

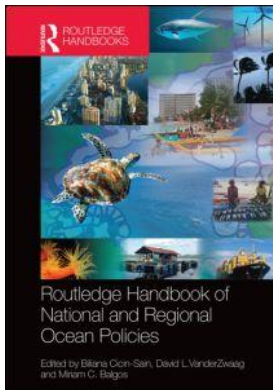
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## PART II

# National Ocean Policies

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# 3

## OCEANS POLICY

### A Canadian case study\*

*Camille Mageau,\*\* David L. VanderZwaag, Ken Huffman,\*\* and Susan Farlinger\*\**

#### **Introduction**

Over the years, Canada, like most other coastal nations, has developed an intricate set of policies and regulatory instruments focused on the management of traditional sectoral uses of the oceans. Nearly two decades 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 to identify, through Canada’s Oceans Act enacted in 1996, one federal lead authority responsible for the coordination and harmonization of existing policy and statutory instruments, and to formulate a national vision and guiding principles for oceans management within which existing and emerging policies and laws would be interpreted and implemented.

This chapter outlines Canada’s statutory and policy instruments and 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 that led to the development of the Oceans Act, its policy framework, Canada’s Oceans Strategy (Fisheries and Oceans Canada, 2002a), the Canadian government’s blueprint for action, Canada’s Oceans Action Plan (Fisheries and Oceans Canada, 2005a), and the evolution of the approach in the face of changing government priorities. The relationship between key ocean-related agreements and Canadian domestic law and practice is summarized. In closing, lessons learned during the past two decades will be examined, as will the challenges that lie ahead.

#### **Ocean policy context, processes, and institutional arrangements**

##### ***Basic information***

Canada is a maritime nation that borders 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 ocean regions total almost 6 million km<sup>2</sup> (Fisheries and Oceans Canada, 2014), and this will likely increase significantly once the extended continental shelf is delimited under the 1982 United Nations Convention on the Law of the Sea (UNCLOS).

Eight out of the ten provinces and all three territories border oceans, and approximately 24 per cent of Canada's population inhabits the coastal zone along a coastline that is one of the longest in the world, at about 245,000 km (Fisheries and Oceans Canada, 2014). The oceans provide the recreational, environmental, employment, income, and cultural staples to more than 7 million Canadians who live in coastal communities (Fisheries and Oceans Canada, 2014).

Canada has, in the past, defined itself as a 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 several other ocean-related industries, many of which vie for access to the same ocean space, the footprint of each industry and the cumulative impact 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 conflicts between oceans users and administrative, jurisdictional, and regulatory complexities; and,
- an oceans industry sector that is significantly weaker than its potential.

In addition to these domestic challenges, new challenges are emerging, particularly in the Arctic, as ice cover diminishes, and global demand for resources and efficient movement of goods are pushing for new shipping routes and development in the Arctic. The legal status of the Northwest Passage – whether internal waters, as claimed by Canada, or a strait used for international navigation, as argued by the United States – is an ongoing debate (Byers, 2013), and Canada is still facing many infrastructure deficits, such as adequate port facilities in the North (VanderZwaag, 2014a).

The marine areas that 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 ecotourism, with an increasing focus on aquaculture in some areas of the coast. In the past five years, shipping of crude oil out of Vancouver has increased, and public attention and debate has hit the national scene, initially focussed on the controversial Northern Gateway pipeline with its export terminal at Kitimat on the British Columbia North Coast. More recently, the government of British Columbia has made liquefied natural gas (LNG) development the centrepiece of its economic plan for the province.

The Atlantic coast has a much wider continental shelf. Offshore areas have traditionally supported extensive and varied fishing, marine transportation activities, and, increasingly, initiatives related to oil and gas, ecotourism, and aquaculture. New hope for economic development is emerging, with tidal energy development as a focus in the Bay of Fundy and new proposals for oil and LNG terminals in Quebec and the Maritimes.

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 oriented around community resupply. Land mining, oil and gas exploration, ecotourism, and subsistence harvesting all contribute to the marine-based northern economy. In September 2013, the *Nordic Orion*, carrying a load of coking coal from Vancouver to Finland, became the first commercial bulk carrier to transit the Northwest Passage and further commercial transits are expected (Weber, 2014). The pace and scale of transit shipping in the Arctic, however, continues to be subject to considerable uncertainty (Lasserre, 2014). Canada still has unresolved ocean boundaries (VanderZwaag, 1995). In the Arctic, the offshore boundary

in the Beaufort Sea between Alaska and the Yukon remains in dispute (McDorman, 2009), while Canada and Denmark (Greenland) reached a tentative agreement in November 2012 on the Lincoln Sea maritime boundary, with a treaty text to be prepared based on the negotiations (Foreign Affairs, Trade and Development Canada, 2012). 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 the ownership of Machias Seal Island in the Bay of Fundy and jurisdiction over adjacent waters (McDorman et al., 1985; McDorman, 2009).

Over the last fifteen years, the oceans have been a dynamic growth sector for the Canadian economy and (based on an estimate using 2006 data) generated about CAN\$28 billion, in direct and indirect gross domestic product (GDP) through ocean-related industries. More recent unpublished estimates using 2008 data put the value at about CAN\$39 billion (Fisheries and Oceans Canada, 2009a). While there is considerable variation in estimates and debate on methodology, oceans activity makes a modest (about 2 per cent) contribution to the Canadian economy, but is a significant economic driver regionally. For example, in British Columbia, the oceans sector represents about 5 per cent of gross provincial product (GPP) and almost 7 per cent of jobs. In Atlantic Canada (including Quebec), the comparative figures are 5 per cent of GPP and almost 4 per cent of jobs. Commercial fishing and aquaculture continue to make an annual contribution to Canada's oceans economy totalling CAN\$2 billion, supplemented by a further CAN\$2 billion from the fish-processing industry. Employment in the fisheries and aquaculture and spin-off jobs is 65,000, providing more than CAN\$2 billion in labour income, often in coastal communities with limited other opportunities. Offshore oil and gas production has increased in annual investment value over the past decade from CAN\$250 million to almost CAN\$10 billion. In GDP value, oil and gas production on the east coast represents almost a third of the total oceans sector – and is growing. Considerable renewable energy resources, such as offshore wind, wave, and tidal energy, have been identified on all three of Canada's coasts, and a number of initial project proposals have been developed over the past decade, but no commercial projects are in place currently except for a small tidal power station on the Annapolis River in Nova Scotia.

Recreation and tourism have continued to grow, with coastal and cruise ship tourism being regionally important, although a relatively small contributor to the oceans economy. As a maritime nation, Canada has a significant and vibrant shipping industry. The marine transportation sector contributes CAN\$5.5 billion to GDP, 75,000 jobs, and CAN\$3.7 billion in labour income to the Canadian economy. International trade worth CAN\$205.3 billion moved through Canada's national marine transportation system in 2011 (Transport Canada, 2013).

Aboriginal communities have the longest history of coastal occupancy. Coastal aboriginal cultures are tied to ocean resources for food, social, and ceremonial reasons. Commerce between First Nations, and after contact between aboriginal communities and Europeans, was 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, defence, and environmental protection, as well as the protection of living resources within offshore areas (Fisheries and Oceans Canada, 1997a). Provinces, the subnational 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. 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 considered to be part of a province at the time of confederation.<sup>1</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 eighty provincial laws that affect coastal and marine planning (Fisheries and Oceans Canada, 1997b; 2009b).

In addition to this legislated division of power, Canada sets as a high priority its constitutional obligations to aboriginal peoples. The Constitution Act, 1982 (section 35) recognizes and affirms existing aboriginal and treaty rights. Where land claim agreements have been settled, and include specific resource management responsibilities and commitments by the federal government to cooperate and collaborate with the signatories, the situation is clear. In some cases, however, claims that may impact on ocean areas have not yet been settled, and interim arrangements that do not prejudice the outcomes of land claims discussions are in place, being developed, or needed (Brown and Reynolds, 2004; Moodie, 2004; Ginn, 2006; Jones, 2006).

The Oceans Act, section 2(1), 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 programmes and activities with aboriginal peoples. While integrated planning and the development of marine protected areas (MPAs) are without prejudice to rights and title, the involvement and support of aboriginal peoples is clearly required where their interests are potentially affected. Many coastal communities, of and by themselves, have large aboriginal populations, and in some areas specific arrangements respecting harvesting and co-management have been made with aboriginal authorities.

The importance of the oceans to the federal, provincial, First Nations, municipal, and local communities, stakeholders, and interest groups requires engagement of these interests in setting priorities and planning oceans activities. It is this context that informed the development of an Oceans Act. The federal Department of Fisheries and Oceans Canada (DFO) 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, environmental response, and the provision of marine scientific advice and research.

### **A brief overview of the nature and evolution of national oceans policy**

Although the development of a national oceans policy and legislation was first proposed in 1987 (Fisheries and Oceans Canada, 1987), the first steps towards the elaboration of a national oceans policy for Canada were taken when the government of Canada enacted the Oceans Act, in 1996. This statute 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 the precautionary approach, provides the mandate to develop and implement programmes to implement these principles, and situates the DFO's existing regulatory and management authorities within the context of oceans management. The Act also recognizes other mandated authorities and provides guidance on how their mandates should be delivered within the marine environment.

The development and review of the Oceans Act, by means of the public and parliamentary processes, was complemented by a broad public consultation process, which led to Canada's Oceans Strategy, the overarching oceans policy framework for the integrated management of Canada's oceans (Fisheries and Oceans Canada, 1999a). During the five years immediately following the proclamation of the Oceans Act, the ocean management programmes outlined in the statute were piloted in the field to better define the policy guidance required and to inform the development of the federal Oceans Action Plan (OAP). Unlike most legislation, there was no centrally approved funding channelled through the budget to implement the Oceans Act, leaving the DFO to reallocate funds internally. For the first few years of the programme, DFO internal funding was 'B-based' – or contingent on an annual exercise to find savings in other programme areas or to use a portion of the Department's approved carry-forward from the previous year. In the early 2000s, after the Oceans Act components became a key component of the DFO's Strategic Plan, the programme was given stable funding by DFO management and oceans programming included in the DFO core ('A-base') budget.

Flowing from the call to advance modern ocean management and political commitment in the October 2004 Speech from the Throne (Government of Canada, 2004a) and the 2005 Budget Speech (Department of Finance Canada, 2005), Canada's OAP outlined and funded priority areas for action under four major themes: international leadership, sovereignty, and security; integrated oceans management for sustainable development; health of the oceans; and science and technology (Fisheries and Oceans Canada, 2005a). The priority was reinforced by the designation by the prime minister of a parliamentary secretary to support implementation of the OAP. The profile and political will secured the first funding for a government-wide initiative. The OAP Phase I (2005–07) consisted of CAN\$28.5 million for eighteen initiatives across seven federal departments and agencies. Following Phase I – and a change of government – the 2007 federal budget introduced the National Water Strategy, which proposed CAN\$19 million over two years for the Health of the Oceans (HOTO) programme, to further support sustainable development, management and protection of ocean resources, and water quality (Department of Finance, 2007). The two-year HOTO funding was subsequently increased to five years and CAN\$61.5 million when the details were approved and announced by Cabinet. The HOTO programme became Phase II of the OAP, but crucially the focus was narrowed to only one of the four pillars identified in the 2005 OAP, with twenty-two initiatives spread across five departments. In 2012–13 and 2013–14, one-year funding extensions were granted for HOTO, although in the latter case the scope was narrowed as some initiatives were completed and others, such as Transport Canada's National Aerial Surveillance Programme of pollution monitoring and prevention, were rolled under other funding umbrellas. In the February 2014 budget, five-year funding was included under what is now the National Conservation Plan. Funding of CAN\$37 million was announced by the prime minister on 15 May 2014 to 'strengthen marine and coastal conservation' (Prime Minister of Canada, 2014a).

### **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 (NABST), following extensive public consultations, recommended to the prime minister that Canada move decisively to address environmental issues confronting oceanic areas and to maximize the economic benefits that could be derived by managing ocean resources more sustainably (NABST, 1994). 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 (Commissioner of the Environment and Sustainable Development, 2005). As a result of this heightened profile, drafting of a comprehensive Oceans Act was initiated and the resulting 1996 Act came into force on 31 January 1997.

### ***The Oceans Act***

The Oceans Act comprises three parts. 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 1982 United Nations Convention on the Law of the Sea (UNCLOS), Canada has defined its territorial sea, contiguous zone, exclusive economic zone (EEZ), and continental shelf excluding the outermost extent. Canada has worked diligently to delimit the outer extent of the continental shelf and submitted its initial submission to the Commission for the Limits of the Continental Shelf by the required deadline in December 2013. A full submission was delivered for the Atlantic Ocean, but only preliminary information for the Arctic (Foreign Affairs, Trade and Development Canada, 2013).

Part Two of the Act provides the Minister of Fisheries and Oceans with specific policy and programme 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 (section 29). Finally, the Act includes provisions for the development of specific programme areas: marine protected areas (MPAs), and integrated management plans. In addition, for purposes of implementing integrated management plans, the Minister may establish marine environmental quality guidelines, objectives, and standards (section 32), and there is provision to prescribe marine environmental quality requirements and standards through regulation (section 52(1)). These programmes are the key tools used to implement the national ocean policy objectives: understanding and protecting the marine environment, supporting sustainable economic opportunities, and providing 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, coastguard, and other responsibilities of the department within an oceans management context.

Following adoption of the Oceans Act, the DFO reallocated modest funds to support its implementation through a series of pilot projects and the development of Canada's Oceans Strategy (Fisheries and Oceans Canada, 2002a) 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 the identification of areas of interest for MPAs and the announcement of several pilot MPAs, such as the Sable Gully and Endeavour Hot Vents in 1998 (Fisheries and Oceans Canada, 1998). Pilot integrated management initiatives were also established in the areas of the Eastern Scotian Shelf (ESSIM) in 1998, the Beaufort Sea in 2000, and the Pacific North Coast of British Columbia (PCIMA) in 2001 (Commissioner of the Environment and Sustainable Development, 2005). The final two pilot projects, Placentia

Bay – Grand Banks (PBGB) and Gulf of St Lawrence (GOSLIM), were identified by 2005. The pilot projects provided lessons with respect to policy integration, the building of relationships, the development of governance structures, and related arrangements.

The policy development process continued its course with two public engagement and consultation processes. The first was focused on the vision for the Oceans Act (Fisheries and Oceans Canada, 1994); the other focused on a structured consultation on Canada's Oceans Strategy and was designed to solicit federal, provincial, First Nations, and public input. Over a period of five years, the DFO engaged the views and perspectives of Canadians by supporting a wide range of discussions, workshops, and consultation activities across the country. Two Oceans Ambassadors and a Minister's Advisory Council on Oceans played key roles in the consultations.

### **Canada's Oceans Strategy**

Canada's Oceans Strategy (Fisheries and Oceans Canada, 2002a) and its companion Integrated Management and Operational Framework (Fisheries and Oceans Canada, 2002b) were released in 2002 following formal federal, provincial, territorial, aboriginal, and public consultations. Presented to Cabinet, the Oceans 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 (Fisheries and Oceans Canada, 2002a). The following fundamental principles are set out in the Oceans Act and Canada's Oceans Strategy:

- *integrated management* – to 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* – to integrate social, economic, and environmental aspects of decision-making; and
- *the precautionary approach* – to 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 (Cicin-Sain and Knight, 1998). The plan provides a framework within which to conduct activities, and 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, to share responsibility for achieving common objectives, and to engage Canadians in ocean-related decisions in which they have a stake (Fisheries and Oceans Canada, 2002a). 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 that oversee the management of oceans activities; its primary focus is planning and managing activities on a geographic, but also on an ecological, basis. The ecological link is key, since it ties back to the principles of the Oceans Act, including the adoption of an ecosystem-based approach.

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. The ability to adapt management decisions to reflect new scientific and technical developments, to reflect 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 should err on the side of caution. Within the context of oceans management, application of the precautionary principle is inextricably linked to two other concepts: an ecosystem-based and a science-based approach to decision-making (Cobb et al., 2005).

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 on both 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 recommendation by NABST's Committee on Oceans and Coasts (NABST, 1994) that Canada formulate an overall oceans policy framework and develop ocean-focused legislation, a ministerial Vision Paper on oceans management was released (Fisheries and Oceans Canada, 1994). 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 (NGOs), aboriginal peoples, coastal communities, and academics, broadened the scope of the Act.

The DFO also led the development of Canada's Oceans Strategy (Fisheries and Oceans Canada, 2002a), incorporating the lessons learned from the pilot application of the Oceans Act programme and the views expressed during public engagement processes led by Oceans Ambassadors appointed by the Minister. Policy development entailed consulting a range of governmental and non-governmental stakeholders, and using different mechanisms to connect with subnational and aboriginal authorities, and the academic community. Between 1997 and 2002, the DFO engaged the views and perspectives of Canadians by supporting a wide range of discussions, workshops, and consultation activities across the country. These activities included a discussion document, *Toward Canada's Oceans Strategy* (Fisheries and Oceans Canada, 1997c), interactive websites, public opinion polls and research, an international Oceans Stewardship Conference (Fisheries and Oceans Canada, 2001a), international workshops on integrated management, cross-country consultation sessions, a Minister's Advisory Council on Oceans (Fisheries and Oceans Canada, 2002c), and a national oceans discussion series in cooperation with the Canadian Broadcasting Corporation (CBC) and the International Oceans Institute of Canada (CBC, 2001). Bilateral meetings were conducted with key national stakeholders, including environmental NGOs, industry organizations, 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 the DFO, coordination and collaboration are required at many levels to create the environment in and tools with which to implement such a horizontal collaborative initiative. Governance arrangements and processes are described next, and Table 3.1 offers an indication of the complexity of these relationships.

A Minister's Advisory Council on Oceans was established in September 2000 for a three-year term to provide advice on ocean management policy issues and to help to engage the public and private sectors in issues related to oceans management (Fisheries and Oceans Canada, 2002c). The Council consisted of nine individuals from diverse backgrounds representing a range of interest groups, including aboriginal peoples, industry members, and academics (Fisheries and Oceans Canada, 2000). As such, the Council was instrumental in increasing public understanding and awareness of the nature and intent of Canada's ocean management approach.

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 to develop and implement Canada's Oceans Strategy (Canadian Council of Fisheries and Aquaculture Ministers, 2001). For a decade, this Task Group provided a forum for federal-provincial issues on oceans management, with its work guided by an annual work plan approved by ministerial council.

To aid federal government coordination and input to ocean policy development, a system of interdepartmental committees on oceans (ICOs) was established at the deputy minister, assistant deputy minister, and programme levels. In 2004, interdepartmental working groups were formed to focus on the four 'pillars' set out in Canada's Oceans Action Plan – that is, international leadership, sovereignty and security, integrated oceans management for sustainable development, health of the oceans, and oceans science and technology (Fisheries and Oceans Canada, 2004a).

Overall, the various governance mechanisms and agreements were effective in developing a policy framework and action plan that reflected a range of stakeholder interests. These front-end initiatives were endorsed at the highest levels of government.

## **The nature of the policy and legislation established**

### ***The nature of the resulting policy***

The Oceans Act is enabling legislation, designed to provide the Minister of Fisheries and Oceans with the responsibility of focusing current federal legislative and policy tools to increase the linkages among and overall effectiveness of federal government efforts in specific geographic areas. This collaborative aspect of the legislation is the most challenging to implement, in that willing partners are needed to advance ocean management. Intergovernmental agreements have been required, as well as negotiations with industry and aboriginal authorities. Implementation of Oceans Act programmes have moved at different paces in different areas, with more rapid progress achieved in ocean management areas in which collaborative mechanisms were already in place. As lead and facilitator, the DFO 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 neither supersede nor fetter other policies or statutes, but provide the context within which other ocean-related mandates should operate. On this basis, both the Act and Canada's Oceans Strategy (Fisheries and Oceans Canada, 2002a) provide the broad framework to guide further federal policy development to work with other levels of government and provide a new context within which to interpret older policies.

Table 3.1 National, subnational, and local oceans governance structures and agreements

<i>Examples of governance structures</i>		<i>Examples of agreements</i>	
	<i>National</i>	<i>Subnational</i>	<i>Local</i>
International	Membership in international committees, councils, and science organizations, including regional fisheries management organizations, the Arctic Council, Asia-Pacific Economic Cooperation (APEC), the International Maritime Organization (IMO), and the Intergovernmental Oceanographic Commission (IOC)		
Other government departments (OGDs)	Deputy ministers' committee Support committees (assistant deputy and director general level)	Subnational implementation committees	OGD planning or regulatory processes
Provinces and territories	Canadian Council of Fisheries and Aquaculture Ministers' Oceans Task Group	Regional oceans management committees in most large ocean management areas (LOMAs)	Lead on coastal planning
Aboriginal organizations		Co-management bodies established pursuant to the Inuvialuit Final Land Claims Agreement directly involved in Beaufort Sea ocean management planning bodies	Planning process/traditional ecological knowledge consultation
<i>Stakeholders</i>			
<i>Local communities</i>	<i>Subnational implementation committees</i>	<i>Advisory/planning process</i>	
Industry stakeholders	Subnational implementation committees	Advisory/planning process	Ocean Management Research Network Canadian Association of Petroleum Producers/Statement of Canadian Practice with respect to the Mitigation of Seismic Sound in the Marine Environment
Oceans interest groups	Subnational implementation committees	Advisory/planning process	Membership on Canadian delegations

Together, they provide the principles and key tools with which 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 programmes, are solidly anchored on precaution, ecosystem-based management, and sustainable development, these principles are, by definition, embedded in decisions that will be taken within the integrated management planning areas.

### ***The 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 – that is, from large ocean management areas (LOMAs) to smaller scale (for example in Newfoundland and Labrador) coastal management areas (CMAs) (VanderZwaag et al., 2012: 332). In other ocean regions, scale has evolved beyond the initial LOMA, for example since the Eastern Scotian Shelf Integrated Management (ESSIM) plan was developed, the planning area has expanded conceptually to the bio-region scale, including the entire Scotian Shelf and the Bay of Fundy. The Canadian approach to integrated management recognizes that management objectives and planning practices should reflect the fact that ecosystems nest within other ecosystems. Governance structures, practices, and decisions respecting resource and activities management should be made with explicit consideration of ecosystem impact. The logic is that the precautionary approach is built into integrated management through the identification of ecosystem objectives that activities must respect within specified planning areas. The practice has proven to be a significant – and ongoing – challenge. 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 Preamble to 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. The Act further holds that human activities should be managed such that marine ecosystems – their structure (for example biological diversity), function (for example productivity), and overall environmental quality (for example water and habitat quality) – are not compromised, and are maintained at appropriate temporal and spatial scales. It is in these key areas that ecosystem objectives will be set for each of the integrated management areas (Cicin-Sain, 2003).

Significant domestic and international efforts have been invested in making this principle operational (IOC, 2003). In 2001, Canada held a scientific workshop to develop a preliminary framework that had conservation of species and habitats and the sustainability of human use as its two overarching objectives (Jamieson et al., 2001). Work has continued in Canada, and internationally, to further refine the initial objectives identified at this meeting. Three overarching ecosystem objectives have been identified: to maintain populations, species, and



communities within bounds of natural variability; to conserve the function of each component of the ecosystem so that it can play its natural role in the food web; and to conserve the physical and chemical properties of the ecosystem (Jamieson et al., 2001: 16–20). This work has resulted in the development of a process and tools with which to apply ecosystem-based management to decision-making within Canada’s LOMAs.

Implementation of ecosystem-based management begins with the identification of marine eco-regions, which are based on ecological features and functions (Powles et al., 2004). 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, ecologically and biologically significant species, and community properties, as well as degraded areas and depleted species of special concern, are identified (Fisheries and Oceans Canada, 2005b). Priority ecosystem-based conservation objectives and limits are defined within these eco-regions. Management decisions and the choice of management measures adopted are informed by the conservation objectives (Fisheries and Oceans Canada, 2004b). As the approach has evolved and in an effort to provide a better focus for effort with limited resources, a risk management approach has been layered throughout the integrated oceans management process. Thus, as Figure 3.1 reveals, in the current version of the six-step process, risk management assessment tools have been refined to guide management action.

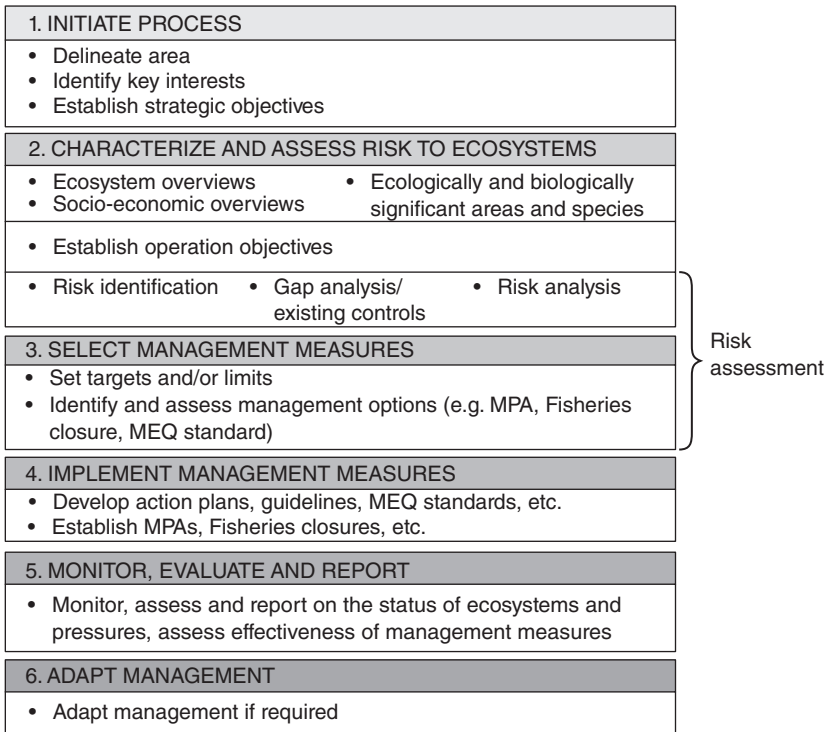


Figure 3.1 The six-step integrated oceans management process

Source: Fisheries and Oceans Canada (undateda)

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 conservation objectives that must be respected by any activity to be operated in the planning area if the ecosystem is to continue to function and sustain the pressures of resource extraction and other ocean uses. Once the 'conservation limits' are defined, the Canadian integrated management process focuses on the identification of social, cultural, and economic objectives or desirable targets that subnational and local governments, stakeholders, and the 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 in which relatively unique and highly sensitive marine ecosystems are known to exist, and in which 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 the application of management measures. These measures include:

- fishing gear modifications, mesh and hook size considerations, and other measures to ensure that fishing practices conform to specific habitat conservation requirements;
- the application of seasonal and area fishing closures or gear-type closures if impacts cannot be mitigated;
- the establishment of marine protected areas (MPAs) in which long-term protection measures cannot be adequately addressed through fishing closures and other measures; and
- monitoring of the area for compliance and management effectiveness.

However, ecosystems do not respect political or administrative boundaries. As a result, it has been important to give effect to the concept of collaborative planning and management systems (O'Boyle and Jamieson, 2006). Domestic decision-making across ecosystems needs to be connected by the participation of federal, provincial, territorial, aboriginal, and local authorities and programmes. The minister has the option to use bilateral agreements with provinces or territories, and co-management arrangements with aboriginal groups, to implement and achieve ecosystem objectives. For example, in 2004, the governments of Canada and British Columbia signed the Memorandum of Understanding Respecting the Implementation of Canada's Oceans Strategy on the Pacific Coast of Canada (Fisheries and Oceans Canada, 2004c), with a commitment to develop sub-agreements focused on integrated management, MPAs, and information-sharing, although political differences have stymied the actual conclusion of further subsidiary memoranda of understanding (McCrimmon and Fanning, 2010). In the Arctic, the Beaufort Sea Integrated Management Planning Initiative (BSIMPI), guided by the Senior Management Committee, a collaborative body composed of representatives from government, aboriginal, and industry stakeholder groups (Elliott and Spek, 2004; Siron et al., 2009), developed the 2009 Integrated Management Plan. Ongoing leadership and direction is provided by a regional coordination committee under what is now called the Beaufort Sea Partnership. Regionally, agreements have been signed at the senior management level, for example the 2011 Canada–Nova Scotia Memorandum of Understanding, which focuses on the development of a bioregional network plan for conservation.

Ecosystem-based management objectives for LOMAs are set at the scale of ecosystem or broad eco-region. Integrated management planning units, and sectoral management plans nested within these areas, do not necessarily correspond to an entire eco-region. Consequently, the Oceans Act, section 32(d), provides the authority to set marine environmental quality guidelines, requirements, and standards, which can be specific to one particular planning area, but can also apply to activities across bioregions and complement the broader-scale ecosystem objectives.



Monitoring programmes tied to the eco-region-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.

Canada's Fisheries Act, the main legislative tool to protect ecosystems on which fish depend, was amended in 2012 and the habitat protection provisions were substantially curtailed.<sup>2</sup> The previous habitat protection provision (section 35) was broad and quite strong. It prohibited persons from carrying on any work or undertaking that resulted in the harmful alteration, disruption, or destruction of fish habitat except under conditions authorized by the Minister of Fisheries and Oceans or under regulations pursuant to the Fisheries Act. The new provisions prohibit persons from carrying on any work, undertaking, or activity that results in serious harm to fish that are part of a commercial, recreational, or aboriginal fishery, or to fish that support such a fishery (that is, food chains). Therefore various habitat protections were potentially removed, for example water bodies not subject to a fishery such as salt marshes (Hutchings and Post, 2013).

Implementation of the ecosystem approach at the bilateral and regional levels has been varied. For example, while Canada has supported formal adoption of the ecosystem approach within the Northwest Atlantic Fisheries Organization (NAFO), along with various closures to bottom trawling to protect vulnerable marine ecosystems, Canada's transboundary management arrangements with the United States in the Gulf of Maine, and with St Pierre and Miquelon in the North Atlantic, have largely focused on the allocation and conservation of a limited number of commercially important fish stocks (Russell and VanderZwaag, 2010a).

### *Integrated management*

Recognizing that integration must carry over to the planning of conservation areas as well, the Oceans Act, section 35(2), calls for the Minister of Fisheries and Oceans to lead and coordinate the development and implementation of a national system of MPAs on behalf of the government of Canada (Fisheries and Oceans Canada, 1999b). Three federal agencies – the DFO, Parks Canada, and Environment Canada – are mandated to establish federal MPAs, and provincial authorities also are active in protecting areas within their areas of jurisdiction (Government of Canada, 1998). To maximize the effectiveness of federal intervention and to ensure that the appropriate tools are being used, the DFO, along with other federal departments, developed a Federal Marine Protected Areas Strategy to achieve a national network of MPAs (Government of Canada, 2005a). Efforts to broaden the national network to include provincial and territorial MPAs resulted in the National Framework for Canada's Network of Marine Protected Areas (Government of Canada, 2011) and development of an inventory of existing federal, provincial, and territorial MPAs to inform the gap analysis phase of the National Network's development (Government of Canada, 2010). The involvement of federal, provincial, and territorial authorities in the five integrated oceans management priority areas within which ecologically and biologically significant areas, significant species, and significant community properties have been identified has facilitated network design. Under the National Conservation Plan, efforts are now under way to advance this work.

As part of the Oceans Action Plan (OAP), implementation of integrated management focused on five priority geographic areas in which mandated federal, provincial, territorial, and aboriginal authorities were working cooperatively to develop integrated ocean management plans: Placentia Bay/Grand Banks off Newfoundland; the Scotian Shelf off Nova Scotia; the Beaufort Sea in the western Arctic; the Gulf of St Lawrence; and the Pacific North Coast, or Queen Charlotte Basin, off British Columbia (see Figure 3.2). As they move beyond the pilot

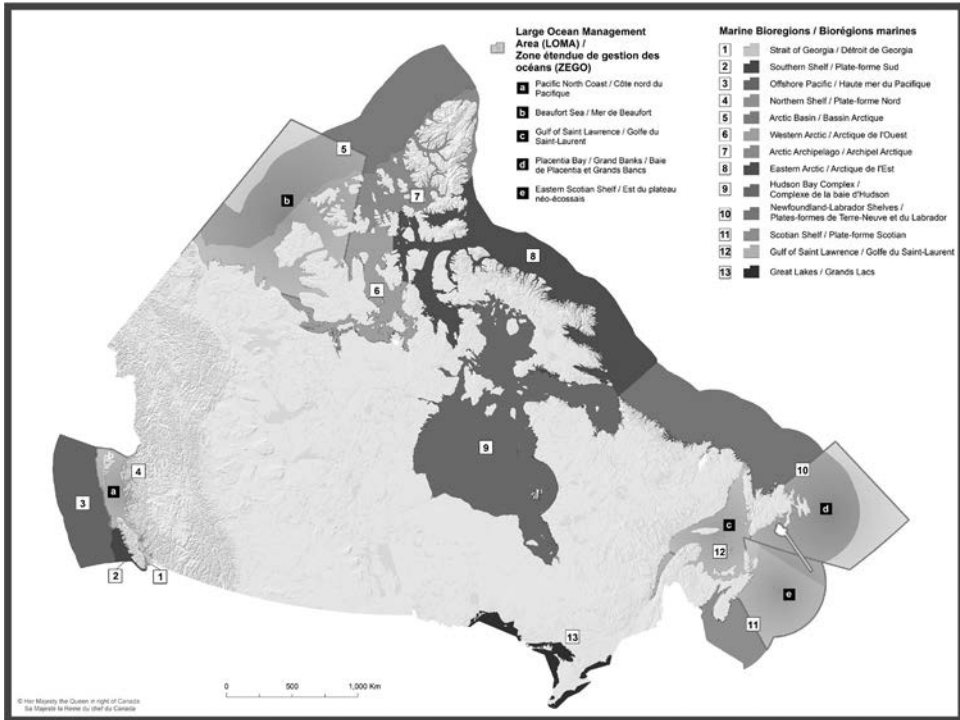


Figure 3.2 Priority bioregional integrated management planning areas

Source: Department of Fisheries and Oceans Canada, July 2014.

stage and as the DFO's knowledge of ecological properties has improved, these areas have been modified to become bioregional planning areas. In some regions, the boundaries have largely remained the same (such as the Pacific), while in others areas the boundaries have changed significantly (for example the Scotian Shelf).

Activities undertaken within each of the planning areas include the assessment and overview of the state of health of marine ecosystems, which provides mandated authorities and stakeholders with information on marine and coastal ecosystems, and recommendations to support planning and management decisions. In collaboration with the Geological Survey of Canada, the DFO undertook seabed mapping to better characterize benthic habitats, to define bottom communities, and to support identification of the most appropriate management actions (Fisheries and Oceans Canada, 2005a). Areas, species, and community properties in need of special management and/or conservation measures have also been identified, as have degraded areas and depleted species. Governance arrangements to foster federal, provincial, territorial, and aboriginal collaboration were established, as were forums to engage citizens and stakeholders.

While some of these activities were already well advanced in some of the priority LOMAs as a result of previous federal investments and efforts, the additional funds and the more visible accountability attached to the special budget allocations supported implementation of OAP initiatives (Fisheries and Oceans Canada, 2005a) within a prescribed period of time. The final draft of the ESSIM Plan was released in July 2006 (ESSIM Planning Office, 2006), while the Integrated Oceans Management Plan for the Beaufort Sea Large Ocean Management Area was

released in 2010 (Fisheries and Oceans Canada, 2010a). In the other priority LOMAs of the Pacific North Coast, the Gulf of St Lawrence, and Placentia Bay/Grand Banks, ecosystem overview reports and assessments, as well as other key pieces such as identification of ecologically and biologically significant areas, species, and properties, conservation objectives' prioritization, and human use overviews, were completed. By 2014, the three remaining plans had been released (Fisheries and Oceans Canada, undated<sup>b</sup>), although significant challenges have meant that the plan for the Pacific North Coast (PNCIMA, 2013) is still in draft form.

Integrated management is more than the development of spatially based management plans. Effective management requires integration at a variety of levels (Chircop and Hildebrand, 2006). There are numerous examples of spatial integration in which efforts between provincial authorities, responsible for land-based issues and inter-tidal 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 MPAs. For example, coastal sand dunes adjacent to the Basin Head Marine Protected Area, off Prince Edward Island, have been protected under the authority of the provincial Natural Areas Protection Act (Government of Canada, 2005b). In June 2010, a ground-breaking agreement was signed to establish the Gwaii Haanas Marine Area, a National Marine Conservation Area and Haida Heritage Site, to integrate with the existing land area for a unique mountain top to deep sea conservation area (Parks Canada, undated<sup>d</sup>). In March 2011, Canada and Nova Scotia signed a memorandum of understanding pledging to strengthen cooperation in coastal and oceans management, with subsidiary agreements and/or working groups to be developed (Government of Nova Scotia, 2011).

In British Columbia, integrated ocean and coastal planning has taken place at both the federal and provincial levels, and has varied over time in terms of leadership focus, resources, and level of collaboration. In the 1990s, the provincial government ventured first into marine planning, seeking to apply principles of land-use planning to marine areas in the Central Coast, with the goal of addressing use conflicts and First Nations concerns. The federal government followed, with the Pacific North Coast Integrated Management Area (PNCIMA) planning exercise for the North Coast, working well with First Nations and the province until 2011, when issues arose over US Moore Foundation funding through Tides Canada of some federal, provincial, and aboriginal components of the planning exercise. Lobbying by shipping and energy interests, linked to Northern Gateway pipeline and other North Coast energy proposals, moved the federal government to withdraw from the funding agreement, which offered significant resources (up to CAN\$8.3 million) to PNCIMA marine planning (Living Oceans Society, 2011). The federal government indicated that a streamlined plan to meet timelines no longer required funds for additional science and consultation (O'Neil, 2012; BC Shipping News, 2011). With the federal retreat to a high-level strategic plan, the Province of British Columbia and northern coastal First Nations forged ahead with the Marine Planning Partnership for the North Pacific Coast (MaPP), and in the spring of 2014 released draft plans for public input for four coastal area sub-regions, including a Haida Gwaii Draft Marine Plan (MaPP, undated). Federal participation in the MaPP process to date has been limited and issues remain over how to address federal jurisdiction (such as fishing) issues in the MaPP plans.

There are numerous opportunities for science and spatial co-location of federal and provincial science programmes 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 Areas Strategy by the DFO, Parks Canada, and Environment Canada. The strategy requires the three federal agencies with

MPA mandates to establish a network of MPAs, to integrate information, to engage public interests, and to determine the best means with which to achieve the objectives of the MPA (Government of Canada, 2005a).

Integration among sectors is multifaceted. One example was the establishment of ONE OCEAN in 2002. This stakeholder-driven information and public education group was established in Newfoundland by leaders in the oil and gas industry and the fishing industry to resolve issues of common concern by means of informal interventions and information exchanges (ONE OCEAN Secretariat, 2003). A further example is the ongoing coordination of activities of the submarine cable industry and the fishing industry by the DFO, Maritimes Region, to address concerns and conflicts around the location of fibre optic cables.

At the international level, Canada worked with the United States and the Intergovernmental Oceanographic Commission (IOC) to develop a handbook on the identification and use of governance, socioeconomic, and ecological objectives, and related indicators (IOC, 2006). These objectives and indicators measure the effectiveness of integrated coastal and oceans management.

### *The precautionary approach*

Canada has recognized the importance of the precautionary approach in key legislation and policy documents. The Preamble to the Oceans Act calls for a precautionary approach to marine resources management. Section 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), for example, requires that administrative decisions under the Act, such as whether to allow new chemical substances into Canada, follows the precautionary principle. The 1999 Act also encourages pollution prevention approaches. The Canadian Environmental Assessment Act, 2012, section 4(2), requires officials administering the Act to exercise their powers in a manner that protects the environment and human health, and which applies the precautionary principle. However, the 2012 Act leaves considerable discretion as to which projects will be subject to environmental assessment other than projects under the authority of the Canadian Nuclear Safety Commission (CNSC) or the National Energy Board (Doelle, 2012).

Through an interdepartmental consultation process, Canada has developed guiding principles to be followed by departments or agencies in applying precaution. The Framework for the Application of Precaution in Science-based Decision Making about Risk is broad and applicable to all federal mandates (Government of Canada, 2003).

The Framework is, however, only one element that guides implementation of the precautionary approach. In oceans management, the primary guidance for the precautionary approach remains Canada's Oceans Strategy (Fisheries and Oceans Canada, 2002a) and, in more detail, the Policy and Operational Framework for Integrated Management (Fisheries and Oceans Canada, 2002b: 9). The latter specifies that priority will be given to maintaining ecosystem health and integrity, especially in the case of uncertainty. The DFO's Aquaculture Policy Framework also notes the need for aquaculture development to occur in the context of a precautionary approach (Fisheries and Oceans Canada, 2002d: Principle 2). Other DFO policies, such as the Wild Pacific Salmon Policy (Fisheries and Oceans Canada, 2005c), the New Emerging Fisheries Policy (Fisheries and Oceans Canada, 2001b), 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 (Sheppard et al., 2005).

Application of the precautionary approach to fisheries has been receiving increased attention. A Policy on New Fisheries for Forage Species explicitly urges the precautionary approach to be followed, whereby biomasses of forage species used as limit reference points in management should ensure both the non-impairment of future recruitment of target species and the non-depletion of food supply for predators (Fisheries and Oceans Canada, 2009c). A Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas recognizes the special need for precaution in managing fishing activities in areas of the Arctic and waters deeper than 2,000 metres, for which little or no information is available regarding the benthic features (Fisheries and Oceans Canada, 2009d). A Fishery Decision-Making Framework Incorporating the Precautionary Approach has been adopted that encourages the categorization of fish stocks into three status zones ('healthy', 'cautious', and 'critical') by means of the use of precautionary reference points (Fisheries and Oceans Canada, 2009e).

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 in a 'reverse listing' approach, under which only wastes on an acceptable list may be disposed of at sea (CEPA 1999, Schedule 5). Although the Fisheries Act, section 36(3), 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 that do not explicitly emphasize pollution prevention and precaution. New regulations, adopted in April 2014, will allow ministerial regulations to be passed, authorizing various other deposits including from aquacultural operations.<sup>3</sup>

Tensions have arisen in Canada over how the precautionary principle or approach should be applied (VanderZwaag, 1998; VanderZwaag et al., 2002–03). For example, concerns have been raised with respect to the potential risks associated with escapees and the possible spread of parasites from finfish aquaculture operations. There have been calls for the removal of existing open-pen salmon farms and the prohibition of new farms (Leggatt, 2001). Instead of a prohibitory approach to precaution, governments have largely responded with various regulatory and licensing controls to mitigate the impact of fish farms, including mandatory monitoring programmes with specific intervention measures (British Columbia Ministry of Agriculture and Lands, 2005). In May 2013, the government of Nova Scotia appointed a two-person independent panel to review the adequacy of the province's existing aquaculture regulatory framework, and the panel is expected to finalize its recommendations by the end of 2014 (Government of Nova Scotia, 2013).

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>4</sup> Justice L'Heureux-Dubé referred to the wide acceptance of the precautionary principle in international law and policy, and relied on the principle to help to 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 to inform the contextual approach to statutory interpretation and judicial review (Chapman, 2002).

Canada is also party to various international bodies, working groups, regional fisheries management organizations, and international scientific organizations within which the precautionary approach continues to evolve, and implementation tools have been developed for fisheries.<sup>5</sup> A study of Canada's transboundary fisheries management arrangements identifies two continuing challenges in putting precaution into practice: the common overriding of precautionary scientific advice, and limited scientific information and understanding (Russell and VanderZwaag, 2010b).

At a meeting of officials from the five Arctic Council states in Nuuk, Greenland, 24–26 February 2014, Canada supported moving forward with precautionary interim measures

to prevent unregulated fishing in the central Arctic Ocean beyond national jurisdiction. The meeting agreed to develop a Ministerial Declaration for signature or adoption by the five states, and the meeting looked forward to a broader process of engaging additional states in taking interim measures.<sup>6</sup>

### *Public participation and community-based management*

Canadian ocean management policy supports a commitment to citizen engagement, although the strength of that commitment and the capacity to undertake it has varied with the stage of development of policy and over time. The overall objective is to create governance mechanisms that foster a greater involvement of the people most affected by decisions. The LOMAs primarily address large-scale ecosystem and economic development issues; they also provide the context for nesting a network of smaller areas or other ocean management tools, such as MPAs.

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. At least in the formative stage, and in keeping with the enabling (rather than directive) and collaborative nature of the Oceans Act, oceans management programmes in Canada clearly directed and enabled community involvement in the design and management of integrated management plans and MPAs (Fisheries and Oceans Canada, 2003). As the programme evolved and focused, and (arguably) resources and capacity declined, public participation became much more targeted on specific initiatives or issues,

Coastal management areas (CMAs) enable communities to play a stronger role in issues affecting their future by matching local capabilities and development priorities to the opportunities and carrying capacity of the local ecosystem. Local economic issues, such as inshore fisheries, conventional tourism and ecotourism, aquaculture sites, ports, and other transportation facilities, may all be matters considered. Following initial pilots, particularly in Quebec and the Newfoundland and Labrador regions, resource limitations, capacity to deliver on plans, and other issues led to a focus at the LOMA level. In some cases, provinces have taken on a more expansive coastal and marine role, for example in British Columbia, Newfoundland and Labrador, New Brunswick, and Nova Scotia (Ricketts and Hildebrand, 2011: 15).

### *Authority at the 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, subnational and local bodies to assist with the implementation plans;
- establish and enforce measures or regulations associated with MPAs; and
- develop marine environmental quality guidelines.

In the October 2004 Speech from the Throne, the government of Canada made the 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.

(Government of Canada, 2004a: 13)

The government also made a significant investment in strengthening initiatives related to international fisheries and oceans governance. These efforts were focused on improving compliance within the Northwest Atlantic Fisheries Organization (NAFO), creating conditions for change, and strengthening global fisheries and oceans governance.

With the endorsement of the government-wide Oceans Action Plan (OAP), seven federal departments were responsible for the delivery of specific elements of this national work plan. Their tasks ranged from international coordination, completion of ecosystem overview reports, and developing governance arrangements to seabed mapping. Table 3.2 identifies the key activities in Phase 1 of the OAP.

An Oceans Action Plan Secretariat coordinated integration of the interdepartmental efforts to deliver the OAP. In addition to housing the Secretariat, the DFO is responsible for the implementation of ocean programmes key to plan implementation (integrated management, MPAs, and marine environmental quality). While the coordination role continued in terms of tracking and evaluation of results, the original thematic subgroups did not meet once the funding was in place and the renewal efforts took a more centralized approach. In the end, funding was approved only for the Health of the Oceans (HOTO) theme in the 2007 budget. This created challenges for the implementation of the OAP, but the DFO, and other departments, reacted to the changed environment by practising adaptive management and continuing work on the Plan – particularly the legislatively mandated integrated management component through focus on the LOMAs and on advancing the science necessary for decision-making.

### ***The national and subnational 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 strong provincial/territorial desire and a practical need for subnational engagement. In the formative years, the federal, provincial, and territorial governments collaborated under the auspices of the Canadian Council of Fisheries and Aquaculture Ministers (CCFAM), through the Oceans Task Group (Canadian Council of Fisheries and Aquaculture Ministers, 2001) and, more recently, through existing and developing regional governance mechanisms, to develop joint work plans and approaches. The development of a national framework for a network of MPAs is a good recent example of working through a federal–provincial/territorial mechanism to achieve results in a challenging and potentially conflictual environment (Government of Canada, 2011).

An Aquaculture Task Group under the CCFAM, composed of both federal and provincial representatives, facilitated discussions on clarifying and coordinating federal–provincial

Table 3.2 Key activities of Phase 1 of Canada's Oceans Action Plan 2005–07

<i>OAP Phase 1 initiative</i>	<i>Key activities</i>
<i>International leadership, sovereignty, and security</i>	
1 Gulf of Maine Canada–United States collaboration	Joint ecosystem overview and objectives setting for integrated management planning
2 Arctic Marine Strategic Plan	Eight countries address key issues in the 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
<i>Integrated management in large ocean management areas (LOMAs)</i>	
4 Ecosystem overview and assessment reports	Review and assessment of scientific knowledge in five LOMAs
5 Ecologically and biologically significant areas (EBSAs)	Identification of areas and species requiring special management measures in LOMAs
6 Seabed mapping	Characterization of habitat in LOMAs
7 Ecosystem objectives (EOs)/Smart regulations	Ecosystem-specific EOs and possible regulatory options
8 Economic assessment and analysis	Documentation of value of activities in support of integrated management planning
9 Targeted subnational consultations	Engagement of affected and responsible parties in LOMAs and MPAs
10 Agreements with provinces, territories, and aboriginal authorities	Development of agreements on roles and responsibilities
11 Subnational management and advisory bodies	Intergovernmental and stakeholder for LOMA planning and management
<i>Health of the oceans</i>	
12 Oceans Act MPAs	Key MPAs designated by 2007
13 Canadian Wildlife Service marine wildlife areas	Key marine wildlife areas designated
14 National Marine Protected Area Strategy to establish a network	Implementation of federal MPA strategy to establish a network
15 Science research and advice for MPAs	Development of tools, including selection criteria for EBSAs
16 Ballast water and marine pollution regulations	Science support and completion of the regulatory process
17 Pollution prevention surveillance for sea-based sources	Increased surveillance
<i>Oceans science and technology</i>	
18 Oceans technology network	Support of technology networks and research priorities
19 Placentia Bay Technology Demonstration Project	Integration of real-time data to support oceans management decisions



responsibilities in relation to aquaculture (Canadian Council of Fisheries and Aquaculture Ministers, 2006). In November 2010, the CCFAM endorsed the National Aquaculture Strategic Action Plan Initiative 2011–15 (NASAPI), which sets out a strategic vision for ensuring environmental, social, and economic sustainability in the aquaculture sector (Fisheries and Oceans Canada, 2010b). The NASAPI indicates that the CCFAM Strategic Management Committee, composed of senior managers for each province/territory and the federal government, will oversee implementation and preparation of annual progress reports. The NASAPI is supplemented by five specific action plans, covering East Coast shellfish, East Coast finfish, freshwater aquaculture, West Coast shellfish, and West Coast finfish (Fisheries and Oceans Canada, 2010b: 14).

The substantial delegation of licensing authority over aquaculture by the federal government to provinces (VanderZwaag et al., 2006) has been the subject of litigation, and a shift towards federal licensing in British Columbia has occurred in the wake of litigation. On 9 February 2009, British Columbia's Supreme Court, concluding that marine finfish aquaculture is a fishery and therefore subject to exclusive federal jurisdiction, declared that much of the provincial regulatory regime was beyond the province's constitutional jurisdiction.<sup>7</sup> The federal government subsequently issued the Pacific Aquaculture Regulations in 2010. The Regulations establish a federal aquaculture licensing regime applicable to internal waters and the territorial sea, and allow various licensing conditions to be imposed, such as measures to minimize the escape of fish and measures to minimize the impact on fish habitat.

Management and advisory bodies are currently in place to support specific integrated management plans and MPA management plans. The bodies generally include federal and provincial/territorial representation, and they provide a forum for stakeholders, including industry, academia, NGOs, aboriginal peoples, and citizens. Their goals are to provide ongoing communication, information-sharing, and input, and to effectively inform oceans management planning processes. As integrated ocean management plans are completed, the role of these bodies shifts to targeted measures to implement the plans.

Various other federal–provincial coordination mechanisms also exist. For example, councils of federal–provincial/territorial ministers 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 (Penick, 2001; Taylor and Dickey, 2001). The boards are responsible for reviewing the environmental impacts of proposed offshore hydrocarbon activities and for imposing operational conditions.<sup>8</sup> With the hope and expectation of a vibrant offshore marine renewable energy industry, a joint process is evolving to streamline the review of project proposals in this new field, with an initial focus on tidal energy in the Bay of Fundy.

### ***The 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 the United States and Mexico through the Commission for Environmental Cooperation (CEC) since 1994 (CEC, 2003). Canada also participates in the Arctic Council,<sup>9</sup> which provides a mechanism for eight circumpolar nations to collaborate with respect to addressing Arctic marine environmental issues (Kiovurova and VanderZwaag, 2007; VanderZwaag, 2014b).

While a broad array of international environmental agreements have relevance to the oceans, this chapter briefly discusses Canada's implementation efforts and challenges under five key documents:

- the 1982 United Nations Convention on the Law of the Sea (UNCLOS);
- the 1992 Convention on Biological Diversity (CBD);
- the 1973 International Convention for the Prevention of Pollution from Ships, as amended by the Protocol of 1978 (MARPOL);
- the 1996 Protocol to the London Convention; and
- the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities.

### *The 1982 UN Convention on the Law of the Sea*

Although Canada was a leading country in negotiations for UNCLOS and signed the Convention in 1982 (McDorman, 1988: 536–8), it did not ratify the Convention until 7 November 2003, with the Convention entering into force for Canada on 7 December 2003 (McDorman, 2004). Delays in ratification were, in part, the result of deep concerns relating to high seas and straddling stock fisheries issues. Canada had already, under the Oceans Act, incorporated into domestic law its maritime zones and the jurisdictional entitlements set out in UNCLOS – namely, a 12 nautical mile territorial sea, a contiguous zone out to 24 nautical miles from the territorial sea baselines, a 200 nautical mile exclusive economic zone (EEZ), and a continental margin extending beyond the EEZ, in accordance with Article 76 of UNCLOS.

Federal funding enabled Canada to undertake the process of delimiting the outer extent of its continental shelf. Canada made a submission for areas of the Atlantic shelf to the Commission for the Limits of the Continental Shelf on 6 December 2013. It reserved the right to conduct further investigations with respect to delineation of its claim in the Arctic Ocean (Government of Canada, 2013).

A number of challenges related to implementation of UNCLOS face Canada. They include issues related to revenue-sharing responsibilities of federal and provincial authorities for oil and gas production beyond 200 nautical miles, and the scope of Canada's powers to regulate shipping as new areas become accessible in the Arctic as a result of climactic variations (VanderZwaag, 2014a).

By ratifying the 1995 UN Agreement on Straddling and Highly Migratory Fish Stocks (the 1995 UN Fish Stocks Agreement, or UNFSA 1995) in August 1999 (Government of Canada, 2004b), Canada made international fisheries reform and modernization a major priority. In May 2005, Canada hosted a major international conference on high seas fisheries governance (Government of Canada, 2005c), and Canada continued to push for more effective addressing of illegal, unreported, and unregulated (IUU) fishing (Government of Canada, 2005d). Various high seas biodiversity and fishing issues remain to be worked out, not only in Canadian ocean policy, but also globally (Russell and VanderZwaag, 2010c). For example, how might discrete high seas fish stocks be better managed, and how should the sustainable use and conservation of marine biodiversity beyond national jurisdiction be addressed? An Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction has met since 2006, under the auspices of the UN General Assembly (UNGA), to discuss such issues as access to marine genetic resources and a possible legal instrument to address the conservation of marine biodiversity in areas beyond national jurisdiction, but agreement has not been reached on future governance arrangements (Broggiato et al., 2014).

### *The 1992 Convention on Biological Diversity*

Under the CBD, governments undertake to conserve and sustainably use biodiversity by means of various commitments (VanderZwaag et al., 2012: 314). Parties are required to develop

national biodiversity strategies and action plans, and to integrate these into broader national plans for environment and development. The Convention also calls upon parties to develop networks of MPAs, to prevent and control the introduction of alien species, and to develop legislation and/or other regulatory provisions for the protection of threatened species and populations. Following the adoption of a Canadian Biodiversity Strategy in 1995 (Government of Canada, 1995), Canada's progress has varied in implementing the key commitments.

Canada is far from completing the establishment of an MPA network. Under the authority of the Oceans Act, section 35, only eight offshore MPAs have been established (see Figure 3.3):

- the Endeavour Hydrothermal Vents (2003) and the Bowie Seamount (2008) off British Columbia;
- the Gully (2004) off Nova Scotia;
- Basin Head (2005) off Prince Edward Island;
- Gilbert Bay (2005) off Labrador;
- Eastport (2005) off Newfoundland;
- the Musquash Estuary Marine Protected Area (2006) off New Brunswick; and
- Tarium Niruyait Marine Protected Area in the Beaufort Sea (2010).

The Aichi Biodiversity Target, adopted in 2010 under the CBD, urges the protection of 10 per cent of coastal and marine areas by 2020, but Canada appears unlikely to meet that target.

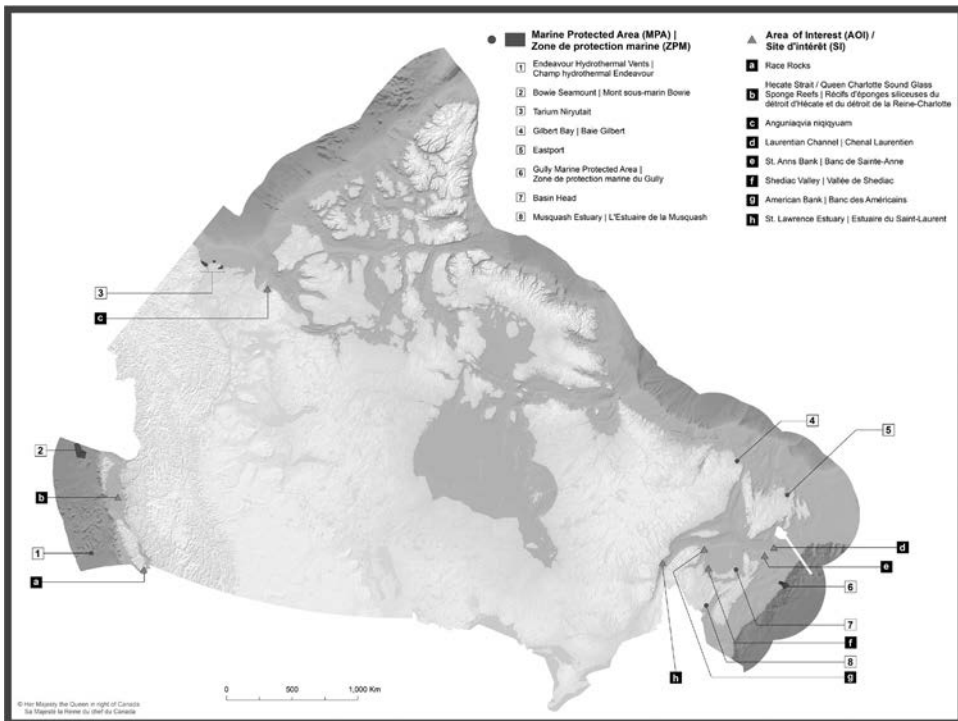


Figure 3.3 Canada's Oceans Act MPAs and areas of interest

Source: Department of Fisheries and Oceans Canada, July 2014.

It may take decades for Canada to establish a fully functioning MPA network (Commissioner of the Environment and Sustainable Development, 2012). A further eight areas of interest for MPA establishment have been identified. No national wildlife areas have been established in the EEZ, as authorized under the Canada Wildlife Act.

Only four national marine conservation areas have been established pursuant to the Canada National Marine Conservation Areas Act: the Saguenay–St Lawrence Marine Park, Quebec; Fathom Five National Marine Park, Georgian Bay, Ontario; Lake Superior National Marine Conservation Park of Canada; and Gwaii Haanas National Marine Conservation Reserve, British Columbia (Parks Canada, undated<sup>b</sup>). With the addition of more than 700 provincial and territorial MPAs (Government of Canada, 2010), Canada has only formally protected about 1 per cent of its oceans estate (Commissioner of the Environment and Sustainable Development, 2012). A 2014 analysis showed Canada lagging behind all major marine estate nations, with 1.3 per cent formal protection versus 11.6 per cent for Russia, 16 per cent for France and Britain, and more than 30 per cent for the United States and Australia (CPAWS, 2014). While these figures are well below targets, other area-based measures, such as fisheries closures, do provide a level of protection within an integrated management context. The current state of the art – and argument – is lacking in criteria and agreement on what should count as effective protection for these ‘informal’ measures. Non-regulatory measures have the distinct advantage of being relatively easy, cheap, and quick to implement, but many argue that their ease of implementation makes them equally vulnerable to change or removal based on economic or other criteria.

Progress on regulations is slow, and has become more complex and time-consuming in an era in which Canadian governments are viewing much regulation as a burden. Marine protection regulation-making is caught up in this environment at the federal level. In 2011, a Red Tape Reduction Commission consulted across the country and, in 2012, released an action plan to reduce red tape. Among the measures affecting all new regulations are a ‘one for one’ rule requiring the removal of one regulation for every new one to offset the new administrative burden imposed, a small business lens, and a number of reporting requirements. While the goal is logical and laudable, the impact in the implementation phase has been delays, while process and tools are established, along with time and funding resources to carry out new procedures (such as economic analyses of burden) (President of the Treasury Board, 2012).

With respect to the introduction of new alien aquatic species via ballast water in ships, Canada initially relied upon voluntary measures set out in the Guidelines for the Control of Ballast Water Discharge from Ships in Waters under Canadian Jurisdiction (Transport Canada, 2001). However, in light of the 2004 International Convention for the Control and Management of Ships’ Ballast Water and Sediments, Canada has issued binding Ballast Water Control and Management Regulations. The Regulations prescribe management measures for ballast water, requiring exchange at least 200 nautical miles from shore and in water depths greater than 2,000 metres before entering Canadian waters. Emergency ballast exchange within Canadian waters is also restricted to specific zones. These zones are identified based on lowest ecological risk.

In December 2002, Canada enacted the Species at Risk Act (SARA). The Act is part of the government of Canada’s three-pronged strategy for the protection of wildlife species at risk, which also includes commitments under the 1996 national Accord for the Protection of Species at Risk and activities under the Habitat Stewardship Programme for Species at Risk. The 2002 Act implements key elements of the Canadian Biodiversity Strategy. It requires recovery strategies and action plans to be prepared for listed endangered and threatened species, and management plans, for species of special concern. The Act formally recognizes the role of the independent advisory Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in assessing species at risk. The Act applies to all federal lands in Canada, all wildlife species

listed as being at risk, and their critical habitat. It 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 or threatened species. 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 between federal and provincial ministers, makes it difficult to fully assess the effectiveness of the statute.

Various implementation difficulties also stand out (VanderZwaag and Hutchings, 2005). Listing of some marine fish species has been a challenge, since listing under SARA involves a political decision rather than scientific determination (Findlay et al., 2009; Waples et al., 2013). For example, COSEWIC has listed as endangered Cultus Lake and Sakinaw Lake sockeye salmon populations, Interior Fraser River coho salmon, the Newfoundland and Labrador population of Atlantic cod, and the porbeagle shark, and has categorized as threatened the Laurentian North population of Atlantic cod (COSEWIC, 2007). Because of the potential social and economic impacts of SARA listing for these populations, the Canadian government chose against listing.<sup>10</sup> Delays in developing recovery strategies and action plans (VanderZwaag et al., 2011; Lemkow and VanderZwaag, 2014), and limited identification of critical habitats have also been problematic (Mooers et al., 2010; David Suzuki Foundation et al., 2009; Taylor and Pinkus, 2013).

The CBD's Programme of Work on Marine and Coastal Biological Diversity includes consideration of protected areas beyond national jurisdiction (CoP, 2004). High seas issues, particularly as they relate to ecosystem health, are of interest to Canada. Canada is working with existing governance bodies and their scientific advisers to integrate scientific knowledge and expertise to provide best available scientific advice to inform decisions. For example, in December 2005, Canada hosted an international scientific experts' workshop to review and assess ecologically based criteria for the identification of areas and/or resources that are ecologically and biologically significant and may require special management measures, including protected area status in the high seas (IUCN, 2006). The aim of the workshop was to provide integrated advice to authorities such as the CBD, the United Nations Food and Agriculture Organization (FAO), and the International Maritime Organization (IMO), for their consideration.

### MARPOL

Canada has formally accepted the six annexes of MARPOL dealing with oil pollution (Annex I), noxious liquid substances carried in bulk (Annex II), harmful substances carried in packaged form (Annex III), sewage (Annex IV), garbage (Annex V), and air pollution (Annex VI). The Vessel Pollution and Dangerous Chemicals Regulations, issued under the Canada Shipping Act, 2001, bring Canada into line with MARPOL standards for most vessel-source pollutants. Prevention of pollution from harmful substances in packaged form continues to be addressed by the Transportation of Dangerous Goods Regulations.

Canada has chosen to apply stricter vessel-source pollution control standards for its Arctic waters. Pursuant to the Arctic Waters Pollution Prevention Act, passed in 1970, Canada has imposed special pollution discharge and other restrictions for vessels operating in the Arctic. For example, oil deposits from ships are generally prohibited with only a few exceptions, such as when resulting from stranding or collision and from engine exhaust (under the Arctic Shipping Pollution Prevention Regulations). Effective 1 August 2009, Canada extended the special shipping standards out to 200 nautical miles in the Arctic in light of Article 234 of UNCLOS.<sup>11</sup> Article 234 grants coastal states special legislative and enforcement jurisdiction over vessels navigating in ice-covered waters (McRae and Goundrey, 1982; Bartenstein, 2011).

### *The 1996 Protocol to the 1972 London Convention*

Becoming the tenth country to accede to the 1996 Protocol (Government of Canada, 2001), which takes a precautionary approach to ocean disposal, Canada ensured its implementation through the provisions of the Canadian Environmental Protection Act, 1999. The Act adopts a 'safe list' approach by allowing ocean disposal of only a limited list of wastes listed in Schedule 5; 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 reuse, recycling, or treatments of the waste are practical options.

### *The Global Programme of Action for the Protection of the Marine Environment from Land-based Activities*

Canada became the first country to develop a National Programme of Action for the Protection of the Marine Environment from Land-based Activities (NPA) in 2000 (NPA Advisory Committee, 2000). The NPA sets national priorities for addressing land-based marine pollution and activities through a 'high', 'medium', and 'low' ranking approach. Listed as high-contaminant priorities are sewage and persistent organic pollutants. Responding to shoreline construction and alteration, and wetland and salt marsh alteration, are also listed as high priorities. In separate chapters for four main coastal regions (the Pacific, the Arctic, Southern Quebec/St Lawrence, and the Atlantic), the NPA also describes regional problems, priorities, and needed actions. A federal/provincial/territorial committee, established in 1996 soon after the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA) Washington Conference and co-chaired by Environment Canada and the DFO, was 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 programmes involved along Canada's extensive coastlines (Wells, 2002), and the lack of a dedicated funding for GPA implementation. Canada's report to the 2001 Intergovernmental Review Meeting on Implementation of the GPA included an annex highlighting more than ninety key programmes, within government, NGOs, and communities that address the goals and priorities of the GPA (NPA Advisory Committee, 2001). For example, the collaborative development, by federal, provincial, and local authorities, of integrated management processes and plans at the scale of the coastal management area (CMA) contributed directly to the implementation of the NPA. In a national report on GPA implementation prepared for the Second Intergovernmental Review Meeting in October 2006, Canada described various other projects contributing to GPA implementation including a technology investigation for enhancing municipal wastewater treatment in Arctic climates and an inventory of land-based sources of pollution in the Hudson Bay watershed (Environment Canada, 2006).

Canada has contributed 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 (RPA), adopted by Arctic Council ministers in 1998, established two high priorities for regional action – namely, addressing persistent organic pollutants and heavy metals – and identified pollution hot spots in the Russian Federation (Arctic Council, 1999). The Arctic Council's Protection of the Arctic Marine Environment (PAME) Working Group updated the RPA, under the lead of Canada and Iceland (PAME, 2008), with revisions approved by Arctic Council ministers in April 2009 (Arctic Council, 2009).



Interest in the GPA appears to have waned over the years, and Canada has struggled to address sewage pollution in particular. With over 150 billion litres of raw or undertreated sewage discharged annually, wastewater comprises Canada's largest source of water pollution (Environment Canada, undated). In 2012, Canada passed the Wastewater Systems Effluent Regulations under the Fisheries Act in an effort to address this concern, but the Regulations fall short of comprising a regulatory framework that could facilitate adequate wastewater management for many reasons.

- The Regulations do not apply to some of the largest geographic regions in Canada: the Northwest Territories, Nunavut and northern Newfoundland and Labrador, and Quebec.
- The Regulations do not apply to commercial, industrial, or institutional wastewater systems that contain under 50 per cent blackwater by volume, or to pulp and paper mills.
- The Regulations apply only to wastewater systems that have the capacity to collect 100 cubic metres or more of wastewater daily.
- Finally, the timelines for implementation of the proscribed effluent quality standards may be delayed owing to temporary and transitional authorizations that allow the continued discharge of deleterious effluents. Transitional authorizations may be granted based on degree of assessed risk and can extend until 2040, while temporary authorizations, which allow the discharge of acutely lethal concentrations of un-ionized ammonia, may be granted for three-year periods. These timelines have been criticized for providing inadequate environmental and public protection (Bowman, 2010).

### ***Enforcement***

While each federal statute pertaining to oceans has its own set of regulations, enforcement procedures, penalties, and fines, section 35 of the Oceans Act provides the Minister of Fisheries and Oceans with the authority to develop specific regulations pertaining to the designation of MPAs and the prescription of measures needed to achieve the conservation objectives of the MPA. Section 37 of the Act provides for penalties if prescribed measures are contravened, with persons liable to a fine not exceeding CAN\$100,000 on summary conviction or up to CAN\$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 that require the force of regulation.

With respect to enforcement and surveillance, the approach adopted by the Canadian government is to multi-task pollution prevention among fishery officers and other federal and provincial enforcement officers active in the geographic area in which the oceans conservation or management measure is being applied. Notwithstanding this, enforcement is only one of many measures on the compliance continuum. Consequently, substantial effort is dedicated in both the integrated management and MPA 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 eight current MPAs and, to date, no contraventions have been detected, although there have been activities and proposals that necessitated management actions (such as the Musquash Estuary proposal for a provincial aquaculture licence outside the boundary of the MPA, but with potential risk through current flows). Regulations focused on the mitigation of seismic sound in the marine environment were also under development. The DFO held targeted public consultations in 2005 and

2006, and revised its draft Statement of Canadian Practice Respecting the Mitigation of Seismic Sound in the Marine Environment (Fisheries and Oceans Canada, 2006). The Statement of Canadian Practice has now been given effect under the authority of the Newfoundland and Labrador and Nova Scotia Petroleum Boards for oil and gas applications, but proposed Oceans Act regulations for non-oil-and-gas seismic surveys did not advance.

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 behaviour) 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, section 79(2) of the Fisheries Act 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.

A more recent legislative effort to bolster enforcement in the oceans sector was aimed at more effectively countering ship-source pollution, especially in contravention of MARPOL standards, which has had damaging consequences to migratory seabirds. The 2005 amendments to the Migratory Birds Conventions Act, 1994 and the Canadian Environmental Protection Act, 1999 expanded the scope of persons who may be held responsible for offences, extended the jurisdiction of Canadian courts to cover infringements in the EEZ, and substantially increased penalties.<sup>12</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 (Fisheries and Oceans Canada, 2002a: 12–13, 22). 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 DFO and by other service providers. Increased partnerships with academia, international scientific organizations, and 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 scientific advisory peer review process designed to support all ocean managers.

Further, to foster the scientific understanding necessary to support ocean management policy, and to bridge the gap between natural and social sciences, an Ocean Management Research Network (OMRN) was established as a joint initiative between the Social Science and Humanities Research Council (SSHRC) and the DFO in 2001. The OMRN created a national network of interdisciplinary and cross-sectoral research working groups to develop knowledge and best practices for sustainable oceans management (OMRN, 2004). The OMRN continued as a loose network of academics and professionals after the end of its government funding in 2008.



Another network with a science focus was established in 2008: the Canadian Healthy Oceans Network (CHONe) (CHONe, undated). As a university–government partnership, CHONe focuses on conservation and sustainable use of Canada’s oceans under three themes: marine biodiversity, population connectivity, and ecosystem function. The creation of this network aligned with and supported the gradual shift of DFO Science’s focus from single species to the broader ecosystem within which species live. Both of these networks took substantial progress in bridging the oft-noted gaps between academic enquiry and the more operational research needs in government.

The commitment to advance ocean science and technology was anchored in Canada’s Oceans Action Plan (OAP), with the objectives to improve information-sharing through connecting information networks, to promote innovation and new technologies by supporting prototype development and targeted research and development, and to enhance commercialization through demonstration projects in the priority LOMAs (Fisheries and Oceans Canada, 2005a).

In the last five years, DFO Oceans became a significant client of the DFO Science Canadian Science Advisory Secretariat (CSAS), which coordinates the peer review of science issues for the DFO. As the focus of the oceans programme and funding narrowed, significant effort was invested to fill gaps in knowledge related to identification of ecologically and biologically significant areas and ecologically significant species and science-based conservation objectives, as well as specific studies on species of interest or features, such as corals and sponges. Oceans also was a significant DFO Science client in efforts to better understand the impacts of specific human use activities (such as marine renewable energy and marine transportation) on ecosystem components and functions. All of this effort was aimed at gaining a better understanding of risks, so as to better focus resources and choose appropriate conservation tools and management actions, and ultimately to implement integrated management and marine conservation under the Oceans Act.

### ***Financing***

As was noted previously, no new funds were provided to implement the Oceans Act or Canada’s Oceans Strategy (2002). Until the federal government’s approval of the Oceans Action Plan (OAP) in 2005, funding for implementation of the national ocean management approach had been achieved through reallocation of funds within the DFO. The programmes delivered in the six administrative regions of the DFO have been dependant on transfers of national funds on an annual basis. Since 1997, the Department has redirected approximately CAN\$140 million to fund the activities in support of the Oceans Strategy.

The OAP, however, provided the first new central funding of CAN\$28.5 million over two years across seven departments (Fisheries and Oceans Canada, 2005a). The 2007 federal budget proposed funding of CAN\$19 million over two years to help to clean and protect Canada’s oceans, and to support increased water pollution prevention, surveillance, and enforcement along its coasts (Department of Finance Canada, 2007). Once approved by Cabinet and Treasury Board, the Health of the Oceans (HOTO) commitment grew from CAN\$19 million over two years to CAN\$61.5 million over five years, projected through 2011–12 and allocated to five federal departments or agencies as follows:

- Transport Canada – CAN\$23.85 million;
- Fisheries and Oceans Canada – CAN\$23.173 million;
- Environment Canada – CAN\$8 million;
- Parks Canada – CAN\$6.25 million; and
- Indian and Northern Affairs Canada – CAN\$0.175 million.

Budget 2012 provided a full one-year extension of HOTO, followed by a smaller conservation-focused extension in Budget 2013 and the recently announced CAN\$37 million National Conservation Plan funding for five years to 2018–19 to be shared among several departments.

The broader financial picture for the government of Canada and DFO in the years following the establishment of HOTO has had a significant, and growing, impact on the implementation of the Oceans Act. In 2007, the federal government initiated strategic reviews on a four-year cycle of every federal organization's budget, with the goal of realizing savings to reinvest in other priorities and to address the federal budget deficit. As the programme evolved, and the economy suffered through the global financial crisis of 2008–09, savings that were initially, to some extent, reinvested in departments were increasingly used for fiscal stimulus and other priorities, and in the third year (the 2010 budget), the documents stopped identifying reinvestments of strategic review savings as the stimulus Economic Action Plan became *the* priority. The strategic review arrived at the DFO in 2009 (year three) and the results were announced in the February 2010 budget. The DFO was to implement cuts growing over three years to CAN\$58.8 million (or less than 5 per cent of the global budget). Decisions were made to backload the cuts with more than CAN\$40 million coming in the final year 2013–14. In 2010, strategic and operating reviews were added, so that by 2012–13 the DFO had significant cuts to absorb. The Department began rolling out major changes, including a long-anticipated rewrite of the Fisheries Act, new delivery mechanisms for fisheries licensing, significant changes to the habitat programme, and financial and human resource pressures in most areas of the Department.

For the oceans programme, there was some stability (for example the five-year HOTO funding to 2012), with heavy doses of uncertainty. Some of the uncertainty was generated by several senior management changes, with the programme shifted in three reorganizations in six years. Corporate reorganizations and budget cuts often trigger unanticipated consequences, for example in some cases cuts in other programmes through strategic review to 'focus on their core role' eliminated or reduced activities that were key to processes in other departments. In the case of MPA regulations, assessments required for the regulatory process were not available for a time, then became subject to cost recovery, creating budget issues and introducing delays. In addition, the Treasury Board Secretariat, as the overseer of the regulatory process, revised the regulatory process, for excellent reasons, to introduce more rigour and to ensure that regulations were indeed the right tool for the issue being addressed. For Oceans Act MPAs, this meant timing and budget issues as new processes were laid out and new requirements added. Finally, in 2011–12, the government moved aggressively on its red tape reduction initiative, which again, during the transition, created delays and uncertainty as departments adapted to the new tests (such as the requirement at the departmental level to remove one regulation for every new one adopted). From its peak in the mid-2000s, it appears that the oceans programme in 2014–15 has lost about a third of its authorized complement of people – dropping from roughly 115–120 full-time equivalents (FTEs) to somewhere in the high 70s – and the A-base budget is down at least 30 per cent (from CAN\$15 million to CAN\$9.2 million).

### **Implementation and the long-term outlook**

There are many challenges in implementing an oceans policy that seeks integration of the planning and management of ocean activities among various levels of government. Reorienting single-species, single-activity decisions to decisions focused on the sustainability of the ecosystem, and therefore of the industries and traditions dependent upon ocean resources, is a major hurdle. Moving from the theoretical level to the application of concepts, such as

ecosystem-based management and precaution, in day-to-day governance decisions is fraught with science challenges, as well as concerns about changes. Perhaps the greatest challenges are implementing the institutional changes and building the relationships and capacities essential to achieving integration.

### ***Implementation review efforts***

Various governmental and independent review efforts have occurred to assess Oceans Act implementation, and the long-term outlook for ocean law and policy development in Canada remains quite uncertain. The Oceans Act, section 52, required a review of its administration by Parliament within three years after its enactment. The October 2001 Report on the Oceans Act by the Standing Committee on Fisheries and Oceans concluded that the Act was fundamentally sound. It made twelve recommendations, including 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 (Standing Committee on Fisheries and Oceans, 2001).

On 29 September 2005, the Commissioner of the Environment and Sustainable Development reported to the House of Commons on Oceans Act implementation and issued key recommendations. Recommendations directed to the DFO included:

- recognizing and managing Canada's Oceans Action Plan (OAP) as a government *horizontal initiative*;
- finalizing and implementing operational guidance for integrated management planning, including MPAs, in the five priority ocean areas;
- planning and managing 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 the 2002 World Summit on Sustainable Development (WSSD) 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 (Commissioner of the Environment and Sustainable Development, 2005).

The recommendations were addressed by the government of Canada in Phase 1 of the OAP (Fisheries and Oceans Canada, 2005a), released in May 2005. The recommendations continued to be addressed, in part, through the horizontal management of the Health of the Oceans (HOTO) initiative involving five federal organizations, as well as the ongoing convening of interdepartmental oceans committees (ICOs) at the director general, assistant deputy minister, and deputy minister levels.

Federal departments are required to provide a performance report to Parliament as part of their annual report on plans and priorities. Information on programmes, their budgets, plans, and expected results for integrated management, MPAs, and other ocean management activities are provided for public scrutiny (Fisheries and Oceans Canada, 2004a).

The DFO has developed a Results-based Management and Accountability Framework to monitor the progress and implementation of the national ocean policy (Commissioner of the Environment and Sustainable Development, 2005). This framework sets out performance measurement goals and indicators to assess departmental progress. It was designed to track how the DFO uses resources to undertake activities in order to affect the desired results and achieve stated outcomes.

The DFO has completed reviews of the Eastern Scotian Shelf Integrated Management (ESSIM) initiative and the interdepartmental HOTO initiative. The ESSIM evaluation highlighted the need for political support for integrated planning and the decline in enthusiasm when stakeholders do not perceive a link between high-level objectives and concrete management measures (McCuaig and Herbert, 2013). The HOTO evaluation emphasized the short-term nature of HOTO funding and the need for longer-term coordinated policy direction to address ocean management issues (Fisheries and Oceans Canada, 2012).

A 2012 Expert Panel Report by the Royal Society of Canada on Sustaining Canada's Marine Biodiversity has offered further critiques of Canada's ocean policy implementation (Hutchings et al., 2012). The report concluded that completed integrated management plans for LOMA pilot projects stand out for their aspirational generality and for setting overall goals, objectives, and management strategies, but *not* for marine spatial planning. Major offshore areas have remained outside the integrated planning ambit, including the Bay of Fundy, the Gulf of Maine, and the central and eastern Arctic. Coastal area management planning initiatives have been relatively few and hard to track. The primary focus of the DFO has been on LOMAs, as exemplified by the ESSIM integrated planning process, which chose to address management issues beyond the 12 nautical mile territorial sea.

### **Outlook**

Funding for Phase 1 of the OAP, renewed funding in the 2007 federal budget, and interest shown by other levels of governments to develop collaborative governance arrangements and processes augured well for short-term implementation of Canada's Oceans Strategy. Integrated management processes were undertaken in five LOMAs, with plans completed for four regions, and eight MPAs have been designated. Work is progressing towards the designation of eight additional candidate MPAs. Health of the oceans funding and, more recently, National Conservation Plan funds secured support for the integrated management process with respect to the advancement of federal and national MPA networks.

The Canadian integrated management approach is clearly in a process of transition. With the substantial completion of LOMA pilot projects, Canada is moving towards a bioregional planning agenda. The National Framework for Canada's Network of Marine Protected Areas proposes the formulation of bioregional planning teams in twelve oceanic bioregions and the Great Lakes, with planning linked to LOMA processes where they exist (Government of Canada, 2011). The Framework promises to facilitate the development of bioregional MPA network action plans.

However, the future of integrated coastal/ocean planning appears quite uncertain. Exactly how bioregional planning will proceed remains unclear. Marine spatial planning is not referenced within Canadian ocean-related policy or legislation (Hall et al., 2011). Prime Minister Harper announced a new National Conservation Plan on 15 May 2014, but the announcement was quite thin on details (Prime Minister of Canada, 2014b). The Plan promises to commit CAN\$252 million over the next five years to support a series of conservation initiatives that facilitate meeting the 2020 CBD biodiversity targets of protecting 17 per cent of land and inland waters, and 10 per cent of marine and coastal areas. Included in the funding areas are CAN\$100 million for the Nature Conservancy of Canada to protect sensitive lands, and CAN\$37 million for marine and coastal conservation.

### **Lessons learned**

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

1 *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 UNCLOS. The Act has clearly designated the DFO as the lead federal authority for developing integrated management plans for marine areas, for setting the environmental quality standards that must be met, and for designating/establishing MPAs. The Act facilitated the development of a broad policy framework and a government-wide plan of action. Internationally, Canada enjoyed traction as a model for oceans law and policy development. It is important to note that the enabling nature of the legislation (more 'may' than 'shall') fails to create accountabilities for effective delivery beyond those granted to the Minister of Fisheries and Oceans. This can work in a collaborative environment, but not so well when resources and political focus are tight.

2 *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 that 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, although the policies guiding its application have evolved over time.

In response to this problem, the Minister of Fisheries and Oceans introduced two proposed revisions of the Fisheries Act: Bill C-45, in December 2006, and Bill C-32, in November 2007. The proposed revisions explicitly supported the application of the principles of sustainable development, including the ecosystem-based approach, precautionary approach, and increased stakeholder participation in decision-making. However, both Bills died on the Order Paper when the parliamentary sessions were prorogued (that is, formally ended). At time of writing, a new Fisheries Bill had not been reintroduced.

3 *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-based approach do serve useful functions (Rothwell and VanderZwaag, 2006). 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 debate within government bureaucracies, but also among the broader public. The principles and aspirations expressed in the Preamble to the 1996 Act were useful in starting to define an oceans strategy.

4 *Developing integrated management plans and establishing MPAs 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 peoples must be considered and managed in the development of MPAs 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 degradation have evolved over years. To change human

relationships and behaviours and to detect positive responses in the marine environment will likely require decades.

5 *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, section 28, 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 requirement under the Act for the federal government to collaborate with other levels of government seeks to draw in other government authorities as partners in the integrated management process, while respecting the 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 as a result of 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 of the federal government 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 relationships between regulators, that an existing fragmented set of laws and policies will be coordinated in the domestic management of oceans activities.

6 *Limited marine ecosystem understanding continues 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 (OAP) recognized that ecosystem-based science needed to be strengthened, and one of the pillars of the plan was to enhance ocean science and technology (Fisheries and Oceans Canada, 2005a). Further, the relationship between human uses, including cultural uses, and the value of marine ecosystem goods services remains a huge challenge that will continue to limit good policy and operational decisions.

7 *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 OAP 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 DFO). This situation did not support a coordinated federal approach.

As recommended in the 2005 Report of the Commissioner of the Environment and Sustainable Development, a horizontal, all-of-government approach is a fundamental requirement for success in bringing all federal regulators to the table. Subnational authorities (provincial, territorial, aboriginal) and stakeholders may require capacity-building and incentives to participate in a national programme. Financial investment is required to build integrated management and may be an important incentive both at the federal and subnational levels.



- 8 *Demonstrating progress is crucial, particularly in long-term planning.*  
For integrated oceans management planning, there is a clear need to demonstrate progress (value for money), especially to political masters. This is a challenge when time frames are long, when progress depends on others, and when resources are limited. Auditors and external reviewers can be significant allies. For the Oceans Act, statutory, evaluation, and auditor (such as the Commissioner of Environment and Sustainable Development) reviews have provided an important platform from which to tell the oceans 'story' and, in a number of cases, have provided recommendations that supported receiving new resources to achieve mandated tasks.
- 9 *Enacting bare bones integrated ocean planning legislation may carry implementation risks.*  
Leaving planning timelines, area choices, and procedures to bureaucratic discretion may contribute to considerable uncertainty and variability in integrated planning practice. Lack of a specific marine spatial planning mandate and clear provisions on how plans will be given legal effect may encourage general and aspirational planning results.

## Conclusion

Experience gained since the promulgation of the Oceans Act and adoption of Canada's Oceans Strategy (Fisheries and Oceans Canada, 2002a) 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;
- intergovernmental (federal-provincial-territorial) relationships (Canadian Council of Fisheries and Aquaculture Ministers and federal-provincial-territorial 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 with which to support a robust policy and effective implementation of the integrated approach continue to be long-term goals.

Various strategic next steps are possible. They include introduction of a new Oceans Action Plan, updating the existing national Oceans Strategy and issuance of a detailed bioregional planning document. One thing is clear: Canada's quest for integrated coastal/ocean management is far from over.

## Notes

- \* This chapter, intended to be accurate as of May 2014, is an updated and revised version of a paper published in Koivurova et al. (2009: 35–87). The research assistance of Emily Mason, JD Candidate Schulich School of Law, is gratefully acknowledged, as is the research support of the Social Sciences and Humanities Research Council of Canada (SSHRC). The authors also wish to thank Fisheries and Oceans staff at National Headquarters and in Regions who provided comments on drafts and factual information.
- \*\* The views expressed in this paper do not necessarily reflect the views of the International Joint Commission or the Government of Canada.
- 1 *Reference Re. Ownership of the Bed of the Strait of Georgia* [1984] 1 SCR 388.
  - 2 By the Jobs, Growth and Long-term Prosperity Act, SC 2012, c. 19, s. 142.

- 3 Regulations Establishing Conditions for Making Regulations under Section 36 (s. 2) of the Fisheries Act, SOR/2014-91.
- 4 Case No. 114957 *Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Ville)* [2001] 2 SCR 241.
- 5 See, e.g., FAO (1996).
- 6 Chairman's Statement, Meeting on Arctic Fisheries, Nuuk, Greenland, 24–26 February 2014 (copy on file with the authors).
- 7 *Morton v. British Columbia (Minister of Agriculture & Lands)* (2009) 92 BCLR 4th 314, 42 CELR (3d) 79 (BCSC).
- 8 More information on the Canada–Nova Scotia Offshore Petroleum Board is available online at <http://www.cnsopb.ns.ca/> and for the Canada–Newfoundland and Labrador Offshore Petroleum Board at <http://www.cnlopb.ca/>
- 9 Information on the activities of the Arctic Council is available online at <http://www.arctic-council.org>
- 10 See Orders Giving Notice of Decisions not to add Certain Species to the List of Endangered Species, SI/2005-2 (decision not to list Cultus and Sakinaw salmon), SI/2006-61 (decision not to list Newfoundland and Labrador population of Atlantic cod and Interior Fraser population of coho salmon), and SI/2006-110 (decision not to list the porbeagle shark). Other tools, such as government programmes and initiatives by non-governmental organizations (NGOs) and industry, are expected to protect and assist recovery of these non-listed species.
- 11 An Act to amend the Arctic Waters Pollution Prevention Act, SC 2009, c. 11.
- 12 Persons responsible for depositing a substance harmful to migratory birds not authorized under the Canada Shipping Act, 2001, may include masters, chief engineers, owners, and operators of a vessel, and directors or officers of a corporation that is the owner or operator of a vessel (An Act to amend the Migratory Birds Convention Act, 1994 and the Canadian Environmental Protection Act, 1999, SC 2005, c. 23, 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 CAN\$1 million or to imprisonment for a term up to three years or both upon conviction by indictment, and to a fine of not more than CAN\$300,000 or to imprisonment for a time of up to six months or to both upon summary conviction. Persons and vessels may be convicted for a separate offence for each day on which the offence is committed or continued.

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