



Canada at a crossroad: The imperative for realigning ocean policy with ocean science



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ABSTRACT

Canada's ocean ecosystem health and functioning is critical to sustaining a strong maritime economy and resilient coastal communities. Yet despite the importance of Canada's oceans and coasts, federal ocean policy and management have diverged substantially from marine science in the past decade. In this paper, key areas where this is apparent are reviewed: failure to fully implement the *Oceans Act*, alterations to habitat protections historically afforded under Canada's *Fisheries Act*, and lack of federal leadership on marine species at risk. Additionally, the capacity of the federal government to conduct and communicate ocean science has been eroded of late, and this situation poses a significant threat to current and future oceans public policy. On the eve of a federal election, these disconcerting threats are described and a set of recommendations to address them is developed. These trends are analyzed and summarized so that Canadians understand ongoing changes to the health of Canada's oceans and the role that their elected officials can play in addressing or ignoring them. Additionally, we urge the incoming Canadian government, regardless of political persuasion, to consider the changes we have documented and commit to aligning federal ocean policy with ocean science to ensure the health of Canada's oceans and ocean dependent communities.

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1. Introduction

Bounded by three oceans, Canada has a deep cultural and economic connection to the marine environment and a strong

global responsibility to protect it. The federal government, through the Department of Fisheries and Oceans (DFO), recognizes the oceans as being “an integral part of our identity as a nation” [1]. The Canadian economy remains tied to oceans, employing over 300,000 Canadians working on or around its oceans, and ocean-based industries contribute more than \$26 billion a year to the nation's wealth [2]. An example of the close links between ocean health and the economy was the devastating impact of the

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collapse of the cod fisheries in the 1990s on the entire province of Newfoundland and Labrador, and much of Atlantic Canada; the collapse occurred despite repeated warnings by scientists that the stock required better management, resulting in the loss of 40,000 jobs [3] and a federal expenditure of over two billion dollars in income support, retraining, and fishing license buy outs [4]. Aboriginal peoples throughout the country, who themselves are in a unique jurisdictional relationship directly with Canada's federal government, rely heavily on fish and fisheries for cultural and ceremonial purposes, as well as for food and employment [5,6].

The Canadian government recognizes its responsibility in managing the country's oceans sustainably for the benefit of present and future generations of Canadians [2]. This reflects a global imperative: with an estimated 44% of the world's population living less than 150 km from coasts [7], the long-term health of oceans is arguably key to the long-term well-being of coastal nations worldwide. There was a time when ocean science played a strong role in defining ocean policy in Canada. Yet as illustrated in this paper, over the past decade decision-making at the federal level appears to have undermined the government's own mandates for the sustainable management of Canada's oceans. This paper focuses on the lack of federal leadership in three key areas: (1) implementing the *Oceans Act*; (2) alterations to habitat protections historically afforded under Canada's *Fisheries Act* [8]; and (3) implementing the *Species at Risk Act* (SARA). A more systematic erosion of marine science capacity and communication for government researchers in Canada is also discussed [9,10]. Restoring the capacity of Canada's government researchers to conduct ocean science can significantly improve the federal government's ability to implement its oceans legislation and thus to sustainably manage Canada's oceans and coasts. Reopening channels for science communication can improve public engagement and promote transparency in government science. Additionally, because of the global and complex nature of marine challenges, ocean research transcends institutions, making effective communication paramount. We propose recommendations to realign ocean policy with ocean science, and argue for legislative reform of the very system in which these poor decisions have been allowed to take place.

2. Canada failing its oceans¹

Canada was once seen as a global leader in ocean management [11,12]. Canada's *Oceans Act* – which came into force in 1997 – was exemplary ocean management legislation. It provided a framework through which Canada could lead the world in integrated ocean management, ecosystem-based management, and marine protected area implementation. Canada was held up as a model for other nations to follow [11,13]. To better implement the *Oceans Act*, the government took action on two fronts. First, it developed Canada's Oceans Strategy, released in 2002, and Canada's Oceans Action Plan, released in 2005. Second, the government created a dedicated Oceans Branch of Fisheries and Oceans Canada (DFO) – as the lead agency to facilitate the implementation of the strategy – and hired new interdisciplinary managers, more capable of working in the modern ocean management environment [12]. As core commitments of the Oceans Strategy, DFO is to work collaboratively with other agencies and levels of government, share responsibility for achieving common objectives, and engage Canadians in ocean-related decisions guided by three principles: sustainable development, integrated management, and the precautionary approach [14]. The *Oceans Act* and subsequent strategy thus incorporated some of the best available practices, supported

by science (both natural science and social science). In addition, the *Oceans Act* addressed Canada's commitment to international agreements. For example, the *Act* assigns responsibility to the Minister of Fisheries and Oceans to “lead and coordinate development and implementation of a national system (or network) of marine protected areas” (MPAs). This commitment to MPA development is essential if Canada is to fulfill its international obligations under the terms of the Convention on Biological Diversity (CBD), which Canada has signed.

Despite these positive initial steps, serious concerns have emerged regarding Canada's commitment to implementing the *Oceans Act*. Such concerns have arisen from diverse sources, including researchers [15] and the Auditor General of Canada [16]. The latter issued a 2005 report noting that “Fisheries and Oceans Canada has fallen far short of meeting commitments and targets for implementing key aspects of the *Oceans Act*” [16]. It highlighted that implementation has not been a government priority, that there had been no workable and consistent approach to integrated oceans management, that the department has not been held accountable to its *Oceans Act* commitments, and that essential elements to implementing the Oceans Strategy (e.g. strong leadership, coordination, adequate funding, an accountability framework with performance measures) were lacking [16]. It was hoped that such criticisms a decade ago would have instigated more effective action, but instead the federal government's role on oceans has diminished. The Department's response to the report was that it agreed with all of the audit's recommendations. Yet some seven years later, in a subsequent evaluation of DFO's Integrated Ocean Management (IOM) Program in 2012 [17], eight in 10 surveyed IOM stakeholders or more indicated that there is a continued need for federal attention to all of the key themes under integrated ocean management – science, engagement of stakeholders, and integrated oceans management planning. Three-quarters of stakeholders indicated that there is a continued need for federal action on designation of marine protected areas and protection of marine ecosystems.

Since 2005, a series of ‘flagship’ Large Ocean Management Area (LOMA) initiatives across the country have been delayed or abandoned, with only one of five management plans being endorsed by the Department. For example, after a decade of, albeit slow, progress in creating ocean management strategy within the Eastern Scotian Shelf Integrated Management (ESSIM) initiative off the Atlantic coast [15], the national government failed to endorse the stakeholder driven plan and the initiative was terminated in April 2012 [18]. On the Pacific coast, due to an inability to agree on the terms of the joint agreement, the federal government pulled out of a tri-partite arrangement with the Province of BC and First Nations to work on the Pacific North Coast Integrated Management Area (PNCIMA). With less than 1% of its waters designated as MPAs, Canada's MPA establishment continues to be slow or stalled [19] and will not allow Canada to meet the 10% target signed at the Aichi convention. For example, of the four pilot MPAs announced in 1999, one was established in 2003 (Endeavor Hydrothermal Vents) and another in 2008 (Bowie Seamount); the other two (Race Rocks and Gabriola Passage) are dormant [20]. As with integrated ocean management, the Auditor General of Canada concluded in its 2012 report that the federal government has failed to plan, establish and manage a network of marine protected areas in accordance with their legislative mandates and policies and that “...Canada's marine biodiversity remains at risk. By extension, the prosperity of many coastal communities in Canada with marine-based economies also remain threatened.” [21]. This undermining of progress has cast Canada in a bad light internationally [9,22].

¹ Title taken from CBC, [89].

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