian delegations

In 2001, federal, provincial and territorial Ministers agreed that an Oceans Task Group would be established under the aegis of the Canadian Council of Fisheries and Aquaculture Ministers to help develop and implement Canada's Oceans Strategy. This Task Group continues to provide a forum for federal provincial issues on oceans management.

A Minister's Advisory Council on Oceans was also established in 2001 for a three year term to provide advice on ocean management policy issues and to help engage the public and sectors in issues related to oceans management. The Council consisted of nine individuals from diverse backgrounds representing a range of interests, including Aboriginal, industry and academic and as such was instrumental in increasing public understanding and awareness of the nature and intent of Canada's ocean management approach.

Further, to foster scientific understanding necessary to support ocean management policy and to bridge the gap between natural and social sciences, an Oceans Management Research Network was established as a joint initiative between the Social Science and Humanities Research Council (SSHRC) and the Department of Fisheries and Oceans in 2001. The Research Network creates a national network of interdisciplinary and cross-sectoral research working groups to create knowledge and best practices for sustainable oceans management.<sup>28</sup>

To aid federal government coordination and input to ocean policy development, a system of interdepartmental committees for oceans were established at the Deputy Minister, Assistant Deputy Minister and program levels. Four interdepartmental working groups focused on the four "pillars" set out in the Oceans Action Plan: namely; International Leadership, Sovereignty and Security; Integrated Oceans Management for Sustainable Development; Health of the Oceans; and, Oceans Science and Technology.

The call to advance modern ocean management in the Speech from the Throne in 2004 and the 2005 Budget Speech, and the designation by the Prime Minister of a Parliamentary Secretary to support implementation of the Oceans Action Plan provided the high-level profile and the political pressure necessary to secure the funding needed for a government-wide initiative. This resulted in the Oceans Action Plan Phase 1, currently being implemented. Phase 1 will provide the demonstration, direction and rationale for longer term government investment in oceans management, currently under development for Phase 2.

Overall, the various governance mechanisms and agreements have been effective in developing a policy framework and action plan that reflects a range of stakeholder interests and has been endorsed at the highest levels of government.

## NATURE OF THE POLICY AND LEGISLATION ESTABLISHED

### NATURE OF THE RESULTING POLICY

The *Oceans Act* is enabling legislation, designed to provide the Minister of Fisheries and Oceans with the tool to focus current federal legislative and policies tools to work more horizontally and concentrate efforts in specific geographic areas. It is this aspect of the legislation which is the most challenging to implement in that willing partners are needed to advance ocean management. Inter-governmental agreements have been required as well as negotiations with industry and Aboriginal authorities in order to set the stage to move forward. Implementation of *Oceans Act* program has moved at different paces in different areas. As lead and facilitator, the Department of Fisheries and Oceans has had to concentrate on building the relationships while at the same time developing the science-based tools and fostering the governance arrangements needed to incorporate the values and interests of others.

The *Oceans Act* and the Oceans Policy Framework do not supersede nor fetter other policies or statutes, but provide context within which other ocean related mandates should operate. On this basis, both the Act and the Strategy provide the broad framework to guide further federal policy development to work with other levels of government and provide new context within which to interpret older policies. Together, they provide the principles and key tools to implement modern oceans governance, within which existing policies and statutes and traditional relationships between regulators and their traditional "clients" may operate. As the guiding principles such as precaution and adaptive management are interpreted and utilized in integrated management planning, they will be integrated into new sectoral policies. Since the building blocks of Canada's oceans policy framework and the associated implementation programs are solidly anchored on precaution, ecosystem-based management, and sus-

tainable development, these principles are by definition imbedded in decisions that will be taken within the integrated management planning areas.

## IMPLEMENTATION OF PRINCIPLES

In Canada, an ecologically-based framework to guide the development of integrated management plans has been developed. The integrated management planning framework extends from the large to the small scale, i.e., from Large Ocean Management Areas (LOMAs) to Coastal Management Areas (CMAs). The Canadian approach to integrated management recognizes that management objectives and planning practices must reflect that ecosystems nest within other ecosystems. Governance structures, practices and decisions respecting resource and activities management are made with explicit consideration of ecosystem impact. As such, the precautionary approach is built into integrated management through the identification of ecosystem objectives which activities must respect within specified planning areas. A brief review of Canada's incorporation of the principles of ecosystem-based management, integrated management, the precautionary approach and public participation and community-based management follows.

### ECOSYSTEM-BASED MANAGEMENT

The *Oceans Act* states that "conservation, based on an ecosystem approach, is of fundamental importance to maintaining biological diversity and productivity in the marine environment." An ecosystem-based approach to management recognizes that human activities must be managed in consideration of the interrelationships between organisms, their habitats and the physical environment, based on the best science available. It further holds that human activities should be managed such that marine ecosystems, their structure (e.g. biological diversity), function (e.g. productivity) and overall environmental quality (e.g. water and habitat quality), are not compromised and are maintained at an appropriate temporal and spatial scales. It is in these key areas that ecosystem objectives will be set for each of the integrated management areas.<sup>29</sup>

Significant domestic and international efforts have been invested in making this principle operational.<sup>1</sup> In 2001, Canada held a scientific workshop to develop a preliminary framework which had conservation of species and habitats and the sustainability of human use as the two over-arching objectives.<sup>2</sup> Work has continued in Canada and internationally to further refine the initial objectives

identified at Dunsmuir. Three overarching ecosystem objectives have been identified: maintain populations, species and communities within bounds of natural variability; conserve the function of each component of the ecosystem so that it can play its natural role in the food web; and, conserve the physical and chemical properties of the ecosystem. This work has resulted in the development of a process and tools to apply ecosystem-based management to decision-making within Canada's Large Ocean Management Areas.

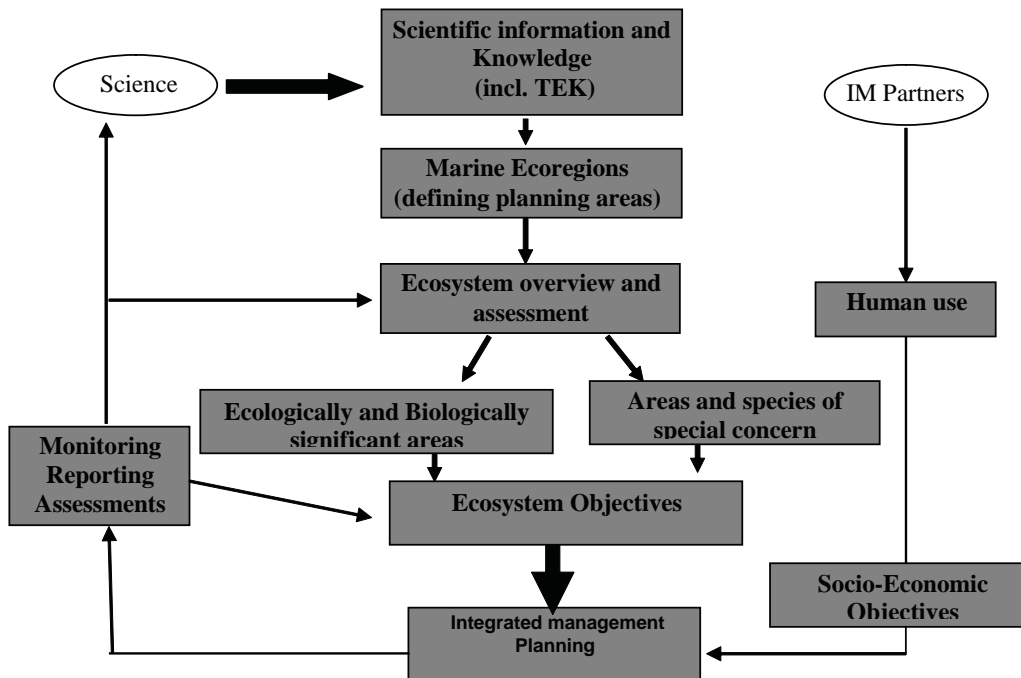
Implementation of ecosystem-based management begins with the identification of marine ecoregions based on ecological features and functions.<sup>3</sup> Existing scientific and traditional information on the state and condition of the ecosystem bound within the planning area is then collected and a science based review of that information and an evaluation of the risks posed to ecosystem structure and function conducted. As a result of the review and evaluation of known scientific information, ecologically and biologically significant areas and species of special concern, are identified.<sup>4</sup>

Ecosystem-based management objectives and reference levels are defined for each of these ecoregions and specific management measures defined to achieve the ecological objectives.<sup>5</sup> When a particular event or activity in an ecosystem causes a reference level to be exceeded, this will trigger a management response. Figure 1 outlines the process used in Canada to apply an ecosystem-based approach to integrated oceans management.

It is important to reiterate that integrated management is a means to achieve an end- the sustainable management of ocean resources and spaces. For this reason, Canada's integrated management processes are designed to initially identify ecological objectives which must be respected by any activity wishing to operate in the planning area if the ecosystem is to continue to function and sustain the pressures of resource extraction and other ocean use. Once the "ecological operating limits" are defined, the Canadian integrated management process focuses on the identification of social and economic objectives which sub-national and local governments, stakeholders and public wish to achieve in the planning area.

Ecosystem considerations are being incorporated into fisheries management policies, plans and practices. For example, in Canadian waters where relatively unique and highly sensitive marine ecosystems are known to exist, and where there is scientific evidence that fishing practices are having a long-term adverse effect on the ecosystem, action has been taken to mitigate these effects through

Figure 1. Development of ecosystem-based management objectives to support integrated management planning



the application of management measures which may include:

- fishing gear modifications, mesh and hook size considerations, and other measures to ensure that fishing practices conform to specific habitat conservation requirements;
- application of seasonal and area fishing closures if impacts cannot be mitigated;
- establishment of Marine Protected Areas where long-term protection measures cannot be adequately addressed through fishing closures and other measures; and
- monitoring of the area for compliance and management effectiveness.

Because ecosystems do not respect political or administrative boundaries it has been important to give effect to the concept of collaborative planning and management systems. Domestic decision-making across ecosystems will be connected by the participation of federal, provincial, territorial, Aboriginal and local authorities and programs. The Minister has the option to use bilateral agreements with provinces/territories and co-management arrangements with Aboriginal groups to assist in implementation and the achievement of ecosystem objectives. For example, in 2004, Canada and British Columbia signed a memorandum of understanding on implementation of Canada’s Oceans Strategy with a commitment to develop

sub-agreements focused on integrated management, marine protected areas and information sharing.

Ecosystem-based management objectives for Large Oceans Management Areas are set at an ecosystem or broad ecoregion scale. Integrated management planning units and sectoral management plans nested within these areas do not necessarily correspond to an entire ecoregion. Consequently, the *Oceans Act* provides the authority to set marine environmental quality guidelines, requirements and standards which can be specific to one particular planning area, but which complement the broader scale ecosystem objectives. Monitoring programs tied to the ecoregion level ecosystem objectives and the marine environmental quality targets linked to specific management plans provide a mechanism for tracking change over time and triggering management action.

INTEGRATED MANAGEMENT

Recognizing that integration must carry over to the planning of conservation areas as well, the *Oceans Act* calls for the Minister of Fisheries and Oceans to lead and coordinate the development and implementation of a national system of marine protected areas on behalf of the Government of Canada.<sup>1</sup> Three federal agencies are mandated to establish federal marine protected areas, and provincial authorities also are active in protecting areas within their areas of jurisdiction.<sup>2</sup> To maximize the effectiveness of federal intervention and ensure that the appropri-

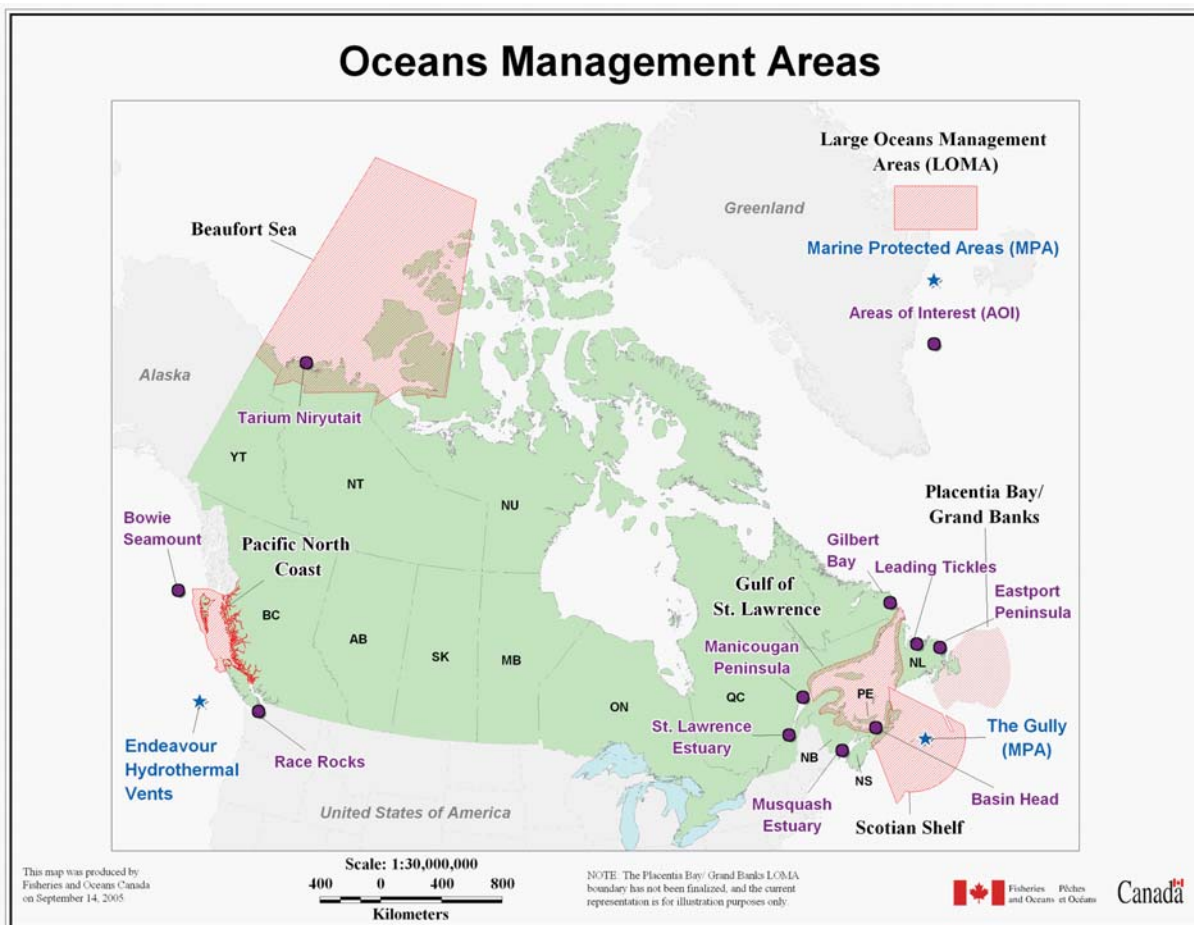
ate tools is being used, DFO in collaboration with other federal departments has developed a Federal Marine Protected Area Strategy to achieve a national network of marine protected areas.<sup>3</sup> Efforts to achieve a similar network with provincial authorities are focused on the development of federal provincial collaboration agreements and their direct involvement in the five integrated management priority areas within which ecologically and biologically sensitive areas are being identified.

As part of the Oceans Action Plan, implementation of integrated management is being focused in five priority geographic areas where mandated federal, provincial, territorial and Aboriginal authorities are working cooperatively to develop integrated ocean management plans. These priority integrated management areas are: Placentia Bay/Grand Banks, off of Newfoundland; the Scotian Shelf off of Nova Scotia; the Beaufort Sea in the Western Arctic; the Gulf of St Lawrence; and the Queen Charlotte Basin off British Columbia. (Figure 2)

Activities undertaken within each of the planning areas include: the assessment and overview of the state of health of marine ecosystems which provide mandated authorities and stakeholders with information on marine and coastal ecosystems and recommendations to support planning and management decisions. Mapping of the seabed is being conducted to better characterize benthic habitats, define bottom communities and support identification of the most appropriate management actions. Areas and spaces in need of special management and or conservation measures are also being identified. Governance arrangements to foster federal, provincial, territorial and Aboriginal collaboration are being established. Fora to engage citizens and stakeholders are also being established.

While some of these activities are already well advanced in some of the priority Large Ocean Management Areas due to previous federal investments and efforts, the influx of additional funds and the strict accountabil-

**Figure 2.** Priority Integrated Management Planning areas and Oceans Act Marine Protected Areas and Areas of Interest.



ity attached to the special budget allocation will ensure that the actions identified in the Oceans Action Plan will be undertaken within a prescribed period of time. For example, the Eastern Scotian Shelf is the furthest advanced of the Large Oceans Management Areas with the Integrated Management Plan in draft for public consultation.

<sup>1</sup> Other areas, such as the Pacific North Coast area and the Gulf of St. Lawrence are currently focused on developing Ecosystem Objectives. The Placentia Bay/Grand Banks initiative and the Beaufort Sea are still in the information collecting, or Ecosystem Overview Report phase.

Integrated management is more than the development of spatially-based management plans. Effective management requires integration at a variety of levels. There are numerous examples of spatial integration where efforts between provincial authorities responsible for land-based issues and intertidal seabed and federal authorities responsible for overlying waters and resources are being coordinated to establish the necessary protection measures on land and in coastal waters to achieve the objectives of coastal marine protected areas.

There are numerous opportunities for science and spatial co-location of federal and provincial science programs in the five geographic areas; a primary example is the targeted use of seabed mapping using side scan sonar to support integrated management within the priority areas while still addressing the primary agency's geological mandate. A further example is provided by the development of the federal Marine Protected Area Strategy by the three federal agencies with marine protected mandates, to establish a network of marine protected areas; to integrate information; engage public interests and determine the best means to achieving the objectives of the Marine Protected Area.

Integration among sectors is multifaceted, with the newest example being the establishment of One Ocean, a stakeholder driven information and public education group established in Newfoundland by leaders in the oil and gas industry and the fishing industry to resolve issues of common concern through informal interventions and information exchanges.

Canada is also working with the United States and the Intergovernmental Oceanographic Commission (IOC) to develop a handbook on the identification and use of governance, socio-economic and ecological objectives and related indicators to measure the effectiveness on integrated coastal and oceans management.<sup>2</sup>

## PRECAUTIONARY APPROACH

Canada has recognized the importance of a precautionary approach in key legislation and policy documents. The preamble to the *Oceans Act* calls for a precautionary approach to marine resources management, while s. 30 of the Act mandates that Canada's national oceans strategy be founded on the principles of sustainable development, integrated management and the precautionary approach.

Other Canadian legislation also incorporates the precautionary approach. The *Canadian Environmental Protection Act, 1999* (CEPA)<sup>3</sup>, for example, requires that administrative decisions under the Act, such as whether to allow new chemical substances into Canada, follows the precautionary principle. The Act also encourages pollution prevention approaches. The *Canadian Environmental Assessment Act* (CEAA),<sup>4</sup> through 2003 amendments,<sup>5</sup> embeds precaution as a fundamental purpose.

Through an interdepartmental consultation process, Canada has developed guiding principles to be followed by departments/agencies in applying precaution. The *Framework for the Application of Precaution in Science-based Decision Making about Risk*,<sup>6</sup> issued in 2003, is broad and by force of its applicable to all federal mandates. It is, however, only one element which guides implementation of the precautionary approach. In oceans management, the primary guidance for the precautionary approach remains *Canada's Oceans Strategy* and in more detail, the Policy and Operational Framework for Integrated Management which specifies that priority will be given to maintaining ecosystem health and integrity especially in the case of uncertainty. The Department of Fisheries and Oceans' *Aquaculture Policy Framework* also notes the need for aquaculture development to occur in the context of a precautionary approach.<sup>7</sup> More recent DFO policies such as, the Wild Salmon Policy<sup>8</sup>, New Emerging Fisheries Policy<sup>9</sup>, and the development of an ecosystem-based model for Recovery Strategy development for endangered and threatened species all require reference to ecosystem considerations and uncertainty.<sup>10</sup>

Much work remains for all levels of government in working out the application of precaution with laws varying between strong and weak versions. Canada has adopted a strong precautionary approach to ocean dumping through a "reverse listing" approach where only wastes on an acceptable list may be disposed of at sea. Recently proposed regulations to reduce the risk of harmful aquatic species being introduced into Canadian waters through ship ballast water are arguably another example of strong

application of precaution.<sup>11</sup> The regulations prescribe management measures for ballast water, requiring exchange at least 200nm from shore and in water depths greater than 2000m before entering Canadian waters. Emergency ballast exchange within Canadian waters is also restricted to specific zones identified based on lowest ecological risk factor. Although the *Fisheries Act*<sup>12</sup> prohibits the deposit of deleterious substances into waters frequented by fish, discharge standards for six major industries, including pulp and paper mills and petroleum refineries, are set in regulations which do not explicitly emphasize pollution prevention and precaution. Canada is also party to various international bodies, working groups, regional fisheries management and international scientific organizations where the precautionary approach continues to evolve and implementation tools developed for fisheries.<sup>13</sup>

Tensions have arisen in Canada over how the precautionary principle / approach should be applied.<sup>14</sup> For example, concerns have been raised with respect to the potential risks associated with escapees and possible spread of parasites from finfish aquaculture operations. There have been calls for the removal of existing open pen salmon farms and prohibition of new farms.<sup>15</sup> Instead of a prohibitory approach to precaution, governments have responded with various regulatory and licensing controls to mitigate the impact of fish farms including mandatory monitoring programs with specific intervention measures.<sup>16</sup>

The Supreme Court of Canada has opened the legal door for Canadian courts to review administrative decisions in light of adherence to the precautionary principle. In the 2001 *Spraytech* case<sup>17</sup> Justice L'Heureux-Dubé referred to the precautionary principle's wide acceptance in international law and policy and relied on the principle to help justify a broad interpretation of provincial legislation as authorizing municipalities to regulate pesticides. She recognized that the values and principles reflected in international law may help inform the contextual approach to statutory interpretation and judicial review.<sup>18</sup>

#### PUBLIC PARTICIPATION AND COMMUNITY-BASED MANAGEMENT

Canadian ocean management policy clearly indicates a commitment to citizen engagement. The overall objective is to create governance mechanisms that foster a greater involvement of the people most affected by decisions. Large Ocean Management Areas primarily address large-scale ecosystem and economic development issues; they also provide the context for nesting a network of

smaller Coastal Management Areas or other ocean management tools such as Marine Protected Areas.

Participants in ocean and coastal management are clearly identified, including the federal government, provincial/territorial/local authorities, Aboriginal organizations and communities, industry, NGOs, community groups, and the academic/science/research community. In keeping with the enabling (rather than directive) and collaborative nature of the *Oceans Act*, oceans management programs in Canada clearly direct and enable community involvement in the design and management of integrated management plans and Marine Protected Areas.<sup>19</sup>

Coastal Management Areas enable communities to play a stronger role in issues affecting their future by matching local capabilities and development priorities to the opportunities and carrying capacities of the local ecosystem. Local economic issues such as in-shore fisheries, conventional tourism and ecotourism, aquaculture sites, ports and other transportation facilities may all be matters considered. Local community groups and individuals play essential roles in helping to understand the management area and issues, ensuring that the planning process and associated actions are relevant to the area, and providing "on the ground" expertise and capacity for plan implementation, monitoring and compliance promotion.

#### AUTHORITY AT NATIONAL LEVEL

In addition to leading and facilitating the development and implementation of an oceans management strategy, the Minister of Fisheries and Oceans is authorized to:

- coordinate the activities of ocean stakeholders to develop a strategy;
- develop tools and coordinate with stakeholders the development of specific plans to implement the strategy;
- develop integrated management plans for all Canadian marine waters;
- establish, as required, sub-national and local bodies to assist with the implementation plans;
- establish and enforce measures/regulations associated with marine protected areas; and,
- develop marine environmental quality guidelines.

In the Speech from the Throne of October 2004, the Government of Canada made better management of its ocean spaces and resources a government wide priority

and called for the development of “an Oceans Action Plan by maximizing the use and development of oceans technology, establishing a network of marine protected areas, implementing integrated management plans and enhancing the enforcement of rules governing oceans and fisheries, including rules governing straddling fish stocks”. The Government also made a significant investment on strengthening initiatives related to international fisheries and oceans governance which are focused on improving

compliance in NAFO, creating conditions for change and strengthening global fisheries and oceans governance.

With the endorsement of the Government wide Oceans Action Plan, 7 federal departments are now responsible for the delivery of specific elements of this national work plan, ranging from international coordination, completion of ecosystem overview reports, governance arrangements to seabed mapping.

Oceans Action Plan Phase 1 Initiative	Key Activities
<b>International Leadership, Sovereignty and Security</b>	
1. Gulf of Maine Canada-US Collaboration	Joint Ecosystem Overview and objective setting for integrated management planning

2. Arctic Marine Strategic Plan	Eight countries address key issues in circumpolar Arctic via the Working Group for the Protection of the Arctic Marine Environment (PAME) of the Arctic Council
3. International Fisheries and Oceans Governance	Ecosystemic research with a focus on the Grand Banks Appointment of an Ambassador for Fisheries Conservation Strengthening global governance
<b>Integrated Management in Large Ocean Management Areas (LOMAs)</b>	
3. Ecosystem Overview and Assessment Reports	Review and assessment of scientific knowledge in 5 LOMAs
4. Ecologically and Biologically Significant Areas (EBSA)	Identification of areas and species requiring special management measures in LOMAs
5. Seabed Mapping	Characterization of Habitat in LOMA
6. Ecosystem Objectives (EO)/ Smart Regulations	Ecosystem specific EOs and possible regulatory options
7. Economic Assessment and Analysis	Documentation of value of activities support of IM planning
8. Targeted Sub-national consultations	Engagement of affected and response parties in LOMAs, MPAs
9. Agreements with provinces, territories and Aboriginal authorities	Development of agreements on role and responsibilities.
10. Sub-national management and advisory bodies	Intergovernmental and stakeholder involvement in LOMA planning and management

<b>Health of the Oceans</b>	
11. Oceans Act Marine Protected Areas(MPAs)	Key MPAs designated by 2007
12. Canadian Wildlife Service Marine Wildlife Areas	Key Marine Wildlife Areas designated
13. National Marine Protected Area Strategy to establish a network	Implementation of Federal MPA Strategy to establish a network
14. Science research and advice for marine protected areas	Development of tools including selection criteria for Ecologically and Biologically significant areas
15. Ballast Water and Marine Pollution Regulations	Science support and completion of regulatory process
16. Pollution prevention Surveillance for Sea Based Sources	Increased surveillance
<b>Oceans Science and Technology</b>	
17. Oceans Technology Network	Support of technology networks and research priorities
18. Placentia Bay Technology Demonstration Project	Integration of real time data to support oceans management decisions.

An Oceans Action Plan Secretariat provides for integration of the inter-departmental efforts to deliver the Oceans Action Plan. In addition to housing the Secretariat to coordinate implementation of the Oceans Action Plan, DFO is also responsible for the implementation of ocean programs key to implementation (integrated management, marine protected areas and marine environmental quality).

## NATIONAL AND SUB-NATIONAL DIVISION OF AUTHORITY

While there is a clear federal responsibility for the protection of the marine environment and the sustainable use of marine resources, effective environmental protection and conservation require broad-based partnerships. Provincial, territorial and local governments have roles and responsibilities with regards to oceans activities. Provinces and territories have primary responsibility for their lands, the shoreline and specific seabed areas, and municipalities have responsibility for many of the land-based activities affecting the marine environment, such as sewage and waste disposal. Aboriginal authorities also have a key governance role to play where settled land claims include marine resource management responsibilities

There is a therefore strong provincial/territorial desire and a practical need for sub-national engagement. To this end, the federal, provincial and territorial governments collaborate under the auspices of the Canadian Council of Fisheries and Aquaculture Ministers (CCFAM) through the Oceans Task Group<sup>1</sup> and through existing and developing regional governance mechanisms to develop joint work plans and approaches. One of the goals is the development of agreements or Memoranda of Understanding similar to the Canada/BC MOU on oceans to support integrated planning, and to ensure complementary and harmonized regulation. This initiative also involves collaboration with Aboriginal peoples and governments in priority areas and where possible to establish agreements to strengthen oceans management and address oceans priorities.

The efforts of the Oceans Task Group are supplemented by regional federal and provincial implementation committees focused on the Oceans Action Plan. An Aquaculture Task Group under the CCFAM is presently working on developing a new Framework Agreement on Aquaculture to clarify federal and provincial responsibilities in relation to aquaculture.

Management and advisory bodies are currently in place or being established to support specific integrated management plans and Marine Protected Area management plans. They involve a forum for stakeholders, including industry, academia, non-governmental organizations, Aboriginals and citizens to provide on-going communication, information-sharing, input and to effectively inform oceans management planning processes.

Various other federal-provincial coordination mechanisms also exist. For example, councils of federal-provincial/territorial ministers exist to address environment, wildlife and energy issues. Joint federal-provincial offshore petroleum boards have been established for Nova Scotia and Newfoundland and Labrador through accords and mirror federal-provincial legislation.<sup>2</sup> The boards are responsible for reviewing environmental impacts of proposed offshore hydrocarbon activities and for imposing operational conditions.<sup>3</sup>

## DOMESTIC IMPLEMENTATION OF INTERNATIONAL AGREEMENTS

The effectiveness of Canada's management efforts in the Arctic, Pacific and Atlantic oceans requires close collaboration and cooperation with adjacent nations and with other states. Canada has worked with its U.S. and Mexican neighbors through the Commission for Environmental Cooperation<sup>4</sup> and more recently through the Security and Prosperity Partnership<sup>5</sup> to address issues of common concern. Canada and the US are also coordinating efforts under their respective Oceans Action Plans. Canada also participates in the Arctic Council<sup>6</sup> which provides a mechanism for eight circumpolar nations to collaborate with respect to addressing Arctic marine environmental issues.

While a broad array of international environmental agreements have relevance to the oceans, this chapter briefly discusses Canada's implementation efforts and challenges under four key agreements (UN Convention on the Law of the Sea,<sup>7</sup> Convention on Biological Diversity,<sup>8</sup> MARPOL 73/78,<sup>9</sup> the 1996 Protocol to the London Convention<sup>10</sup> and the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities.<sup>11</sup>

### UN CONVENTION ON THE LAW OF THE SEA (LOSC)

Although Canada was a leading country in LOSC negotiations and signed the Convention in 1982,<sup>12</sup> it did not ratify the Law of the Sea Convention until November 7,

2003 with the Convention entering into force for Canada on December 7, 2003.<sup>13</sup> Delays in ratification were in part due to deep concerns relating to high seas and straddling stock fisheries issues. Canada had already, through the *Oceans Act*, incorporated into domestic law its maritime zones and the jurisdictional entitlements set out in the Convention, namely: a 12 nautical mile territorial sea; a continuous zone out to 24 nautical miles from the territorial sea baselines; a 200 nautical mile exclusive economic zone and a continental margin extending beyond the EEZ in accordance with Article 76 of the Convention.

Recent federal funding has enabled Canada to initiate the process to delimit the outer extent of its continental shelf with plans on making a submission to the UN Commission for the Limits of the Continental Shelf by 2013. A number of challenges related to LOSC implementation face Canada, including issues related to revenue sharing responsibilities of federal and provincial authorities for oil and gas production beyond 200 nm,<sup>14</sup> and the scope of Canada's powers to regulate shipping as new areas become accessible in the Arctic due to climactic variations.<sup>15</sup>

Ratifying the 1995 UN Agreement on Straddling and Highly Migratory Fish Stocks in August 1999,<sup>16</sup> Canada has made international fisheries reform and modernization a major priority.<sup>17</sup> In May 2005 Canada hosted a major international conference on high seas fisheries governance<sup>18</sup> and Canada continues to push for more effective addressing of illegal, unreported and unregulated (IUU) fishing.<sup>19</sup> Various high seas biodiversity and fishing issues remain to be worked out not only in Canadian ocean policy but globally. For example, how might discrete high seas fish stocks be better managed<sup>20</sup> and how should access to genetic biodiversity beyond national jurisdiction be addressed?<sup>21</sup>

#### CONVENTION ON BIOLOGICAL DIVERSITY (CBD)

The Convention on Biological Diversity, as an international treaty identifies a common problem, sets overall goals and policies and general obligations, and organizes technical and financial cooperation. The responsibility for achieving its goals rests with countries themselves. Under the Convention, governments undertake to conserve and sustainably use biodiversity. Parties are required to develop national biodiversity strategies and action plans and to integrate these into broader national plans for environment and development. Following the adoption of a Canadian Biodiversity Strategy in 1995,<sup>22</sup> Canada's progress has varied in implementing the key commitments under Article 8 of the CBD. Implementation of the Oceans

Action Plan addresses several key components of the national biodiversity strategy including a focus on the establishment of network of marine protected areas, regulating the risk associated with the use and release of living modified organisms, preventing and controlling the introduction of alien species and developing necessary legislation or other regulatory provisions to protect threatened species and populations.

Marine Protected Areas are established under the authority of the three federal agencies and DFO and other federal departments. Under the authority of the *Oceans Act*, two large-scale, offshore Marine Protected Areas have been established, the Endeavour Hydrothermal Vents off British Columbia<sup>23</sup> and the Gully off Nova Scotia<sup>24</sup>. Designation of three coastal marine protected areas in Atlantic Canada was announced in September 2005 for Basin Head (Prince Edward Island), Gilbert Bay (Newfoundland and Labrador) and Eastport (Newfoundland and Labrador). These *Oceans Act* Marine Protected Areas complement the contributions of the other federal marine protected area authorities to build a domestic network (Figure 2). The Strategy also links Canada's network on a continental basis through a regional marine protected area action plan with the United States and Mexico and on a global level where the World Summit on Sustainable Development commitment was to establish a representative network by 2012.

With respect to the introduction of new alien aquatic species via ballast water in ships, Canada had relied upon voluntary measures set out in *Guidelines for the Control of Ballast Water Discharge from Ships in Waters under Canadian Jurisdiction*.<sup>25</sup> However, in light of the 2004 International Convention for the Control and Management of Ships' Ballast Water and Sediments, Canada has drafted binding *Ballast Water Control and Management Regulations* which are undergoing public consultations.<sup>26</sup>

In December 2002 Canada enacted the *Species at Risk Act*.<sup>27</sup> The Act is part of a three pronged Government of Canada strategy for the protection of wildlife species at risk which also includes commitments under the Accord for the Protection of Species at Risk and activities under the Habitat Stewardship Program for Species at Risk. SARA implements key elements of the Canadian Biodiversity Strategy. The Act requires recovery strategies and action plans to be prepared for listed endangered and threatened species and management plans for species of special concern. SARA formally recognizes the role of the third party Committee in the Status of Endangered Wildlife in Canada (COSEWIC) in assessing species at risk. It applies to all federal lands in Canada, all

wildlife species listed as being at risk, and their critical habitat. The Act also puts in place various prohibitions, such as prohibiting persons from killing, harming, harassing or taking an individual of a listed endangered or threatened species and from damaging or destroying the residence of one or more individuals of a listed endangered / threatened species.

The recent nature of the Act, the need to better define with scientific rigour key provisions of the Act relating to critical marine habitat and residences as well as the shared accountability between federal ministers and federal and provincial ministers make it difficult at this early date to effectively assess the effectiveness of the statute and make recommendations for its improvement.<sup>28</sup>

The CBD work programme includes consideration of protected areas beyond national jurisdiction. High seas issues particularly as they relate to ecosystem health are of interest to Canada and Canada is working with existing governance bodies and their scientific advisors to integrate scientific knowledge and expertise to provide best available scientific advice to inform decision. For example, Canada is hosting an international science expert group to review and assess ecologically based criteria for the identification of high areas and/or resources which are ecologically and biologically significant and may require special management measures including protected area status in high seas. The intent of the workshop is to provide integrated advice to authorities such as the CBD, the Food and Agriculture Organization (FAO), the International Maritime Organization (IMO) and others for their consideration.

### MARPOL 73/78

Canada has ratified the first three of six annexes under MAROPOL. Regulations under the *Canada Shipping Act*<sup>29</sup> have implemented the discharge and other measures set out in Annex I (prevention of pollution by oil)<sup>30</sup>, Annex II (control of pollution by noxious chemical substances)<sup>31</sup> and Annex III (prevention of pollution by harmful substances in packaged form).<sup>32</sup>

Canada is in the process of drafting regulations to enable it to accede to the additional optional MARPOL Annexes, Annex IV (sewage from ships), V (garbage from ships) and VI (air pollution from ships).<sup>33</sup> The proposed regulations are expected to be implemented in late 2006. Canada's *Garbage Pollution Prevention Regulations*<sup>34</sup> prohibits the discharge of garbage from vessels out to the 200nm limit. MARPOL Annex V provisions on garbage disposal from ships entail less restrictive environmental standards.

### 1996 PROTOCOL TO THE LONDON CONVENTION 1972

Becoming the 10<sup>th</sup> country to accede to the 1996 Protocol<sup>35</sup> which takes a precautionary approach to ocean disposal, Canada has ensured implementation through provisions of the *Canadian Environmental Protection Act, 1999*. The Act adopts a "safe list" approach by only allowing ocean disposal of a limited list of wastes listed on Schedule 5 and any disposal must be in accordance with the conditions of a Canadian permit. Before issuing an ocean disposal permit, the Minister of Environment is required to subject the application to a waste assessment process set out in Schedule 6 of the Act which among other things requires refusal of a permit if re-use, recycling or treatment of waste are practical options.

### GLOBAL PROGRAMME OF ACTION FOR THE PROTECTION OF THE MARINE ENVIRONMENT FROM LAND-BASED ACTIVITIES

Canada was the first country to develop a National Programme of Action for the Protection of the Marine Environment from Land-based Activities (NPA) in 2000.<sup>36</sup> The Programme sets national priorities for addressing land-based marine pollution and activities with through a high, medium and low ranking approach. Listed as high contaminant priorities are sewage and persistent organic pollutants. Responding to shoreline construction/alteration and wetland and salt marsh alteration are also listed as high priorities. Through separate chapters for four main coastal regions, the Pacific, Arctic, Southern Quebec/St. Lawrence and the Atlantic, the Programme also describes regional problems, priorities and needed actions. A federal/provincial/territorial committee, established in 1996 soon after the GPA Washington Conference and co-chaired by Environment Canada and Fisheries and Oceans Canada, has been responsible for the development and implementation of the NPA.

Tracking implementation activities is difficult because of the numerous sources of land-based marine pollution, the multiple jurisdictions and programs involved along Canada's extensive coastlines<sup>37</sup> and the lack of a dedicated funding for GPA implementation. Canada's report to the 2001 Intergovernmental Review Meeting on Implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities included an Annex highlighting more than 90 key programs within government, non-governmental organizations and communities addressing the goals and priorities of the GPA.<sup>38</sup>

The collaborative development by federal, provincial and local authorities of integrated management processes

and plans at the coastal management area scale is contributing directly to the implementation of the National Programme of Action.

Canada also contributes to the GPA by advancing GPA activities at the regional level. The Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities,<sup>39</sup> adopted by Arctic Council Ministers in 1998, established two high priorities for regional action, addressing persistent organic pollutants and heavy metals, and identified pollution hot spots in the Russian Federation. The Protection of the Arctic Marine Environment (PAME) Working Group of the Arctic Council has agreed to review and update the Regional Programme of Action in advance of the 2nd Intergovernmental Review Meeting in 2006.<sup>40</sup> Projects to assess effluent discharges from seafood processing plants have been undertaken on both the Atlantic and Pacific coasts.<sup>41</sup> The Global Programme of Action Coalition for the Gulf of Maine (GPAC), a network of hundreds of individuals from community organizations, government, industry, indigenous communities and researchers, was forged through a pilot project of the North American Commission for Environmental Cooperation and has facilitated the convening of various binational workshops to further GPA implementation.<sup>42</sup> GPAC most recently helped to convene, in collaboration with the Gulf of Maine Council on the Marine Environment, a Gulf of Maine Summit where participants discussed ecosystem indicators for three priority areas: contaminants and pathogens, fisheries and aquaculture, and land use.<sup>43</sup>

## ENFORCEMENT

While each federal statute pertaining to oceans has its own set of regulations, enforcement procedures, penalties and fines, the *Oceans Act* in section 35 provides the Minister of Fisheries and Oceans with the authority to develop specific regulations, pertaining to the designation of marine protected areas and the prescription of measures needed to achieve the conservation objectives of the Marine Protected Area. Section 37 of the Act provides for penalties if prescribed measures are contravened with persons liable to a fine not exceeding \$100,000 on summary conviction or up to \$500,000 for an indictable offence. The Act also provides the authority to make regulations prescribing marine environmental quality requirements and standards. In practice, this is intended to give effect to those ecosystem objectives which require the force of regulation.

With respect to enforcement and surveillance, the approach adopted by the Canadian Government is to multi-

task pollution prevention, fishery officers and other federal and provincial enforcement officers active in the geographic area where the oceans conservation or management measure is being applied. Notwithstanding the above, enforcement is only one of many measures on the compliance continuum. Consequently substantial effort is dedicated in both the integrated management and marine protected area processes to engaging stakeholders and involving them in advisory and management bodies. Better understanding and “ownership” of the management plans and associated regulatory measures provides support and potentially reduces, the more costly surveillance and enforcement efforts.

Regulations developed under the *Oceans Act* include those to designate two current and three candidate Marine Protected Areas and to date no contraventions have been detected. Regulations focused on the mitigation of seismic noise in the marine environment are also under development with a targeted formal public consultation in late 2005.

Canada has been a leader in developing legislative provisions supportive of effective enforcement and creative sentencing options for those convicted of environmental and fisheries offences. Most federal and provincial statutes provide for strict liability offences where the Crown does not have to show fault (intentional, reckless or negligent behavior) by the offender but only a guilty act such as a deleterious deposit into waters frequented by fish. Many statutes allow judges to be innovative in issuing sentencing orders beyond the traditional sanctions of fines or imprisonment. For example, the *Fisheries Act* in Section 79.2 allows courts to impose various requirements on offenders including: prohibiting activities that may continue or repeat the offence; directing remedial and avoidance measures; directing convicted persons to publish the facts relating to the offence; requiring persons to pay governmental costs of remedial or preventative actions; ordering persons to perform community service; directing persons to contribute funds for the purpose of promoting fish habitat conservation and fisheries management; and requiring persons to comply with any other conditions for securing the person’s good conduct.

One of the most recent legislative efforts to bolster enforcement in the oceans sector is aimed at more effectively countering ship source pollution especially in contravention MARPOL standards which has had particular damaging consequences to migratory seabirds. Amendments adopted in 2005<sup>44</sup> to the *Migratory Conventions Act, 1994* and the *Canadian Environmental Protection Act, 1999* expands the scope of persons who may be responsible for offences, extend the jurisdiction of Canadian

courts to cover infringements in the EEZ and substantially increases penalties.<sup>45</sup>

## RESEARCH AND EDUCATION

Canada's Oceans Strategy emphasizes the need to base decisions on sound science and to address uncertainties in our knowledge base so that management actions can be adjusted as new scientific information becomes available. The importance given to improving our understanding of marine ecosystems, their properties and critical functions as well as the impacts of single and multiple activities on these parameters has resulted in a shift in the orientation and organizational structure of the research and scientific support services within the Department of Fisheries and Oceans and by other service providers as well. Increased partnerships with academe, international scientific organizations, sister agencies in other governments have facilitated the development of tools for the application of ecosystem-based considerations of ocean issues and the building of a rigorous peer-review scientific advisory process designed to support all ocean managers.

To further develop the scientific understanding necessary to support the implementation of Canada's ocean management policy, an Oceans Management Research Network was established as a joint initiative between the Social Science and Humanities Research Council and the Department of Fisheries and Oceans. The Research Network creates a national network of interdisciplinary and cross-sectoral research working groups to develop and integrate knowledge and best practices for sustainable oceans management.

The commitment to advance Ocean Science and Technology is anchored in Canada's Oceans Action Plan, with the objective to improve information sharing through connecting information networks, promote innovation and new technologies by supporting prototype development and targeted research and development, and enhanced commercialization through demonstration projects in the priority Large Ocean Management Areas.

## FINANCING

Due to fiscal restraints in 1997, no new funds were provided to implement the *Oceans Act* or Canada's Oceans Strategy. Until the federal government's approval of the Oceans Action Plan in 2005, funding for implementation of the national ocean management approach has been achieved through reallocation within DFO. The programs delivered in the six administrative regions of the Department of Fisheries and Oceans have been dependant on transfers of national funds on an annual basis. Since 1997, the Department has redirected approximately \$100 million to fund the activities in support of the Oceans Strategy.

The Oceans Action Plan, however, provides some new funding, in the order of \$28 million over two years across involved departments and outlines a phased approach to implementation of the policy with incremental funding for two years and a possible renewal of funds on submission of a detailed second phase which further details the actions needed to fully implement Canada's approach to oceans management.

## IMPLEMENTATION, EVALUATION AND LONG-TERM OUTLOOK

As referenced earlier, the single greatest challenge in implementing a "horizontal" oceans policy in Canada is the need to persuade or show other sectors, departments, levels of government and traditional stakeholders that the policy and the integrated management process have benefit and interest for them.

Moving from the theoretical level to the application of concepts such as ecosystem-based management and precaution in day to day decisions is fraught with science challenges, as well as concerns about change. The focus on developing operational tools and guidelines for application has helped to overcome some of these challenges.

There are many challenges in implementing an oceans policy which seeks integration of the planning and management of ocean activities among various levels of government, and re-orientation of single species, single activities decisions to decisions focused on the sustainability of the ecosystem and therefore of the industries and traditions dependant upon ocean resources. Perhaps the greatest challenge is implementing the institutional changes and building the relationships and capacities essential to achieve integration.

It is through the development of area-based integrated management plans that agencies and stakeholders will see

themselves (or not) in the product, and understand the ecosystem, social and economic objectives that will guide activities in the area.

When addressing an ocean management issue, it is key to accurately assess the spatial and temporal scale at which the management action needs to be taken. If an environmental or economic issue is ecosystem-wide, a sub-national or local intervention will not be effective in addressing the problem. Alternately, if the management issue is multi-sectoral and requires action by different government authorities, intervention by a limited number of responsible authorities will not result in the desired outcomes. An additional challenge is the selection of the appropriate performance indicators, indicators chosen in consideration of the spatial and temporal scale at which the system will respond.

## MONITORING AND REPORTING

The *Oceans Act* requires a review of the administration of the Act by Parliament within three years after its enactment. The Report on the *Oceans Act* by the Standing Committee on Fisheries and Oceans in October of 2001 concluded that the Act was fundamentally sound and made 12 recommendations which included a recommendation that a performance based reporting system be established and reports provided to Parliament on an annual basis. A further recommendation called for the preparation of a state of the ocean report on a periodic basis to track the health of the oceans, ocean communities and related ocean industries.<sup>46</sup>

On September 29, 2005, the Commissioner of the Environment and Sustainable Development reported to the House of Commons on *Oceans Act* implementation and issued key recommendations.<sup>47</sup> Recommendations directed to Fisheries and Oceans Canada included:

- having Canada's Oceans Action Plan recognized and managed as a government *horizontal initiative*;
- finalizing and implementing operational guidance for integrated management planning, including marine protected areas, in the five priority ocean areas;
- planning and managing its resources to ensure commitments and targets set out in departmental documents, such as the annual report on plans and priorities, are met as well as 2002 World Summit on Sustainable Development oceans commitments;
- finalizing and implementing an accountability framework for its management activities, and

- improving communications to the public, including periodic information on the state of the oceans.

The recommendations are in the process of being addressed by the Government of Canada through Phase 1 of the Oceans Action Plan released in May 2005.

Federal departments are required to provide a performance report to Parliament as part of their annual report on plans and priorities. Information on programs, their budgets, plans and expected results for integrated management, marine protected areas and other ocean management activities are provided for public scrutiny.<sup>104</sup>

A Results-based Management and Accountability Framework has been developed by the Department of Fisheries and Oceans to monitor the progress and implementation of the national ocean policy. This framework sets out performance measurement goals and indicators to assess departmental progress. The Results-based Management and Accountability Framework has been designed to track how Fisheries and Oceans uses resources to undertake activities in order to affect the desired results and achieve stated outcomes.<sup>105</sup>

From an oceans management program perspective, monitoring, assessment, reporting and re-evaluation of management measures applied to achieve the marine environmental quality objectives, social and economic objectives defined for integrated management and Marine Protected Areas are an integral part of the operational frameworks of *Oceans Act* programs.

## OUTLOOK

Funding for Phase 1 Oceans Action Plan and interest shown by other levels of governments to develop governance arrangements and processes to increase collaborative efforts augur well for short term implementation of Canada's Oceans Strategy. Integrated management processes are ongoing in five large ocean management areas and work is progressing towards the designation of the seven remaining candidate Marine Protected Areas originally identified during the pilot phase of the policy development process. For the implementation of the international pillar of the OAP, an international fisheries and oceans governance strategy is being developed to provide a coordinated approach to addressing key fisheries and oceans governance issues. Key partnerships have been developing with coastal nations with shared interests and marine boundaries and considerable international efforts are being directed to address environmental issues in the high seas.

Priority actions identified under Phase 1 of the Oceans Action plan include the development of ocean management agreements with all federal, provincial, territorial, Aboriginal partners. Although these governance arrangements are pivotal, so is the development of capacity at all levels of government and within the stakeholder community in order to implement integrated management in all

Canadian marine waters. Changes in relationship between sectors, between sectors and their regulators require time and investment. Successful replacement of sectoral relationships by multiple industry coalitions, management decisions integrated to focus on a geographic space rather than single activities; all of these define the long term outlook of successful oceans management in Canada.

## LESSONS LEARNED

While Canada, like other countries, is still learning in the complex field of ocean policy and governance, 7 major lessons do stand out.

### A. ENABLING OCEAN MANAGEMENT LEGISLATION PROVIDES A USEFUL GUIDE

Canada's *Oceans Act* has provided an important framework for directing how human uses of Canada's oceans may be better managed. The Act has defined Canada's maritime zones and recognized the attendant rights and responsibilities within those zones in conformity with the 1982 Law of the Sea Convention. The Act has clearly designated Fisheries and Oceans Canada as the lead federal authority for developing integrated management plans for marine areas, for setting the environmental quality standards which must be met and for designating/establishing marine protected areas. The Act has facilitated the development of a broad policy framework and a government-wide plan of action.

### B. PASSING AN OCEANS ACT SHOULD NOT DETRACT FROM THE NEED FOR OTHER LEGISLATIVE AND REGULATORY REFORMS

While Canada's *Oceans Act* has substantially advanced ocean governance initiatives and arrangements, there remain several sectoral laws which do not yet reflect the modern ocean governance commitment of the Government of Canada. For example, Canada's *Fisheries Act*, dating back to 1868, has yet to be "modernized" to reflect modern ocean governance principles. The policies guiding application of this Act have, however, evolved and continue to do so.

### C. INCLUDING SUSTAINABLE DEVELOPMENT PRINCIPLES IN NATIONAL OCEANS-RELATED LEGISLATION IS VERY IMPORTANT

While principles by their nature tend to be general and open to various interpretations, principles such as integration, precaution and the ecosystem approach do serve useful functions. At the very least principles invite decision-makers and others to rethink traditional management approaches. Principles may be considered part of the search for "good governance". They facilitate discussions and debates both within government bureaucracies but also among the broader public.

### D. DEVELOPING INTEGRATED MANAGEMENT PLANS AND ESTABLISHING MARINE PROTECTED AREAS TAKES TIME

Building the relationships and capacity required to bring participants at all levels to the table takes time and requires skilled negotiation. The special relationship of the government with Aboriginal authorities must be considered and managed in the development of Marine Protected Areas and Integrated Management Planning processes. Both of these processes involve multiple steps, all of them requiring, to a greater or lesser extent, the involvement of other government authorities and meaningful consultation with affected parties.

In going forward one of the major tests will be the management of public expectations, for timely and focused intervention to address issues of immediate concern to them. User conflicts and environmental degradations have evolved over years. To change human relationships and to detect positive responses in the marine environment will likely require decades.

#### E. FEDERATED STATES FACE PARTICULAR CHALLENGES IN ACHIEVING INTEGRATED COASTAL/OCEAN MANAGEMENT

Being a country with eight Provinces and three territories fronting ocean areas, Canada faces special challenges in achieving integrated coastal/ocean management. Canada's *Oceans Act* recognizes the constitutional limitations of the federal Government by limiting integrated management planning to marine waters and not directly encompassing provincial coastal lands and rivers. The *Oceans Act* requirement to collaborate with other levels of government seeks to draw in other government authorities as partners in the integrated management process while respecting current division of powers. The extent to which integrated management planning initiatives will influence provincial laws, policies and interests remains to be seen.

The complexity of shared federal-provincial responsibilities may also affect the pace of legislative and regulatory developments. For example, development and enactment of Canada's *Species at Risk Act* was prolonged in part due to the jurisdictional complexities and sensitivities surrounding species at risk. Several other ocean related activities, such as aquaculture management involve both federal and provincial authorities and therefore present significant challenges because of federal-provincial jurisdictional issues.

The relationship with provinces and territories continues to develop and much of the success of integrated planning will depend on continuing progress. It is through these inter-jurisdictional relationships and between regulators that an existing fragmented set of laws and policies will be coordinated in the domestic management of oceans activities. The inclusion of principles set out in the *Oceans Act* in other federal laws and policies is underway; but needs continuing focus and attention at the local, provincial, federal and international level each with its own set of interests and obstacles.

#### F. LIMITED MARINE ECOSYSTEM UNDERSTANDINGS CONTINUE TO BE A MAJOR CHALLENGE

While Canada is firmly committed to implementing an ecosystem-based approach to management, including fisheries management, the limited scientific data and understanding of complex marine ecosystems remains a challenge. Canada's Oceans Action Plan has recognized that ecosystem-based science needs to be strengthened and one of the pillars of the Plan is to enhance ocean science and technology.

#### G. INCENTIVES ARE CRITICAL FOR CHANGES IN GOVERNANCE AND ACCOUNTABILITY

Ecosystem-based integrated management of oceans requires changes in governance both within the federal agencies and between levels of government. Until implementation of the Oceans Action Plan was initiated, neither the necessary inter-agency structures, nor other departmental accountabilities were in place. During the first years of implementation of Canada's *Oceans Act* and oceans policy, both accountability and financing (internal reallocation) were located with only one department. The situation did not support a coordinated federal approach.

As recommended in the 2005 Auditor General's Report, a horizontal, all of government approach is a fundamental requirement for success in bringing all federal regulators to the table. Sub-national authorities (Provinces, Territories, Aboriginal), and stakeholders may require capacity-building and incentives to participate in a national program. Financial investment is required to build integrated management, and may be an important incentive both at the federal and sub-national level.

## CONCLUSION

Integrated management objectives involve significant changes in science advice, regulatory activities, intergovernmental and stakeholder relationships. While progress has been made in pilot areas, the advent of the targeted Oceans Action Plan with federal government political and financial support is allowing the coherent development of integrated management plans in five key areas of Canada's oceans.

Experience gained since the promulgation of the *Oceans Act* and adoption of the Oceans Strategy as the federal policy framework has highlighted the need for clear implementation strategies. Efforts will need to continue on advancing:

- intersectoral and inter-departmental buy-in (Canada's Oceans Action Plan)

- intergovernmental(federal-provincial) relationships (Canadian Council of Fisheries and Aquaculture Ministers and federal-provincial agreements),
- increased collaboration internationally to address issues of common concern, and
- clear guidelines for the interpretation and implementation of ecosystem-based management.

Implementing a results-based system of monitoring and reporting for government wide initiatives is daunting, with ministerial accountabilities continuing to be linked to single activities as opposed to the horizontal target of integrated oceans management. Generating the political will, profile and resources to support a robust policy and effective implementation of the integrated approach continue to be long term goals.

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#### END NOTES

<sup>1</sup> Canadian Council of Fisheries and Aquaculture Ministers. September 2001. Establishment of a Federal Provincial Oceans Task Group. Available: <[http://www.scics.gc.ca/cinfo01/83072904\\_e.html](http://www.scics.gc.ca/cinfo01/83072904_e.html)>.

<sup>2</sup> Van Penick, "Legal Framework in The Canadian Offshore" *Dalhousie L.J.* 24 (2001): 1-22; Angus Taylor and Jim Dickey, "Regulatory Regime: Canada-Newfoundland/Nova Scotia Offshore Petroleum Board Issues" *Dalhousie L.J.* 24 (2001): 51-86.

<sup>3</sup> Canada-Nova Scotia Offshore Petroleum Board <<http://www.nspb.ns.ca>>; and Canada-Newfoundland and Labrador Offshore Petroleum Board <<http://www.cnlopb.nl.ca>>.

<sup>4</sup> Commission for Environmental Cooperation: Conservation of Biodiversity Program. Available: <[http://www.cec.org/programs\\_projects/conserv\\_biodiv/index.cfm?varlan=english](http://www.cec.org/programs_projects/conserv_biodiv/index.cfm?varlan=english)>.

<sup>5</sup> Security and Prosperity Partnership of North America: Waco Texas, 2005. Available: <<http://www.pm.gc.ca/eng/news.asp?id=443>>.

<sup>6</sup> See Arctic Council <[http://www.arctic-council.org/files/infopage/60/376\\_eng.pdf](http://www.arctic-council.org/files/infopage/60/376_eng.pdf)>.

<sup>7</sup> December 10, 1982, U.N. Doc. A/CONF.62/122, reprinted in *International Legal Materials* 21 (1982): 1261-1354.

<sup>8</sup> June 5, 1992, *International Legal Materials* 31 (1992) 818-841.

<sup>9</sup> 1973 International Convention for the Prevention of Marine Pollution from Ships, as modified by the 1978 Protocol, *International Environment Reporter* 21 (2003, loose-leaf): 2301-2396.

<sup>10</sup> November 7, 1996, *International Legal Materials* 36 (1997): 11-30.

<sup>11</sup> UNEP (OCA)/LBA/IG.2/7 (15 December 1995).

<sup>12</sup> Ted L. McDorman, "Will Canada Ratify the Law of the Sea Convention?" *San Diego Law Review* 25 (1998) 535-579 at 536-538.

<sup>13</sup> Ted L. McDorman, "Editorial – Canada Ratifies the 1982 United Nations Convention on the Law of the Sea" *Ocean Development & International Law* 35 (2004) 103-114.

<sup>14</sup> Aldo Chircop, "Energy Policy and International Royalty: A Dormant Servitude Relevant for Offshore Development", in Myron H. Nordquist, John Norton Moore and Alexander S. Skaridov, eds., *International Energy Policy, the Arctic and the Law of the Sea* (London/Boston: Martinus Nijhoff Publishers, 2005) 247-270.

<sup>15</sup> The effects of climate change are expected to open up Canadian Arctic waters to commercial traffic by as early as 2015. See Government of Canada, Canada's International Policy Statement a Role of Pride and Influence in the World: Overview (2005) at 7. Available: <<http://www.international.gc.ca>>.

<sup>16</sup> Division for Oceans Affairs and the Law of the Sea, Office of Legal Affairs, *Law of the Sea Bulletin* No. 54, 2004, New York: United Nations.

<sup>17</sup> Government of Canada, Canada's International Policy Statement a Role of Pride and Influence in the World: Diplomacy (2005). Available: <<http://www.international.gc.ca>>.

<sup>18</sup> Intergovernmental Conference on The Governance of High Seas Fisheries and the UN Fish Agreement – Moving from Words to Action: St. John's, Newfoundland and Labrador, May 1-5, 2005. Documentation available: <<http://www.fisheriesgovernance.conference.gc.ca>>.

<sup>19</sup> Canada's National Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (NPOA-IUU) (March 2005). Available: <[http://www.dfo-mpo.gc.ca/misc/npoa-iuu\\_e.htm](http://www.dfo-mpo.gc.ca/misc/npoa-iuu_e.htm)>.

<sup>20</sup> See generally, "Unfinished Business: Deep-Sea Fisheries and the Conservation of Marine Biodiversity Beyond National Jurisdiction," Kristina M. Gjerde and David Freestone, eds., *Special Issue of The International Journal of Marine and Coastal Law* 19 (2004): 209-363.

<sup>21</sup> Major disagreements have arisen among countries as whether the high seas freedom principle or the principle of common heritage of humankind should apply. See Report on the work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea at its fifth meeting, UN Doc. A/59/122, 2004 at 23-24.

<sup>22</sup> Canadian Biodiversity Strategy: Canada's Response to the Convention on Biological Diversity (Ottawa: Canadian Museum of Nature, 1995).

- <sup>23</sup> *Endeavour Hydrothermal Vents Marine Protected Area Regulations*, SOR/2003-87.
- <sup>24</sup> *Gully Marine Protected Area Regulations*, SOR/2004-112.
- <sup>25</sup> Transport Canada, Guidelines for the Control of Ballast Water Discharge from Ships in Waters under Canadian Jurisdiction. Available: <<http://www.tc.gc.ca/MarineSafety/TP/TPI3617/Tp13617e.htm>>.
- <sup>26</sup> Government of Canada, Ballast Water Control and Management Regulations, Available: <<http://Canadagazette.gc.ca/partII/2005/20050611/html/regle6-e.html>>.
- <sup>27</sup> *Species at Risk Act*, S.C. 2002, c.29.
- <sup>28</sup> For an early critique David L. VanderZwaag and Jeff A. Hutchings, "Canada's Marine Species at Risk: Science and Law at the Helm; but a Sea of Uncertainties" *Ocean Development & International Law* 36 (2005): 219-259.
- <sup>29</sup> The *Canada Shipping Act, 2001*, S.C. 2001, c. 26 will eventually replace the *Canada Shipping Act*, R.S.C. 1985, c. S-9.
- <sup>30</sup> *Oil Pollution Prevention Regulations*, SOR/93-3.
- <sup>31</sup> *Dangerous Chemicals and Noxious Liquid Substances Regulations*, SOR/93-4.
- <sup>32</sup> *Dangerous Goods Shipping Regulations*, SOR/81-951 as amended by SOR/2001-293.
- <sup>33</sup> Transport Canada, Canada Shipping Act 2001 (CSA 2001), Regulatory Reform Project – Phase I, Consultation Paper, Prevention of Pollution from Vessels Regulations (Revision 7, January 27, 2004).
- <sup>34</sup> *Garbage Pollution Prevention Regulations*, C.R.C. 1978, c. 1424.
- <sup>35</sup> *Disposal at Sea Regulations*, SOR/2001-275, Regulatory Impact Analysis Statement.
- <sup>36</sup> Federal/Provincial/Territorial Advisory Committee on Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities, Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities (NPA) (Ottawa: Government of Canada, June 2000).
- <sup>37</sup> For a summary of the various programs in the four Atlantic provinces, see Peter G. Wells "Invigorating the United Nations Global Programme of Action (GPA) for the Protection of the Marine Environment from Land-based Activities – utilizing both bottom-up and top-down approaches" *Marine Pollution Bulletin* 44 (2002): 719-721.
- <sup>38</sup> Federal/Provincial/Territorial Advisory Committee on Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities, Implementing Canada's National Programme of Action for the Protection of the Marine Environment from Land-based Activities: National Report to the 2001 Intergovernmental Review Meeting on Implementation of the Global Programme of Action (Ottawa: Environment Canada, November 2001).
- <sup>39</sup> Available online: Arctic Council <[http://www.arctic-council.org/files/infopage/60/376\\_eng.pdf](http://www.arctic-council.org/files/infopage/60/376_eng.pdf)>.
- <sup>40</sup> PAME Working Group Meeting Report No: I-2005, 22-23 February 2005, Copenhagen, Denmark, at 3-4.
- <sup>41</sup> *Protecting Canada's Coastal and Marine Environment* (2004), online: <<http://www.npa.pan.ca>> at 15.
- <sup>42</sup> For a further review of the pilot projects see David VanderZwaag, "Transboundary Challenges and Cooperation in the Gulf of Marine Region: Riding a Restless Sea Toward Misty Shores" in Harry N. Scheiber, ed., *Law of the Sea: The Common Heritage and Emerging Challenges* (The Hague: Martinus Nijhoff Publishers, 2000) 265-285 at 279-281.
- <sup>43</sup> Patty King and Christine MacKenzie, eds., *Gulf of Maine Summit: Committing to Change, Summit Report* (2004). Available: Gulf of Maine Council <<http://www.gulfofmainesummit.org/summit%20Report/Summit%20Report.pdf>>.
- <sup>44</sup> *An Act to amend the Migratory Birds Convention Act, 1994 and the Canadian Environmental Protection Act, 1999*, S.C. 2005, c. 23.
- <sup>45</sup> Persons responsible for depositing a substance harmful to migratory birds not authorized under the *Canada Shipping Act* may include masters, chief engineers, owners and operators and a vessel and directors/officers of a corporation which is the owner/operator of a vessel. S.C. 2005, c. 23, at s. 5.4. Persons or vessels contravening provisions of the *Migratory Birds Convention Act, 1994* or its regulations are subject to a fine of up to \$1,000,000 or to imprisonment for a term up to three years or both upon conviction by indictment and to a fine of not more than \$300,000 or to imprisonment for a time of up to six months or to both upon summary conviction. *Ibid.*, s. 9(1). Persons and vessels may be convicted for a separate offence for each day the offence is committed or continued. *Ibid.*, s. 9(2).
- <sup>46</sup> Report on the Oceans Act: Standing Committee on Fisheries and Oceans. Comité Permanent des Pêches et des Océans, 2001. Available: <[www.parl.gc.ca](http://www.parl.gc.ca)>.
- <sup>47</sup> Report of the Commissioner of the Environment and Sustainable Development, *supra* note 20.
- <sup>104</sup> Fisheries and Oceans Canada Performance Report for the period ending March 31, 2004. Available: <[www.tbs-sct.gc.ca](http://www.tbs-sct.gc.ca)>.
- <sup>105</sup> Results-based Management and Accountability Framework. Available: <[http://www.dfo.mpo.gc.ca/communic/cread/evaluations/index\\_e.htm](http://www.dfo.mpo.gc.ca/communic/cread/evaluations/index_e.htm)>.

