

SUSTAINING CANADIAN MARINE BIODIVERSITY: POLICY AND STATUTORY PROGRESS (2012-2019)

A Report by the Policy Briefing Committee of the
Royal Society of Canada Expert Panel Report (February 2012)

on

*Sustaining Canada's Marine Biodiversity: Responding to the Challenges Posed by
Climate Change, Fisheries, and Aquaculture*

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The opinions expressed in this report are those of the authors and do not necessarily represent those of the Royal Society of Canada.

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Background on the Policy Briefing Committee Report Process

In 2009, the *Royal Society of Canada (RSC)* identified a series of urgent scientific and public policy questions and established a series of expert panels to study the issues and provide recommendations for next steps. The series began with the Expert Panel on *Health and Environmental Impacts of Canada's Oil Sands* (2010). This was followed by *End-of-Life Decision Making* (2011); *Sustaining Canada's Marine Biodiversity* (2012); *Early Childhood Development* (a partnership with the *Canadian Academy of Health Sciences*) (2012); and *Canada's Libraries, Archives and Public Memory* (2014).

What has been the impact of these reports? Have their recommendations been implemented? What are the next steps in terms of policy options? These questions are all at the heart of the current Strategic Plan of the *RSC*. In keeping with the *RSC's* Strategic Priority to implement a sharpened focus for contributing advice on specific themes, it is now timely to revisit the findings of recent *RSC* Expert Panels.

To do so, the *RSC* is establishing a Policy Briefing Committee (PBC) for each of the original Expert Panel reports. Each PBC will include new voices, such as members of the *RSC College of New Scholars, Artists and Scientists* and others, such as public policy practitioners and NGO (Non-governmental Organization) leaders, with a view to enhancing the focus on policy developments.

The mandate of each PBC is to: (a) describe the context, findings and recommendations of the *RSC* Expert Panel report; (b) track the public-policy developments since publication in the context of the panel's findings and recommendations; and (c) identify the policy issues (and leading options) that lie ahead.

An important distinction from the work of each original expert panel is that the PBCs will not undertake reviews of the scientific literature since publication of the Expert Panel reports, but instead focus on matters with respect to findings and recommendations issued by the reports and public policy developments since then. The process has been overseen and coordinated by Prof. T. Geoffrey Flynn, FRSC. He has considerable experience in conducting expert panels and is familiar with the work of each of these particular *RSC* Expert Panels. Prof. Flynn reports to the *RSC* Council.

Overview of the 2019 Policy Briefing Committee Report on Sustaining Canadian Marine Biodiversity

The Policy Briefing Committee (PBC) report comprises four parts. Part I provides a brief review of the 2012 Expert Panel Report, describing its motivation, mandate, objectives, and findings.

Part II examines the impact of the Expert Panel Report through its citation history and, by extension, its influence on stakeholders invested in sustaining Canadian marine biodiversity.

The third (Part III)—the lengthiest—tracks public-policy developments, since 2012, in the context of the Expert Panel’s findings and recommendations. The PBC report concentrates on the six panel recommendations (and associated key actions) that have direct policy and statutory implications (the seventh recommendation focussed solely on scientific research). We provide a ‘traffic-light’ approach to evaluate progress on each recommendation and key action.

Part IV identifies future policy challenges and suggested initiatives for their implementation.

The PBC acknowledges with thanks the research assistance provided by Kate Medcalf.

PART I

The 2012 Expert Panel Report on Sustaining Canadian Marine Biodiversity: A Brief Review

1.1 Setting the Stage

Canada's oceans constitute a vital biological, geochemical, and physical milieu that supports human health, societal well-being, and creation of wealth. Canada has the benefit of, and responsibility for, three marine coastlines that contribute to society in numerous ways. Oceans have long provided habitat for species of traditional and cultural significance to Indigenous peoples. Today, sustainably exploited fish populations and environmentally responsible aquaculture operations should provide secure local and national access to the protein and oils contained in seafood. Canada's oceans provide for numerous recreational and commercial activities. The physical integrity of natural coastlines reduces erosion and buffers the land from oceanic storms. Globally, marine life provides more than half the oxygen humans breathe and serves as a potentially rich source for modern pharmaceuticals.

Reductions in Canadian and global marine biodiversity impair the ocean's capacity to provide ecosystem services that contribute to the resilience of marine ecosystems and to the well-being of humankind. A primary case for sustaining marine biodiversity and protecting marine ecosystems is based on the argument that the importance of species can be determined by their marketable value (e.g., food, potential sources of medicine, recreational harvesting) and for their ability to provide non-market goods and services (e.g., carbon sequestration, erosion control).

There are other good reasons for conserving biodiversity, including the role of biodiversity in contributing to enjoyment of the oceans (through educational, recreational, and inspirational experiences) and moral and ethical reasons for doing so. Although these benefits can be difficult to quantify, they influence society's stewardship of the marine environment.

1.2 Panel Mandate

The mandate of the 2012 Expert Panel was to prepare expert assessments of:

- (i) past and projected trends in Canada's ocean environments and marine biodiversity;
- (ii) causes and projected consequences of these trends for biodiversity; and
- (iii) the extent to which Canada is fulfilling its national and international obligations to sustain marine biodiversity.

The Panel was tasked with identifying new approaches, measures, and research initiatives to promote the sustainability of Canadian marine biodiversity. The panel report represented

the first, and to date only, collation of information on marine life, oceanography, climate change, fisheries, and aquaculture in the context of Canada's national and international obligations to sustain marine biodiversity.

1.3 Report Objectives

The primary purposes of the 2012 Expert Panel Report were to:

- Serve as an educational tool to increase awareness of Canada's oceans;
- Describe trends in Canada's oceans and marine biodiversity;
- Evaluate past, present, and forecasted changes in three stressors that affect marine biodiversity: climate change, fisheries, and aquaculture;
- Describe and forecast how these three stressors have affected, and are likely to affect, Canadian marine biodiversity;
- Determine whether Canada has fulfilled its commitments to sustain marine biodiversity;
- Provide broad, strategically based recommendations, each accompanied by key actions, to establish Canada as an international leader in oceans stewardship and marine conservation.

1.4 What Did the Expert Panel Find?

The 2012 Expert Panel Report found that Canada was facing significant challenges in its efforts to conserve and sustain marine biodiversity in light of climate change, fisheries, and aquaculture. Climate change was identified as the greatest challenge because its effects on marine biodiversity will not be readily reversed.

One overarching conclusion was that the simplest and best strategy to deal with climate change is to protect existing diversity and rebuild depleted populations and species to restore natural diversity. The challenge then is to sustain them at levels at which Canada's marine biodiversity is able to optimize the ecosystem services that the oceans provide in support of Canadian society and in support of the welfare of the global community.

By improving and protecting the health of Canada's oceans, the Expert Panel concluded that such a strategy should restore the natural resilience of Canada's ocean ecosystems to adapt in response to the challenges posed by climate change and other anthropogenic activities.

PART II

The 2012 Expert Panel Report on Sustaining Marine Biodiversity: Assessing Impact

2.1 A Broad Perspective

The RSC Expert Panel Report has been cited at least 77 times from all sources, excluding traditional media reports. Regarding non-peer reviewed scientific publications, the report has been cited at least 21 times by a combination of NGOs, Industry-Affiliated Bodies, Government Agencies, and Academia (Table 1). In addition to the report itself, three anonymously peer-reviewed papers, detailing different aspects of the Expert Panel Report, were published in the journal *Environmental Reviews*. Their citation details, according to Google Scholar, are as follows:

Hutchings JA, Côté IM, Dodson JJ, Fleming IA, Jennings S, Mantua NJ, Peterman RM, Riddell BE, Weaver AJ (2012) Climate change, fisheries, and aquaculture: trends and consequences for Canadian marine biodiversity. *Env. Rev.* 20: 220-311. **Citations: 22**

Hutchings JA, Côté IM, Dodson JJ, Fleming IA, Jennings S, Mantua NJ, Peterman RM, Riddell BE, Weaver AJ, VanderZwaag DL (2012) Is Canada fulfilling its obligations to sustain marine biodiversity? *Env. Rev.* 20: 353-361. **Citations: 21**

VanderZwaag DL, Hutchings JA, Jennings S, Peterman RM (2012) Canada's international & national commitments to sustain marine biodiversity. *Env. Rev.* 20: 312-352. **Citations: 13**

Table 1. Citations of the 2012 RSC Expert Panel Report on Sustaining Marine Biodiversity by multiple sources.

Year	Title	Source
2019	Bill C-55: Stronger Legal Protection for Marine Space in Canada	NGO (Collaboration effort: CPAWS, David Suzuki Foundation, Ecology Action Centre, Oceans North, WWF Canada, West Coast Environmental Law) ¹
2019	Farming the Sea, a False Solution to a Real Problem: Critical Reflections on Canada's Aquaculture Regulations	Academia (<i>Ottawa Law Review</i> 50:1) ²
2019	Wild Fish Trapped: Incidental Catch in the Salmon Farming Industry	NGO (<i>Watershed Watch Salmon Society</i>) ³
2019	Ocean Laws (Home Page)	NGO (<i>West Coast Environmental Law</i>) ⁴

¹ <https://www.wcel.org/sites/default/files/publications/2019-02-seabluebillc-55-brief.pdf>

² <https://commentary.canlii.org/w/canlii/2019CanLIIDocs16.pdf>

³ https://www.watershed-watch.org/wordpress/wp-content/uploads/2019/06/WWSS_Wild_Fish_Trapped_Incidental_Catch-June2019.pdf

⁴ <https://www.wcel.org/program/ocean-laws>

2017	Fishery Audit 2017: Unlocking Canada's Potential for Abundant Oceans	NGO (<i>Oceana Canada</i> , "Fishery Audit 2017") ⁵
2017	Speaking for the Salmon	NGO (<i>Watershed Watch Salmon Society</i>) ⁶
2016	Canada's Marine Coasts in a Changing Climate	Government ⁷
2016	The Rise and Biodiversity Relevance of Private Governance in Canada's Fisheries and Aquaculture Sectors	NGO (<i>IUCN Commission on Environmental, Economic and Social Policy</i>) ⁸
2016	Creating Modern Safeguards in the <i>Fisheries Act</i> to Rebuild Fish Stocks in Canada	NGO (<i>Oceana Canada</i>) ⁹
2016	Sustainability of Canadian fisheries requires bold political leadership	Policy Forum (<i>Policy Options</i>) ¹⁰
2015	Seal Range State Policy and Management Review	NGO (<i>IUCN</i>) ¹¹
2014	Bottom-Up Regulation of Capelin, a Keystone Forage Species	Academia/Government (Cognitive and Behavioural Ecology Programme, Memorial University; NAFC, Fisheries & Oceans Canada) ¹²
2014	Appendix D: Literature Reviews for Impacts of Climate Change on Columbia River Salmon	Government (National Oceanic and Atmospheric Administration, U.S.A.) ¹³
2014	Assessing the Impact of Human Activities on British Columbia's Estuaries	Academia (School of Environment and Management, Royal Roads University) ¹⁴
2013	Aquaculture: Annotated Bibliography of the Conservation Issues of Open-pen Finfish Aquaculture	NGO (<i>Canadian Wildlife Federation</i>) ¹⁵

⁵ <https://www.oceana.ca/en/publications/reports/fishery-audit-2017-unlocking-canadas-potential-abundant-oceans>

⁶ <https://www.watershed-watch.org/wp-content/uploads/2017/04/SfSJan2017Recommendations.pdf>

⁷ http://publications.gc.ca/collections/collection_2016/rncan-nrcan/M174-12-2016-eng.pdf

⁸ https://www.iucn.org/sites/dev/files/policy_matters_21_chapter_6_the_rise_and_biodiversity_relevance_of_private_governance_in_canadas_fisheries_and_aquaculture_sectors.pdf

⁹ <https://www.ourcommons.ca/Content/Committee/421/FOPO/Brief/BR8708233/br-external/OceanaCanada-e.pdf>

¹⁰ <https://policyoptions.irpp.org/magazines/april-2016/sustainability-of-canadian-fisheries-requires-bold-political-leadership/>

¹¹ <https://portals.iucn.org/library/sites/library/files/documents/SSC-OP-055.pdf>

¹² <https://core.ac.uk/download/pdf/20125583.pdf>

¹³ https://www.westcoast.fisheries.noaa.gov/publications/hydropower/fcrps/2014_Supplemental_FCRPS_BiOp_Appendices_011714.pdf

¹⁴ <https://pdfs.semanticscholar.org/1c48/b0492f6f642c513b68c8a56809cd241020ee.pdf>

¹⁵ http://cwf-fcf.org/en/resources/research-papers/CRA_13102_Aquaculture_Manual_EN_web.pdf

2013	Canadian Mining Innovation Council Environmental Analysis of the Mining Industry in Canada	Industry (Prepared by Hatch Ltd. and Contributing Authors for the Canadian Mining Innovation Council) ¹⁶
2013	Gutting Canada's Fisheries Act: No Fishery, No Fish Habitat Protection	Academia (<i>Fisheries</i> 38: 497-501) ¹⁷
2013	Species at Risk: State of the Gulf of Maine Report	Government (Gulf of Maine Council on the Marine Environment; Fisheries & Oceans Canada) ¹⁸
2013	An evaluation of Grieg Seafood BC and Marine Harvest Canada's marine netpen salmon operations in British Columbia	NGO (<i>Seafood for the Future, Aquarium of the Pacific</i>) ¹⁹
2012	Finfish Aquaculture Update	NGO (<i>Friends of Blue Hill Bay</i>) ²⁰
2012	Are marine protected areas a solution for protecting Canada's marine life?	NGO (<i>WWF Canada</i>) ²¹
2012	As ice melts in Far North, opportunities abound to advance Canada's oceanic laws	Science Media (Phys.org Social Science and Humanities Research Centre) ²²
2012	40 Priority Research Questions for Ocean Science in Canada	Academia (The Core Group on Ocean Science in Canada, Council of Canadian Academies) ²³
2012	Sustaining Canada's Marine Biodiversity, Fisheries and Communities	Media (Newfoundland & Labrador Environment Network) ²⁴
2012	Evaluating the role and designation of critical habitat for conserving Canadian marine species at risk: a decision framework	Academia (Master of Marine Management Thesis, Dalhousie University Marine Affairs Program) ²⁵

¹⁶ <http://www.cmic-ccim.org/wp-content/uploads/2013/07/HatchScopingReport.pdf>

¹⁷ <https://afspubs.onlinelibrary.wiley.com/doi/pdf/10.1080/03632415.2013.848345>

¹⁸ <http://www.gulfofmaine.org/2/wp-content/uploads/2013/06/species-at-risk-theme-paper.pdf>

¹⁹ <http://www.aquariumofpacific.org/images/seafoodfuture/SFFSalmonProducerPartnerEvaluation.pdf>

²⁰ <http://fobhb.org/finfish-aquaculture-update/>

²¹ <https://blog.wwf.ca/blog/2012/04/25/are-marine-protected-areas-a-solution-for-protecting-canadas-marine-life/>

²² <https://phys.org/news/2012-02-ice-north-opportunities-abound-advance.html>

²³ <http://citeseerx.ist.psu.edu/viewdoc/download;jsessionid=028E6BFFE79E3815AD8621CC221D2249?doi=10.1.1.731.884&rep=rep1&type=pdf>

²⁴ <https://nlenvironmentnetwork.org/2012/06/25/sustaining-canadas-marine-biodiversity-fisheries-and-communities/>

²⁵ https://pdfs.semanticscholar.org/ed4d/359ef7df040badf3452f8ebae4508e631917.pdf?_ga=2.42492453.1887649375.1570029888-1341836689.1570029888

2012	Assessing the Viability of the <i>Species at Risk Act</i> in Managing Commercial Exploitation and Recovery of Threatened and Endangered Marine Fish in Canada	Academia (Master of Resource Management, Simon Fraser University School of Resource and Environmental Management) ²⁶
2012	Letter: Canadian Society for Ecology and Evolution to Minister, Fisheries and Oceans	NGO (American Fisheries Society Mid-Canada) ²⁷
2012	The Sustainable Management of Grey Seal Populations: A Path Toward the Recovery of Cod and Other Groundfish Stocks	Government (Report of the Standing Senate Committee on Fisheries and Oceans) ²⁸
2012	Precautionary Approach	NGO (Salmon Guy) ²⁹
2012	Summary of Scientific Papers on Impacts of Open Net Pen Farming on Wild Populations	NGO (<i>Medway River Salmon Association</i>) ³⁰
2012	Climate Change, Oceans and Fisheries	Media/NGO (Work and Climate Change Report, York University W3 Project) ³¹

2.2 A Specific Perspective

We conclude that the RSC Expert Panel Report has had meaningful influence by providing an objective foundation for strengthening Canadian commitments to sustain marine biodiversity. The campaigns of several NGOs have been wholly consistent with, and in some cases explicitly influenced by, the Report’s recommendations. Notwithstanding the challenge in attributing cause to effect, since 2012 there have been significant changes to Canadian law (such as the *Fisheries Act* and *Oceans Act*) and a strengthening of Canada’s commitments to sustain marine biodiversity (for example, by exceeding the target for marine protected areas under the Convention of Biological Diversity). NGOs whose efforts were influential in this regard include *Canadian Parks and Wilderness Society*, *David Suzuki Foundation*, *Ecology Action Centre*, *Oceana Canada*, *Oceans North*, *West Coast Environmental Law*, and *WWF Canada*.

To provide one specific example of impact in this regard, the 2012 Expert Panel Report influenced the establishment (2015) of *Oceana Canada*, an NGO with primary interest in

²⁶https://pdfs.semanticscholar.org/84a7/a30f730d26d461a674d973cdfd4d4df9ec90.pdf?_ga=2.96685343.1887649375.1570029888-1341836689.1570029888

²⁷ <https://midcanada.fisheries.org/letter-from-canadian-society/>

²⁸ http://publications.gc.ca/collections/collection_2012/sen/yc25-0/YC25-0-411-7-eng.pdf

²⁹ <http://www.salmonguy.org/?tag=precautionary-approach&paged=2>

³⁰http://medwayriversalmonassociation.org/aquaculture/Science_Briefing_on_Impacts_of_Open_Net_Pen_Salmon_Aquaculture_March_1_2012.pdf

³¹ <https://workandclimatechangereport.org/2012/03/>

policy and statutory development in sustainable fisheries and marine conservation. With respect to impact of the Expert Panel Report, *Oceana Canada* has stated³²:

“In the course of the feasibility study [to determine whether Oceana should establish in Canada], Oceana staff carried out interviews with over 60 scientists, government officials, conservationists, and fishing industry representatives. In each of those interviews, we asked for comments on the Royal Society report. We found overwhelming agreement that the report represented an accurate diagnosis of the problems with Canada’s fisheries management, as well as providing prescriptions for fixing them. Ultimately, our final feasibility study (and the funding proposals based upon it) included abundant references to the report.”










³² https://fishlifehistory.ca/images/gallery/source/Oceana_Canada_Letter.pdf











PART III









Tracking Policy and Statutory Progress



Assessment of policy and statutory development since the Expert Panel Report begins with a summary ‘traffic-light’ evaluation of progress made on the 2012 Report’s recommendations and key actions for implementation. Detailed descriptions of the PBC’s findings follow.

Table 2. Assessment of progress on recommendations and key actions identified in the 2012 RSC Expert Panel Report.

RECOMMENDATION OR POLICY-RELATED KEY ACTION	ASSESSMENT OF PROGRESS
NO TO LITTLE PROGRESS  LITTLE TO MODERATE PROGRESS  MODERATE TO GOOD PROGRESS 	
RECOMMENDATION 1: That the Government of Canada identify international leadership in oceans stewardship and biodiversity conservation as a top government priority.	
KEY ACTION 1.1 The Government of Canada should fully implement existing statutory and policy commitments to sustain marine biodiversity.	
KEY ACTION 1.2 The Government of Canada should enhance transboundary and international governance arrangements by extending integrated management planning efforts across national maritime boundaries.	
KEY ACTION 1.3 The Government of Canada should increase Canada’s formal membership to international agreements that pertain to the sustaining of marine biodiversity, such as the Convention on the Conservation of Migratory Species of Wild Animals.	
KEY ACTION 1.4 The Government of Canada should support research initiatives to strengthen scientific advice and ensure renewal of retiring scientific and managerial staff who have expertise in decision-making in the presence of complexity, trade-offs, uncertainties, and risks.	
KEY ACTION 1.5 The Government of Canada should fully support the provision and implementation of a management framework that maximizes opportunities for fisheries to achieve third-party certification of sustainability.	

<p>KEY ACTION 1.6 The Auditor General of Canada could undertake a full financial, statutory, and policy audit of Canada’s progress in meeting its international marine biodiversity obligations.</p>	
<p>RECOMMENDATION 2: That the Government of Canada resolve regulatory conflicts of interest affecting Canada’s progress in fulfilling obligations to sustain marine biodiversity.</p>	
<p>KEY ACTION 2.1 The Government of Canada should develop processes and, if necessary, amend institutional structures to limit or eliminate real and perceived regulatory conflicts of interest.</p>	
<p>KEY ACTION 2.2 The Government of Canada should develop processes and, if necessary, amend institutional structures to ensure that Ministers are fully and transparently accountable for policy commitments to the use and conservation of marine biodiversity.</p>	
<p>RECOMMENDATION 3: That the Government of Canada reduce the discretionary power in fisheries management decisions exercised by the Minister of Fisheries and Oceans.</p>	
<p>KEY ACTION 3.1 The Government of Canada should enact prescriptive legislation containing primary objectives to: (i) prevent overfishing; (ii) rebuild depleted fish stocks; (iii) formalize the explicit use of reference points and harvest control rules; and (iv) ensure transparency and accountability in fisheries management plans, including those relating to aquaculture.</p>	
<p>KEY ACTION 3.2 The Government of Canada should consider the establishment of independent, arms-length advisory or decision-making bodies on matters pertaining to the use and conservation of marine biodiversity, including catch allocations, licensing, and environmental impact assessments.</p>	
<p>KEY ACTION 3.3 The Prime Minister (PM) should use a mandate letter (which outlines the PM’s expectations and policy goals) to increase ministerial accountability within DFO; the letter could be used to provide the Minister of Fisheries and Oceans a mandate to respond to the Expert Panel’s recommendations; the mandate letter should be publicly available.</p>	
<p>RECOMMENDATION 4: That Fisheries and Oceans Canada (DFO) rapidly increase its rate of statutory and policy implementation.</p>	
<p>KEY ACTION 4.1 DFO should fully implement the <i>Oceans Act</i> to: (i) identify biodiversity hotspots and vulnerable biological habitats; (ii) establish a comprehensive and biologically meaningful network of MPAs; and (iii)</p>	

develop marine spatial planning with clear geographical priorities, explicit timelines, and transparent measures for public reporting.	
KEY ACTION 4.2 DFO should fully implement the <i>Species at Risk Act</i> for marine fishes by including endangered and threatened species on the national legal list and by affording them the full benefits of recovery strategies, including the identification of recovery targets, rebuilding timelines, and (when possible) limited directed harvests.	
KEY ACTION 4.3 DFO should fully implement existing policies on marine biodiversity use and conservation, such as those included within the Sustainable Fisheries Framework.	
RECOMMENDATION 5: That Canada implement statutory renewal to fulfil national and international commitments to sustain marine biodiversity.	
KEY ACTION 5.1 Draft and enact a modernized <i>Fisheries Act</i> , or a new statute, that: (i) identifies full implementation of the precautionary approach as an over-arching objective; (ii) provides legislative requirements and guidance on fully implementing the Sustainable Fisheries Framework; and (iii) identifies conservation of biodiversity as a core consideration in the development of fisheries management plans.	
KEY ACTION 5.2 Draft and enact federal aquaculture legislation that specifies requirements and guidance on national objectives and procedures for all aquaculture operations and that requires a principled approach to aquaculture operations, to ensure the protection of biodiversity.	
KEY ACTION 5.3 Consider enacting comprehensive biodiversity legislation similar to that existing in Australia and Norway to set legally binding requirements for biodiversity protection.	
KEY ACTION 5.4 Consider amending the <i>Oceans Act</i> to clarify integrated management procedures and responsibilities and to provide a firm legal foundation for implementing completed management plans.	
KEY ACTION 5.5 Strengthen the <i>Species at Risk Act</i> through key amendments that would: (i) establish a transparent evaluation and consultation process for decisions not to list a species at risk, including external review of supporting listing-decision analyses; (ii) clarify the procedure and process for developing recovery strategies and Key Action plans; and (iii) restrict discretion to exempt activities from SARA's prohibitions and incidental permitting requirements.	

<p>RECOMMENDATION 6: That the Government of Canada establish national operational objectives, indicators, and targets for marine biodiversity.</p>	
<p>KEY ACTION 6.1 The Government of Canada should establish operational objectives that relate to existing commitments to biodiversity conservation and formally integrate them in oceans and fisheries management; highest priority should be assigned to objectives pertaining to those impacts most likely to compromise national and international commitments to sustain marine biodiversity.</p>	
<p>KEY ACTION 6.2 DFO should establish biodiversity indicators and targets to assess progress towards meeting operational objectives, and annually report the status and trends of marine biodiversity (using indicators), as well as national progress in attaining policy objectives.</p>	

Recommendation 1. That the Government of Canada (GoC) identify international leadership in oceans stewardship and biodiversity conservation as a top government priority.

PROGRESS:

- THE GOVERNMENT OF CANADA HAS MADE GOOD PROGRESS IN FULFILLING THIS RECOMMENDATION.
- PROGRESS IS REFLECTED BY (I) POLICY AND STATUTORY RENEWAL, (II) PUBLIC RELEASE OF MANDATE LETTERS, (III) NEW INVESTMENTS IN SCIENCE, AND (IV) MULTIPLE AUDITS UNDER THE AUSPICES OF THE OFFICE OF THE AUDITOR GENERAL OF CANADA.

Summary of the Evidence

1.1 Public declarations by government: The PBC concludes that the most recent GoC (2015-2019) identified leadership in oceans stewardship and biodiversity conservation as a top priority. One example is in the Liberals' 2015 electoral platform which included a section entitled "Real Change: Protecting Our Oceans"³³:

"[T]he health of [our oceans]... is critical to safeguarding our environment and growing our economy. Our plan will help fish stocks recover, support eco-tourism, protect coastlines from erosion, ensure ecological integrity and protect species at risk. We will restore Canada's reputation as a leader in ocean science, strengthen our laws and regulations, and give communities more say in how we manage our oceans."

1.2 To achieve these objectives, the Liberals identified five specific initiatives: (i) meet Canada's international commitment to protect marine and coastal areas; (ii) invest in ocean science; (iii) strengthen Canada's laws; (iv) encourage community engagement; and (v) protect the marine environment from oil spills.³⁴

1.3 The 2015 mandate letter from the Prime Minister to the Minister of Fisheries, Oceans, and the Canadian Coast Guard [hereafter, Minister of Fisheries and Oceans]³⁵ included several priorities that would address the Expert Panel's Recommendation 1. These included commitments to: (i) increase the proportion of Canada's protected marine and coastal areas to 10% by 2020; (ii) restore funding to federal ocean science and monitoring programmes; (iii) use scientific evidence and the precautionary principle in fisheries and ecosystem management decisions; and (iv) examine the implications of climate change on Arctic marine ecosystems. These priorities were echoed in the 2016 mandate letter.

³³ <https://www.liberal.ca/realchange/trudeau-announces-plan-to-protect-canadas-oceans/>

³⁴ IBID

³⁵ <http://www.davidmckie.com/Ministers%20Mandate%20letters%20Consolidated%20with%20Index%20Nov%2016%202015.pdf>

1.4 The 2018 mandate letter to the minister³⁶ included the following priorities: (i) implement and further develop the Oceans Protection Plan to protect Canada's coastline (the world's longest) and marine species at risk; (ii) reform the *Fisheries Act* to restore lost protections and incorporate modern safeguards to protect fish and fish habitat; (iii) achieve protection of at least 10% of coastal and marine areas by 2020; and (iv) use scientific evidence, traditional Indigenous knowledge, and the precautionary principle, and take into account climate change, when making decisions affecting fish stocks and ecosystem management.

1.5 Expert Panel Key Action 1.1 – The GoC should fully implement existing statutory and policy commitments to sustain marine biodiversity: When the RSC Report was released in 2012, the most visible of Canada's international commitments to sustain biodiversity were embodied in the Aichi Biodiversity Targets, developed under the auspices of the CBD (Convention on Biological Diversity). Among these,³⁷ only Target 11 specified a quantitative commitment pertaining to oceans; Canada committed to conserve, by 2020, at least 10% of coastal and marine areas through the establishment of well-connected systems of protected areas. As of 1 August 2019, Canada had protected 13.82% of its marine and coastal environment³⁸ (meeting its commitment ahead of schedule), an almost 20-fold increase from the 0.8% that had been protected in 2012.

1.6 Amendments to the *Oceans Act* in May 2019³⁹ allowed for interim protections, maintenance of ecological integrity, and the establishment of networks of protected areas. To meet the 2020 deadline for Aichi Biodiversity Target 11, Canada established guidance on "other effective conservation measures"⁴⁰ so that it could include existing fisheries area closures and establish new ones more expeditiously than the processes required for Marine Protected Areas (MPAs) under the *Oceans Act* or National Marine Conservation Areas.

1.7 Canada also used guidance provided under the Sensitive Benthic Areas Policy, part of its Sustainable Fisheries Framework, to protect large areas of cold-water coral and sponge habitat, with a particular focus on the eastern Arctic and Atlantic. Following the 2018 CBD Conference of the Parties (COP),⁴¹ Canada committed to upgrading its domestic guidance in these areas to be in line with that agreed internationally.

1.8 Canada announced prohibitions on bottom trawling, mining, dumping, and oil and gas extraction in areas protected under the *Oceans Act* and *National Marine Conservation Areas Act*, in accordance with recommendations of an expert panel.⁴² Canada is currently updating

³⁶ <https://pm.gc.ca/eng/minister-fisheries-oceans-and-canadian-coast-guard-mandate-letter-august-28-2018>

³⁷ <https://www.cbd.int/sp/targets/>

³⁸ <https://cpaws.org/canada-exceeds-goal-of-10-ocean-protection-with-announcement-of-tuvaijuittuq-marine-protected-area-nunavut/>

³⁹ <https://www.dfo-mpo.gc.ca/oceans/conservation/act-loi/index-eng.html>

⁴⁰ <https://www.dfo-mpo.gc.ca/oceans/oeabcm-amcepz/guidance-eng.html>

⁴¹ <https://www.cbd.int/doc/c/9b1f/759a/dfcee171bd46b06cc91f6a0d/sbstta-22-l-02-en.pdf>

⁴² <https://www.dfo-mpo.gc.ca/oceans/conservation/advisorypanel-comiteconseil/index-eng.html>

policies under the *National Marine Conservation Areas Act* to provide clarity on protection measures and monitoring in National Marine Conservation Areas.⁴³

1.9 The recently (June 2019) amended *Fisheries Act* restored lost protections for fish and fish habitat, including prohibitions on habitat alteration, damage, and destruction. Canada initiated a \$75M Coastal Restoration Fund aimed at tangible measures to restore fish habitat on all three coasts.⁴⁴

2.0 Expert Panel Key Action 1.2 – The GoC should enhance transboundary and international governance arrangements by extending integrated management planning efforts across national maritime boundaries: Canada played a leading role from both a scientific and management perspective in its engagement as a Contracting Party with the Northwest Atlantic Fisheries Organization (NAFO) to close ~15% of the fishable area within the NAFO Regulatory Area to bottom fishing activities as of 2016.⁴⁵ NAFO closed the last mid-water trawl fishery on seamounts in 2019.⁴⁶ These bottom fishery closures have reduced the threat to vulnerable coral and sponge communities as well as seamount areas.⁴⁷

2.1 Canada's extended continental shelf reaches into the NAFO Regulatory Area, and currently there is active oil and gas activity within some of the NAFO closed areas, demonstrating a lack of a comprehensive approach to integrated management where biodiversity protections associated with one activity are not extended to others. Canada is currently undergoing a regional environmental impact assessment for oil and gas in this region. It is unclear what the consequences of this assessment will be for oil and gas development.

2.2 In 2016, Canada announced the protection of Georges and Corsair Canyons (~400km southwest of Halifax) from bottom fishing activity, complementing protections on the U.S. portion of Georges Bank.⁴⁸

2.3 In December 2016, Canada became a signatory to the Hamilton Declaration which established a Commission devoted to conserving biodiversity in the Sargasso Sea.⁴⁹

2.4 Canada provided leadership in negotiating the Central Arctic Ocean (CAO) Fisheries Agreement,⁵⁰ which was signed in October 2018. Canada hosted the first science meeting pursuant to the Agreement in May 2019. The Agreement will prohibit commercial fisheries for up to 16 years and until more scientific information is available. Commercial fishing will only be allowed after conservation and management measures have been adopted by one or

⁴³ <https://www.letstalknmcas.ca/lets-talk-nmcas>

⁴⁴ <http://www.dfo-mpo.gc.ca/oceans/crf-frc/index-eng.html>

⁴⁵ <https://www.nafo.int/Portals/0/PDFs/COM/2019/comdoc19-01.pdf>

⁴⁶ www.nafo.int

⁴⁷ <https://www.nafo.int/Fisheries/VME>

⁴⁸ <https://www.dfo-mpo.gc.ca/oceans/publications/backgrounder-fiche/corsair-georges-jordan/index-eng.html>

⁴⁹ <http://www.sargassoseacommission.org/about-the-commission/hamilton-declaration>

⁵⁰ <http://www.dfo-mpo.gc.ca/international/arctic-arctique-eng.htm>

more regional or sub-regional fisheries management organizations or arrangements, or pursuant to other interim measures which might be adopted under the Agreement.

2.5 Canada advocated for Indigenous knowledge to be included in the CAO agreement with regard to science advice.⁵¹

2.6 Expert Panel Key Action 1.3 – The GoC should increase Canada’s formal membership to international agreements that pertain to the sustaining of marine biodiversity, such as the Convention on the Conservation of Migratory Species of Wild Animals: Canada is still not a party to the Convention on the Conservation of Migratory Species of Wild Animals nor to any of its sub-agreements and Memorandum of Understandings (MOUs), such as the MOU on the Conservation of Sharks. Canada is not yet a party to the Inter-American Convention on the Protection and Conservation of Sea Turtles.

2.7 Canada has enhanced its engagement in the negotiations for a new high seas treaty to protect biodiversity, and deal explicitly with MPAs, environmental impact assessments, and access and benefit sharing of marine genetic resources. The treaty is expected to be completed in 2020 and should allow for more integrated management of the high seas.

2.8 Canada adopted the United Nations (UN) Sustainable Development Goals (including Goal 14, Life Below Water), signed the 2017 UN Oceans Conference Call to Action (Commonwealth Blue Charter), and has engaged in the annual UN Our Oceans conferences, all of which elevate the profile of taking meaningful action to reduce human impacts on the ocean.

2.9 Canada finalized regulations in line with the UN Port State Measures Agreement to reduce Illegal, Unreported, and Unregulated fishing, ratifying the agreement in July 2019.⁵²

3.0 Expert Panel Key Action 1.4 – The GoC should support research initiatives to strengthen scientific advice and ensure renewal of retiring scientific and managerial staff who have expertise in decision-making in the presence of complexity, trade-offs, uncertainties, and risks: In 2016, the GoC announced a \$197 million budget allocation to DFO earmarked for research scientists, biologists, oceanographers and technicians, as well as for acquiring new technology and equipment. The resultant new hires represented the greatest single boost to DFO’s⁵³ scientific staff since the extension of Canada’s exclusive economic zone of jurisdiction to 200 nautical miles in 1977.

3.1 In 2016, the GoC created the *Ocean Protection Plan*⁵⁴, a \$1.5 billion allocation of funding to enhance marine safety, preserve, and restore ecosystems, create stronger Indigenous and community partnerships, and strengthen the evidentiary basis for knowledge of how oil and petroleum products behave when spilled in marine environs.

⁵¹ <https://www.dfo-mpo.gc.ca/international/arctic-arctique-eng.htm>

⁵² <https://dfo-mpo.gc.ca/international/isu-iuu-eng.htm>

⁵³ ‘DFO’: commonly used acronym for Fisheries and Oceans Canada (formerly Department of Fisheries and Oceans)

⁵⁴ https://www.tc.gc.ca/eng/oceans-protection-plan.html#_Stronger_evidence_base

3.2 Expert Panel Key Action 1.5 –The GoC should fully support the provision and implementation of a management framework that maximizes opportunities for fisheries to achieve third-party certification of sustainability: Although the GoC has acknowledged the importance of third-party certification of sustainable fisheries,⁵⁵ food retailers, in partnership with NGOs and occasionally independent science advisors, have taken the lead in increasing the sustainable seafood available to consumers.⁵⁶

3.3 Canada assisted in developing Version 2.1 (2018) of the Fisheries Certification Process used by the Marine Stewardship Council (MSC), ensuring that Canada’s Sustainable Fisheries Framework was both applicable and in line with the MSC standard. DFO has staff dedicated to MSC certifications.

3.4 Expert Panel Key Action 1.6 – The Auditor General of Canada could undertake a full financial, statutory, and policy audit of Canada’s progress in meeting its international marine biodiversity obligations: Under the auspices of the Office of the Auditor General of Canada, the Commissioner of the Environment and Sustainable Development (CESD) has tabled several reports dealing with aspects of marine biodiversity since February 2012. The first was the 2012 Fall Report on *Marine Protected Areas*.⁵⁷ The audit concluded that many factors impeded Canada’s progress on creating MPAs.

3.5 The 2013 Fall Report of the CESD included a performance audit on *Meeting the Goals of the International Convention on Biological Diversity*.⁵⁸ The audit looked at whether Environment Canada (EC) had fulfilled selected responsibilities as the National Focal Point for the CBD. The CESD followed this 2013 audit with another in 2018 on *Conserving Biodiversity*.⁵⁹ The CESD found that Environment and Climate Change Canada (ECCC) had not (i) provided effective leadership or effectively coordinated actions required to achieve Canada’s 2020 biodiversity targets or (ii) compiled comprehensive information to report on performance and progress toward the 2020 targets.

3.6 The overarching conclusion of the CESD’s 2013 performance audit on *Recovery Planning for Species at Risk*⁶⁰ was that EC, DFO, and Parks Canada had not met their legal requirements for establishing recovery strategies, action plans, and management plans as required under the *Species at Risk Act*.

3.7 The CESD’s 2016 audit on *Sustaining Canada’s Major Fish Stocks*⁶¹ found that: (i) objectives in Integrated Fisheries Management Plans were often not stipulated, not clear, and not measurable; (ii) there were no rebuilding plans or development timelines for 80% of Canada’s severely depleted fish stocks; and (iii) reference points had not been developed

⁵⁵ www.sustainable-seafood.ca

⁵⁶ <https://www.livingoceans.org/sites/default/files/Taking-Stock-FINAL-Report.pdf>

⁵⁷ http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201212_03_e_37712.html#hd3a

⁵⁸ http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201311_02_e_38672.html#hd3a

⁵⁹ http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201804_03_e_42994.html

⁶⁰ http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201311_06_e_38676.html#hd3d

⁶¹ http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201610_02_e_41672.html

for more than half of Canada's major fish stocks. The CESD's audit corroborated the findings of a separate independent analysis.⁶²

3.8 In 2018, the CESD's Report on *Salmon Farming*⁶³ found deficiencies in how DFO and the Canadian Food Inspection Agency manage risks associated with Atlantic salmon aquaculture, a finding in accordance with the first independent review conducted under the auspices of Canada's Chief Science Advisor.⁶⁴

⁶² <https://www.oceana.ca/en/publications/reports/canadas-marine-fisheries-status-recovery-potential-and-pathways-success>

⁶³ http://www.oag-bvg.gc.ca/internet/English/parl_cesd_201804_01_e_42992.html

⁶⁴ <https://www.ic.gc.ca/eic/site/052.nsf/eng/00011.html>

Recommendation 2. That the Government of Canada (GoC) resolve regulatory conflicts of interest affecting Canada’s progress in fulfilling obligations to sustain marine biodiversity.

PROGRESS:

- THE GOVERNMENT OF CANADA HAS MADE LITTLE PROGRESS IN RESOLVING REGULATORY CONFLICTS OF INTEREST WITHIN FISHERIES & OCEANS CANADA.
- PROGRESS IS LIMITED TO (I) A NEW STATUTORY PROVISION FOR ADVISORY BODIES AND (II) INCREASED MINISTERIAL ACCOUNTABILITY THROUGH PUBLIC MANDATE LETTERS.

Summary of the Evidence

3.9 Expert Panel Key Action 2.1 – The GoC should develop processes and, if necessary, amend institutional structures to limit or eliminate real and perceived regulatory conflicts of interest: The 2012 Expert Panel identified regulatory conflict as an impediment to progress in fulfilling national and international commitments to sustain marine biodiversity. Some individual federal government departments have responsibilities both to conserve and protect biodiversity and to promote the exploitation of biodiversity. Regulatory conflict can compromise the integrity of regulatory science and decision making as well as public perception of that integrity. Each stakeholder (the public, industry, NGOs, coastal communities) is placed in the position of having to ask, with respect to each regulatory decision, whether its own interests have been unduly compromised by the interests of others.

4.0 There is little evidence that the GoC has developed processes to limit or eliminate real or perceived regulatory conflicts. Limited progress can be found in the revised *Fisheries Act* (section 4.01(1)): “The Minister may, in order to carry out the purpose of this Act, establish advisory panels and provide for their membership, functions and operation.” An independent panel on Aquaculture Science, under the auspices of the Chief Science Advisor of Canada, found that regulatory and promotional conflicts of interest within DFO resulted in a lack of transparency in how aquaculture science is funded.⁶⁵

4.1 Expert Panel Key Action 2.2 – The GoC should develop processes and, if necessary, amend institutional structures to ensure that ministers are fully and transparently accountable for policy commitments to the use and conservation of marine biodiversity: Progress has been made in strengthening ministerial accountability. This has been achieved by public release of mandate letters which outline the Prime Minister’s expectations and key priorities to be fulfilled during a Government’s mandate. Prior to 2015, mandate letters were not publicly available.

⁶⁵ https://www.ic.gc.ca/eic/site/063.nsf/eng/h_97725.html

Recommendation 3. That the Government of Canada (GoC) reduce the discretionary power in fisheries management decisions exercised by the Minister of Fisheries and Oceans.

PROGRESS:

- THE GOVERNMENT OF CANADA HAS MADE MODERATE PROGRESS IN REDUCING MINISTERIAL DISCRETION IN FISHERIES AND OCEANS MANAGEMENT DECISIONS.
- STEPS TO REDUCE DISCRETION ARE EVIDENCED BY A REVISED *FISHERIES ACT* THAT: (I) EXPLICITLY PROVIDES FOR STOCK REBUILDING; (II) FORMALIZES APPLICATION OF A PRECAUTIONARY-APPROACH BASED REFERENCE POINT; AND (III) PROVIDES FOR LEGISLATIVE ESTABLISHMENT OF ADVISORY BODIES.

Summary of the Evidence

4.2 Expert Panel Key Action 3.1 – The GoC should enact prescriptive legislation containing primary objectives to: (i) prevent overfishing; (ii) rebuild depleted fish stocks; (iii) formalize the explicit use of reference points and harvest control rules; and (iv) ensure transparency and accountability in fisheries management plans, including those relating to aquaculture: If these objectives were contained in the *Fisheries Act*, they would serve to reduce ministerial discretion to make decisions that hinder fisheries sustainability (such as the setting of directed quotas when stocks are depleted). The amended *Fisheries Act* includes, for the first time, provisions for stock rebuilding, including a requirement to rebuild above the Limit Reference Point, albeit only for major stocks prescribed by regulation. The Act still permits ministerial discretion by allowing, but not mandating, the minister to apply sustainability principles such as precaution and the ecosystem approach (section 2.5). DFO has made progress in making Integrated Fisheries Management Plans publicly available.⁶⁶

4.3 Expert Panel Key Action 3.2– The GoC should consider the establishment of independent, arms-length advisory or decision-making bodies on matters pertaining to the use and conservation of marine biodiversity, including catch allocations, licensing, and environmental impact assessments: The revised *Fisheries Act* formally allows for establishment of Advisory Bodies, such as the 2017 panel on MPA standards.⁶⁷ In 2018, Canada’s Chief Science Advisor was asked by the Ministers of Science and Fisheries and Oceans to lead an independent panel to provide recommendations on the use of science in decision-making on aquaculture.⁶⁸ A new *Impact Assessment Act*, receiving Royal Assent

⁶⁶ <http://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/survey-sondage/comparison-comparaison-en.html>

⁶⁷ <http://www.dfo-mpo.gc.ca/oceans/conservation/advisorypanel-comiteconseil/index-eng.html>

⁶⁸ https://www.ic.gc.ca/eic/site/063.nsf/eng/h_97725.html

in June 2019,⁶⁹ provides for environmental impact assessments of designated projects by the Impact Assessment Agency of Canada or independent review panels.

4.4 Expert Panel Key Action 3.3– The Prime Minister should use a mandate letter to increase ministerial accountability within DFO; the letter could be used to provide the Minister of Fisheries and Oceans a mandate to respond to the Expert Panel’s recommendations; the mandate letter should be publicly available: The Prime Minister’s mandate letters to three successive Ministers of Fisheries and Oceans (2015-2019) strengthened ministerial accountability regarding the use scientific evidence and the precautionary principle in fisheries and ecosystem management decisions. The mandate letter to the Minister of Environment and Climate Change (2015) directed the minister to respond quickly to science advice and complete recovery plans for species at risk in a timely manner. The public letters addressed issues that aligned with recommendations made by the Expert Panel regarding scientific evidence and the precautionary principle.

⁶⁹ <https://www.parl.ca/DocumentViewer/en/42-1/bill/C-69/royal-assent>

Recommendation 4. That Fisheries and Oceans Canada (DFO) rapidly increase its rate of statutory and policy implementation.

PROGRESS:

- FISHERIES AND OCEANS CANADA HAS MADE LIMITED PROGRESS IN INCREASING ITS RATE OF STATUTORY OR POLICY IMPLEMENTATION.
- PROGRESS IS LIMITED TO: (I) A REVISED *OCEANS ACT* THAT ALLOWS FOR INCREASED RATE OF ESTABLISHMENT OF MARINE PROTECTED AREAS; (II) A COMMITMENT TO RENDER LISTING DECISIONS UNDER THE *SPECIES AT RISK ACT* WITHIN A SPECIFIED TIME FRAME (36 MONTHS); AND (III) STATUTORY ACKNOWLEDGEMENT OF ELEMENTS OF SUSTAINABLE FISHERIES FRAMEWORK POLICIES.

Summary of the Evidence

4.5 Expert Panel Key Action 4.1 – DFO should fully implement the *Oceans Act* to: (i) identify biodiversity hotspots and vulnerable biological habitats; (ii) establish a comprehensive and biologically meaningful network of MPAs; and (iii) develop marine spatial planning⁷⁰ with clear geographical priorities, explicit timelines, and transparent measures for public reporting: The *Oceans Act* was renewed⁷¹, under the auspices of Bill C-55, to create a new order power to establish MPAs rapidly (a process used, for example, in August 2019 to create the Tuvaijuittuq MPA off Ellesmere Island). Almost half of the current 13.82% of protected marine areas was achieved under the auspices of the *Oceans Act*, setting the stage for MPA network planning.

4.6 Following broad consultation, DFO has been drafting network plans, although these are not publicly available. Overall, limited progress has been achieved in advancing marine spatial planning⁷² with the possible exception of the Pacific North Coast in British Columbia's waters.⁷³ In February 2017, the Minister of Fisheries and Oceans endorsed a plan for the Pacific North Coast Integrated Management Area (PNCIMA) and, in June 2018, the GoC and the leaders of 14 Central and North Coast First Nations entered into the Reconciliation Framework Agreement for Bioregional Oceans Management and Protection.

4.7 Expert Panel Key Action 4.2 – DFO should fully implement the *Species at Risk Act* for marine fishes by including species assessed by COSEWIC as endangered and threatened on the national legal list and by affording them the full benefits of recovery

⁷⁰ Marine Spatial Planning is commonly defined as a “public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that usually have been specified through a political process.” Nowlan, L. 2016. Brave new wave: marine spatial planning and ocean regulation on Canada’s Pacific. *Journal of Environmental Law and Practice* 29:151-201; <https://www.openchannels.org/literature/13854>

⁷¹ <https://laws-lois.justice.gc.ca/eng/acts/o-2.4/FullText.html>

⁷² <http://www.dfo-mpo.gc.ca/oceans/management-gestion/index-eng.html>

⁷³ Nowlan. 2016. IBID.

strategies, including the identification of recovery targets, rebuilding timelines, and (when possible) limited directed harvests: Little substantive progress has been achieved since 2011, the most recent year in which an endangered or threatened marine fish (as assessed by COSEWIC) was included on the national legal list (i.e., Schedule 1 of the *Species at Risk Act*). In 2017, the GoC adopted a policy⁷⁴ to limit listing decisions for aquatic species to 36 months after receipt of a species assessment from COSEWIC.⁷⁵ This 3-year time frame would represent a considerable improvement over the lengthy periods (more than ten years) that have elapsed between receipt of listing advice and listing decisions for some marine species, such as the shark, shortfin mako.⁷⁶

4.8 Since 2012, a limited number of species-specific initiatives have been developed for at-risk marine species. Examples include the Wild Atlantic Salmon Conservation Policy⁷⁷ (the objective of which is to restore and maintain healthy wild Atlantic salmon populations) and a \$167M investment in the science and management of three whale populations: Southern Resident Orca, North Atlantic Right Whale, and St. Lawrence Beluga⁷⁸.

4.9 Expert Panel Key Action 4.3 – DFO should fully implement its existing policies on marine biodiversity use and conservation, such as those included within the Sustainable Fisheries Framework: Revisions to the *Fisheries Act* (2019) strengthened implementation of the Sustainable Fisheries Framework insofar as the Act now incorporates an obligation to rebuild depleted fish stocks. For example, section 6.1(1) states: “If a major fish stock has declined to or below its limit reference point, the Minister shall develop a plan to rebuild the stock above that point in the affected area...”.

5.0 The revised *Fisheries Act* created a new power to develop regulations to establish long-term spatial restriction areas (marine refuges) to fishing activities to protect marine biodiversity. The amended Act also makes it easier to designate Ecologically Sensitive Areas to restrict threatening development or otherwise protect sensitive areas.⁷⁹

5.1 In response to the CESD 2016 audit, DFO committed⁸⁰ to address deficiencies in the setting of reference points, developing rebuilding plans, and completing Integrated Fisheries Management Plans (IFMPs). Since 2017, the percentage of stocks with limit reference points has increased from 53.6% to 64.4%. Three of 19 rebuilding plans for commercially fished species have been completed. The percentage of stocks included in IFMPs increased from 68.6 to 89.7%.⁸¹

⁷⁴ <https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/orders/timeline-amendments-schedule-1.html>

⁷⁵ Committee on the Status of Endangered Wildlife in Canada <http://www.cosewic.ca/index.php/en-ca/>

⁷⁶ <https://www.sararegistry.gc.ca/default.asp?lang=En&n=3A8F40D9-1>

⁷⁷ <https://dfo-mpo.gc.ca/campaign-campagne/wild-salmon-saumon-sauvage/index-eng.html>

⁷⁸ <https://dfo-mpo.gc.ca/campaign-campagne/protectingwhales-protegerbaleines/index-eng.html>

⁷⁹ <https://www.wcel.org/publication/ocean-law-developments-in-canada-2015-2019>

⁸⁰ <https://www.dfo-mpo.gc.ca/ae-ve/audits-verifications/18-19/work-plan-travail-eng.html>

⁸¹ *FisheryAudit.ca*

Recommendation 5. That Canada implement statutory renewal to fulfil national and international commitments to sustain marine biodiversity.

PROGRESS:

- CANADA HAS MADE MODERATE PROGRESS IN IMPLEMENTING STATUTORY RENEWAL TO FULFIL COMMITMENTS TO SUSTAIN MARINE BIODIVERSITY.
- PROGRESS IS REFLECTED BY: (I) REVISIONS TO THE *FISHERIES ACT*, *OCEANS ACT*, AND *CANADA PETROLEUM RESOURCES ACT*; (II) CONSULTATIONS FOR THE DEVELOPMENT OF AN *AQUACULTURE ACT*; AND (III) A NEW POLICY FOR TRANSPARENT DECISIONS AND JUSTIFICATION TO NOT LIST AN AQUATIC SPECIES ASSESSED TO BE AT RISK.

Summary of the Evidence

5.2 Expert Panel Key Action 5.1 – Draft and enact a modernized *Fisheries Act*, or a new statute, that: (i) identifies full implementation of the precautionary approach as an over-arching objective; (ii) provides legislative requirements and guidance on fully implementing the Sustainable Fisheries Framework; and (iii) identifies conservation of biodiversity as a core consideration in the development of fisheries management plans: For the first time since it was passed in 1868, the *Fisheries Act* now makes explicit mention of ‘precaution’. Section 2.5 identifies the first of several decision-making considerations to be “application of a precautionary approach and an ecosystem approach”. The Act does, however, permit ministerial discretion by allowing, but not mandating, the minister to apply key sustainability principles such as precaution.

5.3 The revised *Fisheries Act* includes a duty to maintain fish stocks at or above the level necessary to promote sustainability, explicitly stating the need to maintain fish stocks above their limit reference point, in accordance with the Sustainable Fisheries Framework.

5.4 The revised *Fisheries Act* contains new provisions related to marine conservation by providing additional ministerial powers to (i) close fisheries and address urgent situations (e.g., whale entanglement in fishing gear), (ii) designate Ecologically Significant Areas, (iii) protect areas for marine biodiversity, and (iv) prohibit shark finning in Canadian waters.

5.5 Expert Panel Key Action 5.2 – Draft and enact federal aquaculture legislation that specifies requirements and guidance on national objectives and procedures for all aquaculture operations and that requires a principled approach to aquaculture operations, to ensure the protection of biodiversity: In 2019, the federal government initiated consultations on a potential federal *Aquaculture Act*.⁸²

⁸² <http://dfo-mpo.gc.ca/aquaculture/consultations/loi-eng.html>

5.6 Expert Panel Key Action 5.3 – Consider enacting comprehensive biodiversity legislation similar to that existing in Australia⁸³ and Norway⁸⁴ to set legally binding requirements for biodiversity protection: There is no evidence to indicate that such legislation has been considered.

5.7 Expert Panel Key Action 5.4 – Consider amending the *Oceans Act* to clarify integrated management procedures and responsibilities and to provide a firm legal foundation for implementing completed management plans: The 2019 amendments to the *Oceans Act* failed to specifically address integrated ocean planning although some related progressions were made. These amendments did introduce the principle of ecological integrity for the first time in Canadian maritime law. The 2019 revisions also incorporated the precautionary principle into the Act. The government developed operational guidance for identifying and designating other effective area-based conservation measures (OECMs) and is in the process of updating this guidance to align with that agreed by the Convention of Biological Diversity. Although not MPAs, these conserved areas, such as spatial fishery closures, marine refuges, and Indigenous Protected Areas, can be considered OECMs in international marine conservation; they are included in Canada's efforts to meet the target of protecting 10% of marine and coastal areas by 2020.⁸⁵

5.8 Revisions to the *Canada Petroleum Resources Act* in 2019 allow the GoC to rescind oil and gas leases within MPAs established by the *Oceans Act*.

5.9 Expert Panel Key Action 5.5 – Strengthen the *Species at Risk Act* through key amendments that would: (i) establish a transparent evaluation and consultation process for decisions not to list a species at risk, including external review of supporting listing-decision analyses; (ii) clarify the procedure and process for developing recovery strategies and action plans; and (iii) restrict discretion to exempt activities from SARA's prohibitions and incidental permitting requirements: DFO has developed a *Species at Risk Act Listing Policy and Directive for "Do Not List" Advice*.⁸⁶ If DFO decides to advise against acceptance of COSEWIC's advice, the policy states that a compelling reason to do so must be publicly available and that this rationale must stem from a rigorous, structured, comprehensive and transparent analysis. The pace of development of recovery strategies and action plans has increased since the Expert Panel Report was released in 2012.⁸⁷ It is unclear whether discretion to exempt activities from SARA's prohibitions and incidental permitting requirements has been restricted.

6.0 For the first time (October 2019), an Aquatic Species Working Group has been established under the auspices of the Species at Risk Advisory Committee,⁸⁸ the primary committee of stakeholders responsible for advising ECCC under the *Species at Risk Act*.

⁸³ *Environmental Protection and Biodiversity Conservation Act*; <https://www.environment.gov.au/epbc>

⁸⁴ *Nature Diversity Act*; <https://www.regjeringen.no/en/dokumenter/nature-diversity-act/id570549/>

⁸⁵ <https://www.wcel.org/publication/ocean-law-developments-in-canada-2015-2019>

⁸⁶ <http://www.dfo-mpo.gc.ca/species-especes/publications/sara-lep/policy-politique/index-eng.html>

⁸⁷ <https://policyoptions.irpp.org/magazines/february-2017/recovering-the-species-at-risk-act/>

⁸⁸ <https://www.canada.ca/en/environment-climate-change/corporate/appointments/species-at-risk-advisory-committee-membership.html>

Recommendation 6. That the Government of Canada (GoC) establish national operational objectives, indicators, and targets for marine biodiversity.

PROGRESS:

- THE GOVERNMENT OF CANADA HAS MADE MODERATE PROGRESS IN ESTABLISHING NATIONAL OBJECTIVES, INDICATORS AND TARGETS FOR MARINE BIODIVERSITY.
- PROGRESS IS REFLECTED BY: (I) NATIONAL REPORTING OF PROGRESS TOWARDS ACHIEVING BIODIVERSITY TARGETS; AND (II) AUDITS TO TRACK PROGRESS IN IMPROVING MARINE FISHERIES STOCK STATUS AND MARINE POLICY COMMITMENTS.

Summary of the Evidence

6.1 Expert Panel Key Action 6.1 – The GoC should establish operational objectives that relate to existing commitments to biodiversity conservation and formally integrate them in oceans and fisheries management; highest priority should be assigned to objectives pertaining to those impacts most likely to compromise national and international commitments to sustain marine biodiversity: Since 2012, Canada has established a framework of required outcomes consistent with national and international biodiversity commitments.

6.2 The *National Report to the Convention on Biological Diversity*⁸⁹ identifies 19 national biodiversity targets to be achieved by 2020 and tracks progress in relation to these objectives.

6.3 Expert Panel Key Action 6.2 – DFO should establish biodiversity indicators and targets to assess progress towards meeting operational objectives, and annually report the status and trends of marine biodiversity (using indicators), as well as national progress in attaining policy objectives: In 2016, DFO initiated a *Sustainability Survey for Fisheries*⁹⁰ to track the performance of the fisheries under DFO's purview. Efforts to track progress in meeting sustainability targets are also undertaken by NGOs.⁹¹

6.4 Under the auspices of the Convention on Biological Diversity, Canada is co-leading the process that will establish post-2020 biodiversity targets. This is expected to lead to progressive biodiversity protection targets, following and building upon the 2010 Aichi Targets, at the COP15 in Beijing in 2020.

⁸⁹ https://biodivcanada.chm-cbd.net/sites/biodivcanada/files/inline-files/EN_Summary%20of%20Canada%27s%206th%20National%20Report_Final_2.pdf

⁹⁰ <http://www.dfo-mpo.gc.ca/reports-rapports/regs/sff-cpd/survey-sondage/index-en.html>

⁹¹ Examples include <https://cpaws.org/category/publications/> and <https://www.oceana.ca/en/publications/reports/fishery-audit-2018>

PART IV

Future Policy Challenges and Implementation Initiatives

Policy Challenge 1: *Ensure climate change impacts and projections are incorporated into decision making and planning processes related to marine biodiversity* — The 2012 Expert Panel Report concluded that climate change was the greatest challenge Canada faces in sustaining marine biodiversity because its effects on species and ecosystems will not be readily reversed. This conclusion is fully supported by the recent (September 2019) *Special Report on the Ocean and Cryosphere in a Changing Climate* by the Intergovernmental Panel on Climate Change (IPCC).⁹² The IPCC “highlights the urgency of prioritizing timely, ambitious, and coordinated action to address unprecedented and enduring changes in the ocean”.

Climate change is causing both gradual increases in ocean temperatures and marine heat waves, as well as ocean acidification.⁹³ These changes have ramifications for overall ocean productivity, species distributions, disease outbreaks, sea level rise, and other ecosystem changes, with resulting consequences for the wild fisheries and aquaculture that our oceans can support. Failure to incorporate climate change in ocean-related policies will reduce Canada’s ability to adapt to global heating and associated ocean changes.

Implementation Initiatives:

- The Government of Canada (GoC) should consider amending all key statutes to require or authorise the consideration of climate change impacts and projections. For example, the *Oceans Act* might specifically authorise the establishment of MPAs as ‘insurance policies’ to address climate change. The *Species at Risk Act* might require climate change considerations to be factored into decisions relating to the listing of species, recovery planning, and designation of critical habitat.
- The GoC should undertake marine species vulnerability assessments to identify those that have low, medium, and high vulnerability to climate change.
- The GoC should consider further developing policies relating to climate change and sustainable fisheries, aquaculture, and conservation of marine biodiversity.

Policy Challenge 2: *Resolve regulatory conflicts of interest affecting progress in fulfilling obligations to sustain marine biodiversity* — The 2012 Expert Panel identified regulatory conflict as an impediment to Canada’s progress in fulfilling national and international commitments to sustain marine biodiversity. Although some progress has been made, the GoC can do a great deal more to separate its responsibilities to conserve and protect biodiversity. Without effective mechanisms to ensure that all parts of

⁹² <https://www.ipcc.ch/2019/09/25/srocc-press-release/>

⁹³ IBID

Government are accountable for supporting policies on the conservation of biodiversity during decision making, progress towards fulfilling Canada's national and international obligations to sustain biodiversity will be impeded.

Implementation Initiatives:

- The GoC should develop processes and, if necessary, amend institutional structures to: (i) limit or eliminate real and perceived regulatory conflicts of interest; (ii) ensure that ministers are fully and transparently accountable for policy commitments to the use and conservation of marine biodiversity; and (iii) financially account for environmental costs associated with biodiversity loss, i.e., the costs connected with actual or potential deterioration of natural assets due to economic activities.⁹⁴

Policy Challenge 3: *Limit the discretionary power in fisheries management decisions exercised by the Minister of Fisheries and Oceans* — The 2012 Expert Panel concluded that Canada's progress in meeting its obligations to sustain marine biodiversity had been impeded by the absolute discretion afforded to the Minister of Fisheries and Oceans. The Commissioner of the Environment and Sustainable Development identified leadership and well-defined accountability as key elements to sustainable fisheries and the management of risks associated with salmon aquaculture.

Implementation Initiatives:

- The GoC should develop regulations under the revised *Fisheries Act* to give effect to the Act's rebuilding and sustainable management provisions by: (i) ensuring that all major stocks are included as soon as possible, through the regulatory process (currently the law applies to none); (ii) explicitly defining an objective to rebuild stocks to long-term sustainable target levels (i.e., the Upper Stock Reference, or USR); and (iii) specifying rebuilding timelines to the greatest extent possible.
- The GoC should further limit discretionary decision-making authority by establishing the explicit expectation that fisheries are to be managed with the aim of maintaining or restoring stock levels to maximize long-term sustainable harvests, unless the minister brings forward an argument, based on criteria defined in the Act or regulations, demonstrating why this is not feasible (e.g., constitutional obligations to Indigenous peoples, biological constraints).

Policy Challenge 4: *Clarify ambiguities in the Sustainable Fisheries Framework (SFF)* — There is a potential for the Precautionary Approach (PA) to be misused by any stakeholder intent on pursuing their own objectives to the exclusion of

⁹⁴ <https://stats.oecd.org/glossary/detail.asp?ID=819>

others. There is a need to implement measures to minimize the probability of misuse and misinterpretation of the PA.

Implementation Initiatives:

- Unambiguously define the roles of science, fisheries management, and stakeholders in the SFF, especially with respect to implementation of the PA, such as the establishment of target reference points (USRs) and harvest decision rules.
- Ensure that science advice is always publicly distinguishable from other sources of advice in the setting of reference points, harvest decision rules, and other fisheries management decisions.
- Clarify undefined elements of the SFF that inhibit effective implementation of the PA. (One example would be to state unambiguously that the policy directive that 'removals must be kept at the lowest possible level' when stock size is below its limit reference point means closure of all directed fisheries.)

Policy Challenge 5: *Advance and implement marine spatial planning (MSP)*

—The 2012 Expert Panel concluded that there was a lack of clear national guidance on how best to advance MSP in Canada. It found that the *Oceans Act* does not provide an ideal legal umbrella for MSP, providing only 'bare bone' integrated management planning responsibilities, with no procedural or content details, and no mention of an MSP approach.

Conflicts on all coasts of Canada are growing over large infrastructure projects, fishing and aquaculture, shipping, and marine protected areas. Climate change threatens to alter ecosystems and negatively affect coastal communities. Meaningful, respectful, and coordinated efforts to advance and implement MSP, with comprehensive zonal ecosystem-based initiatives, has potential to mitigate conflict as ocean-use pressures multiply.⁹⁵

Implementation Initiatives:

- The GoC should consider: (i) issuing a clear national policy or strategy on MSP; (ii) amending the *Oceans Act* to explicitly require MSP, establish clear planning procedures, and provide for enforceability of finalized plans; and (iii) ensuring that MSP processes do not delay implementation of biodiversity protection measures.
- A revised *Oceans Act* could be used to: (i) identify biodiversity hotspots and vulnerable biological habitats; (ii) establish a comprehensive and biologically meaningful network of MPAs; and (iii) develop MSP with clear geographical priorities, explicit timelines, and transparent measures for public reporting.

⁹⁵ Nowlan, L. 2016. Brave new wave: marine spatial planning and ocean regulation on Canada's Pacific. *Journal of Environmental Law and Practice* 29:151-201; <https://www.openchannels.org/literature/13854>