

Fisheries and Oceans Canada's Maritimes Region Ecosystem-Based Management Framework for Sustainable Management

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By

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List of Abbreviations

AIS	Aquatic Invasive Species
APC	Atlantic Policy Congress of First Nations Chiefs Secretariat
CEPA	Canadian Environmental Protection Act
CFRN	Canadian Fisheries Research Network
CGS	Canadian Coast Guard
DFO	Department of Fisheries and Oceans Canada
EAFM	Ecosystem Approach to Fisheries Management
EAM	Ecosystem Approach to Management
EBFM	Ecosystem-Based Fisheries Management,
EBM	Ecosystem-Based Management
ECCC	Environment and Climate Change Canada
ENGO	Environmental non-Government Organization
ESA	Ecologically Significant Area
ESSIM	Eastern Scotian Shelf integrated ocean management
FFHPP	Fish and Fish Habitat Protection Program
ICOM	Integrated Coastal and Oceans Management
ICZM	Integrated Coastal Zone Management
IFMP	Integrated Fisheries Management Plans (
IM	Integrated Management
IOM	Integrated Ocean Management
LOMA	Large Ocean Management Area
MOU	Memorandum of Understanding
MPA	Marine Protected Area
MSP	Marine Spatial Planning
NOAA	National Oceanographic
SAGE	Science Advice for Government Effectiveness
SES	Social-Ecological System
SFF	Sustainable Fisheries Framework
UNCLOS	United Nations Convention on the Law of the Sea
UNDA	United Nations Declaration on the Rights of Indigenous Peoples Act
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples

ABSTRACT

Bundy, A., Eger, S.L., Stephenson, R.L., Westhead, M, the Maritimes Ecosystem-Based Management (EBM) Working Group and EBM Task Group Members. 2025. Fisheries and Oceans Canada's Maritimes Region Ecosystem-Based Management Framework for Sustainable Management. Can. Tech. Rep. Fish. Aquat. Sci. 3716: vii + 175 p.
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Fisheries and Oceans Canada's Maritimes Region Ecosystem-Based Management (EBM) Framework version 1.0 articulates a comprehensive suite of core objectives and values based on Canadian policies and international agreements. One unique strength of this Framework comes from considering management issues and problems across Governance, Ecological, Economic and Social and Cultural Pillars and objectives. It provides a common tool for assessing the Department's national and regional progress on legislative commitments, mandate letter priorities, and various policies that require full consideration of the four pillars of sustainability. It will be useful in developing advice that addresses the consequences of potential management scenarios, including the identification and quantification of trade-offs. It is anticipated that the EBM framework, because of its holistic nature, will provide a common basis for further development of Integrated Management, Marine Planning and Blue Economy. While it was designed primarily for use in support of management planning, it will also be useful in internal departmental program and project planning. A second unique strength of this Framework is the collaborative, participatory process through which it was developed. The collaborative development process that spanned 2019-2024 included workshops and interdisciplinary task groups that brought together Fisheries and Oceans Canada staff from multiple sectors, Indigenous participants and leading Social Science and Humanities (SSH) academics for each of the four pillars of the EBM Framework. On-going work with Indigenous organizations is exploring how to strengthen the Framework with Indigenous values and ways of knowing and whether there are common values and principles underpinning both EBM and Indigenous knowledge systems that can serve as a bridge toward co-governance. Overall, this process has expanded EBM thinking across DFO sectors and provides the foundation for EBM in DFO.

RÉSUMÉ

Bundy, A., Eger, S.L., Stephenson, R.L., Westhead, M, the Maritimes Ecosystem-Based Management (EBM) Working Group and EBM Task Group Members. 2025. Fisheries and Oceans Canada's Maritimes Region Ecosystem-Based Management Framework for Sustainable Management. Can. Tech. Rep. Fish. Aquat. Sci. 3716: vii + 175 p.

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Un ensemble complet de valeurs et d'objectifs fondamentaux reposant sur des politiques canadiennes et des accords internationaux est présenté dans la version 1.0 du cadre de gestion écosystémique de la région des Maritimes de Pêches et Océans Canada. L'un des points forts de ce cadre réside dans le fait qu'il permet d'examiner des questions et des problèmes en matière de gestion en fonction de piliers et d'objectifs liés à la gouvernance, à l'écologie, à l'économie, à la société et à la culture. Il sert d'outil commun pour évaluer les progrès réalisés par le Ministère à l'échelle nationale et régionale en ce qui concerne les engagements législatifs, les priorités de la lettre de mandat et diverses politiques qui exigent la prise en compte des quatre piliers de la durabilité. Il sera utile pour l'élaboration d'avis traitant de l'ensemble des conséquences des scénarios de gestion potentiels, notamment en ce qui concerne la détermination et la quantification des compromis. En raison de sa nature globale, il est prévu que le cadre de gestion écosystémique serve de base commune pour poursuivre le développement de la gestion intégrée, de la planification marine et de l'économie bleue. Bien qu'il ait été conçu principalement pour faciliter la planification de la gestion, il sera également utile pour la planification interne des programmes et des projets du Ministère. Le fait que le cadre a été élaboré par l'intermédiaire d'un processus collaboratif et participatif constitue un deuxième point fort de celui-ci. Au cours du processus collaboratif d'élaboration qui s'est étalé de 2019 à 2024, des employés de Pêches et Océans Canada issus de multiples secteurs, des Autochtones et des universitaires influents en sciences humaines ont participé à des ateliers et à des groupes de travail interdisciplinaires relatifs à chacun des quatre piliers du cadre de gestion écosystémique. Des travaux actuellement menés en collaboration avec des organisations autochtones visent à étudier des moyens de renforcer le cadre en s'appuyant sur les valeurs et les modes de connaissance autochtones et à vérifier si des valeurs et des principes sous-tendant à la fois la gestion écosystémique et les systèmes de connaissances autochtones peuvent permettre de faire une transition vers une co-gouvernance. D'une manière générale, ce processus a permis de pousser la réflexion sur la gestion écosystémique dans l'ensemble des secteurs de Pêches et Océans Canada et de jeter les bases de la gestion écosystémique au sein du Ministère.

Introduction

Sustainable management of aquatic resources (marine, estuarine and freshwater) is an enormous challenge, made more difficult by increasing pressures on aquatic resources, competing uses and complex governance systems. Pressures include mortality to aquatic biota, habitat destruction due to fishing and other extractive industries, changing ocean chemistry and the impacts of climate change, pollution, and invasive species leading to loss of biodiversity, productivity, habitat and change in ecosystem structure and functioning. Competing uses include fishing, aquaculture, oil and gas exploration, offshore wind development, coastal development, recreation, tourism and potential seabed mining. Typically, different uses are managed by different government departments, often at different scales (municipal, provincial/state and federal). It is being increasingly recognized globally that achieving sustainable management requires an alternative to the single sector, business-as-usual governance approach (Rudd et al., 2018; Link et al., 2019; Dickey-Collas et al., 2022; Haugen et al., 2024). Ecosystem-based management (EBM) is recognized as a best practice for managing multiple aquatic resource uses and their associated ocean-use sectors (Link and Browman, 2017; McLeod and Leslie, 2009). Based on Long et al. (2015) and Smith et al. (2017), EBM is defined here as:

“an interdisciplinary approach that considers ecological, economic, social, cultural and governance objectives to achieve sustainable resource use at appropriate temporal and spatial scales. EBM recognizes the interconnected nature of social-ecological systems and considers human activities and environmental stewardship in a multiple use context.”

This differs from current approaches to management where these considerations are treated separately, in different processes, and in different ways. EBM facilitates sustainable and resilient ecosystems that account for both good environmental health and human wellbeing (Millennium Ecosystem Assessment (Program), 2005; Ban et al., 2019). The current state of the world’s ecosystems demonstrates that there is global urgency to implement EBM (Murphy, 2022).

EBM advances Government of Canada and Fisheries and Oceans Canada priorities

Canada aspires to achieve sustainable management of its aquatic systems¹, yet its efforts are subject to the challenges described above. Further, in Canada and globally, both the legal and the practical context for EBM in sustainable aquatic management are changing due to new and developing initiatives including evolving perspectives on truth and reconciliation with Indigenous Peoples, sustainability, climate change, the ‘blue economy’ and the Kunming-Montreal Global Biodiversity Framework (GBF, United Nations, 2022)². The scope of sustainability is broad, therefore the scope of EBM must also be broad.

¹ e.g. <https://www.dfo-mpo.gc.ca/about-notre-sujet/mandate-mandat-eng.htm>; Report of the High-level panel for sustainable Ocean economy: <https://live-oceanpanel-wp.pantheonsite.io/publication/100-sustainable-ocean-management-an-introduction-to-sustainable-ocean-plans/>, *Oceans Act* (e.g. Rudd et al 2018: <https://doi.org/10.3389/fmars.2018.00485>), and Canada’s Blue Economy, <https://www.dfo-mpo.gc.ca/campaign-campagne/bes-seb/index-eng.html>

² [Canada’s 2030 Nature Strategy and the Nature Accountability Bill - Canada.ca](#)

The federal department of Fisheries and Oceans Canada (DFO) currently has the mandate to manage Canada’s fisheries and oceans resources to ensure healthy and sustainable aquatic ecosystems. Various key pieces of legislation require DFO to implement ecosystem approaches to fisheries and oceans management (e.g., *Oceans Act* (Government of Canada, 1996); *Fisheries Act*, (Government of Canada, 1985a), Rudd et al., 2018; Link et al., 2019). Under the *Oceans Act*, integrated management and an ecosystem approach are integral to the protection and conservation of the marine environment (Box 1). Since its implementation in 1996, there have been a number of DFO initiatives under the *Oceans Act* to explicitly advance an ecosystem approach in Canada. However, the focus on an ecosystem approach has ebbed and flowed within DFO both nationally and regionally (Figure 1). It has included holistic approaches such as integrated management plans³ (e.g., Eastern Scotian Shelf integrated ocean management (ESSIM), McCuaig and Herbert, 2013); the Oceans Action Plan (Fisheries and Oceans Canada, 2005); the publication of “a New Ecosystem Science Framework in Support of integrated Management” (Fisheries and Oceans Canada, 2007a); development of a Maritimes Region Ecosystem Approach to Management framework (Curran et al., 2012), consideration of a national policy regarding an ecosystem approach (Curran et al., 2012) and more recently, marine spatial planning (Fisheries and Oceans Canada, 2024). In parallel there have been efforts to develop a robust ecological basis for EBM, such as defining Ecologically and Biologically Significant Areas (DFO, 2004, 2007); Marine Protected Areas (MPAs), Marine Protected Area Networks⁴ and Marine Conservation Targets⁵.

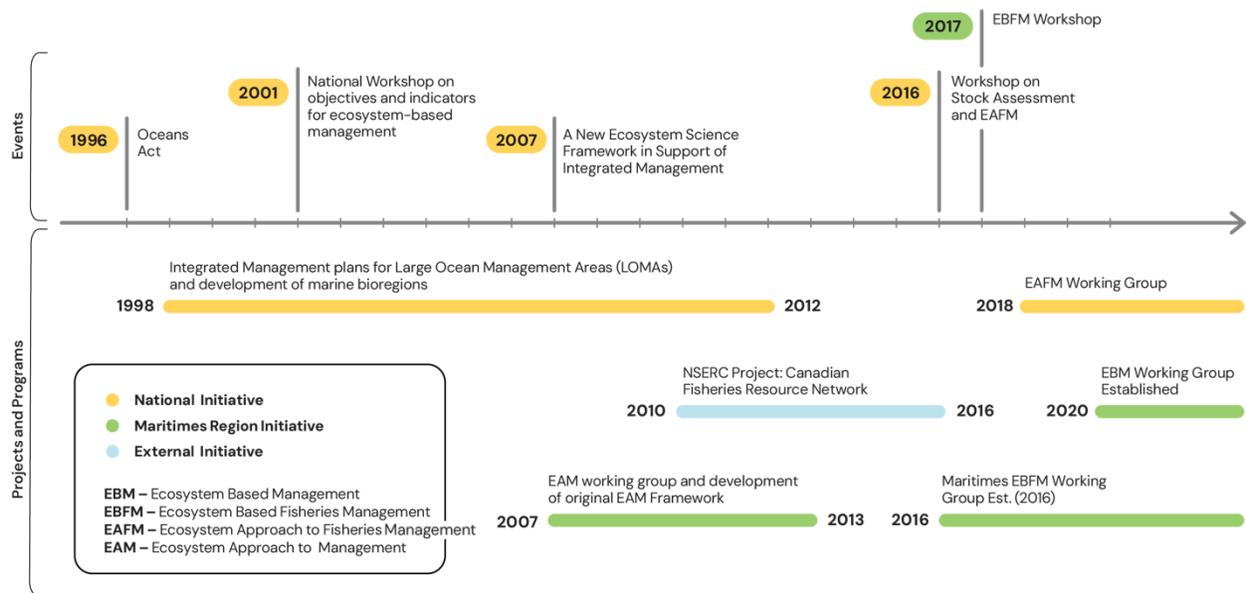


Figure 1. Time line showing the history of EBM in DFO

The mandates, laws and policies that guide DFO’s management of Canada’s fisheries, oceans and freshwater resources continue to progress towards the application of an ecosystem approach

³ [Integrated oceans management \(dfo-mpo.gc.ca\)](https://www.dfo-mpo.gc.ca/integrated-oceans-management/)

⁴ [Marine Protected Areas \(MPA\) and networks](https://www.dfo-mpo.gc.ca/marine-protected-areas/)

⁵ <https://www.dfo-mpo.gc.ca/oceans/protection-conservation/index-eng.html>

that includes integrated management, consideration of environmental conditions and the precautionary approach. For example, the National Framework for Canada’s Network of Marine Protected Areas (Fisheries and Oceans Canada, 2011) outlines an overarching vision for MPAs and its guiding principles specifically speak to the need for a holistic EBM approach: “Apply the precautionary approach; apply sustainable development, integrated oceans management and ecosystem-based management principles; utilize the full suite of best available knowledge (i.e., scientific, traditional, industry, community, etc.); and practice adaptive management (i.e., adjust management policies and practices on an ongoing basis in response to new ecological or socio-economic information and emerging issues with respect to network design or implementation)”, (p.14). The Aquaculture Policy Framework (Fisheries and Oceans Canada, 2008) principles include “DFO will support aquaculture development in a manner consistent with its commitments to ecosystem-based and integrated management, as set out in departmental legislation, regulations and policies”(p.4). More recently, amendments to regulations and programming have supported incremental steps towards EBM, such as the *Fisheries Act* (1985a, amended 2019). The *Fisheries Act* stipulates that the Minister must consider the environmental conditions affecting fish stocks and provides discretion to the Minister to consider socio-economic and cultural impacts while amending or implementing limit reference points and rebuilding plans. Further, DFO’s Sustainable Fisheries Framework⁶ (SFF), which guides Integrated Fisheries Management Plans (IFMPs), also requires integration of social and economic considerations into management plans (Fisheries and Oceans Canada, 2019a).

In 2018, DFO established a National Ecosystem Approach to Fisheries Management (EAFM) Working Group, with the objective to develop a national implementation plan to operationalize an ecosystem approach to fisheries management⁷. The Working Group includes representatives from Science and Fisheries Management from the seven DFO regions⁸, located from coast to coast to coast, and scientists, fisheries managers, and policy makers from National Capital Region (Ottawa). Collectively, the group’s plan is to advance ecosystem considerations in DFO science advice and fisheries management recommendations, and to develop the foundation to move towards more comprehensive ecosystem approaches over the longer term. DFO defines EAFM as a single-stock approach that “incorporates ecosystem information into stock assessments, science advice, management recommendations, integrated fishery management plans or other harvest strategies (i.e., the science-management cycle) to better inform stock and individual fishery-focused decisions” (DFO’s *Strategic Plan for Implementing an Ecosystem Approach to Fisheries Management* (in preparation)). See Box 1 for further notes on terminology and definitions.

⁶ [Sustainable fisheries framework](#)

⁷ [Ecosystem approach to fisheries management \(EAFM\) \(dfo-mpo.gc.ca\)](#)

⁸ Pacific, Arctic, Ontario and Prairie, Quebec, Gulf, Maritimes, and Newfoundland and Labrador - <https://www.dfo-mpo.gc.ca/about-notre-sujet/organisation-eng.htm>

BOX 1: A note on terminology

There has been a global movement towards holistic, ecosystem-based, integrated governance and management of aquatic systems (e.g., Kelly et al., 2019; Eger et al., 2021a; Stephenson et al., 2021; Haugen et al., 2024). Accompanying this movement are both a number of similar holistic approaches and a range of terms to describe these approaches. Stephenson et al. (2021) have described these similar approaches as a “Quilt of Sustainable Ocean Governance”, which includes an ecosystem approach and Integrated Management (IM), both of which Canada has committed to in the *Oceans Act* (1996).

Ecosystem Approach

There is a spectrum of ecosystem approaches (Figure A) that includes:

- EAFM - an ecosystem approach to fisheries management, which incorporates ecosystem information into the science-management cycle, focused at the single stock level*;
- EBFM - ecosystem-based fisheries management, defined as “a systematic approach to fisheries management in a geographically specified area that contributes to the resilience and sustainability of the ecosystem; recognizes the physical, biological, economic, and social interactions among the affected fishery-related components of the ecosystem, including humans; and seeks to optimize benefits among a diverse set of societal goals” (NOAA, 2024**);
- EBM – ecosystem-based management, which is “a holistic, integrated approach that explicitly recognizes the interconnected nature of ecosystems, combines human activities and environmental stewardship in a multiple use context and requires integrated consideration of the ecological, economic, social-cultural and governance aspects of advice and management” – see main text; and
- EAM – ecosystem approach to management – this can be considered equivalent to EBM since they are used interchangeably by the international community (Marshak et al., 2017, Stephenson et al., 2021). EBM is currently used more commonly.

Integrated Management

Integrated Management (IM) is ‘an approach that links (integrates) planning, decision making and management arrangements across sectors in a unified framework, to enable a more comprehensive view of sustainability and the consideration of cumulative effects and trade-offs’ (Stephenson et al., 2019). It is core to the *Oceans Act*, which under Section 31 provides authority to DFO to lead IM activities:

“The Minister, in collaboration with other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements, shall lead and facilitate the development and implementation of plans for the integrated

* <https://www.dfo-mpo.gc.ca/fisheries-peches/initiatives/ecosystems-approach-approche-ecosystemique/index-eng.html>

** <https://www.fisheries.noaa.gov/resource/document/ecosystem-based-fisheries-management-road-map>

BOX 1: A note on terminology (cont.)

management of all activities or measures in or affecting estuaries, coastal waters and marine waters that form part of Canada or in which Canada has sovereign rights under international law.”

While the *Oceans Act* uses the term Integrated Management, IM may also be referred to as integrated oceans management (IOM), integrated coastal and oceans management (ICM or ICOM) and integrated coastal zone management (ICZM). These approaches and EBM have many features in common, with the same end goal – sustainable management. The common principles and cross-cutting qualities of these approaches include a shared vision among participants, transparency, meaningful collaboration, equity, horizontal and vertical linkages, evidence-based decision making, proactive and strategic, iterative and adaptive, among others.

IM is related to, and operationalized through, various management-level efforts, mechanisms and approaches (programs, plans, policies, etc.) including a blue economy, marine planning, sustainable oceans plans, cumulative or strategic impact assessment, conservation networks and ecosystem-based management (including EAM, etc., Eger et al., 2021a; Stephenson et al., 2023; Government of Canada, 2024***). Understanding how EBM and IM relate, as well as how they are supported and achieved through other management approaches, underscores the importance and contribution of EBM in fulfilling section 31 of the *Oceans Act*.

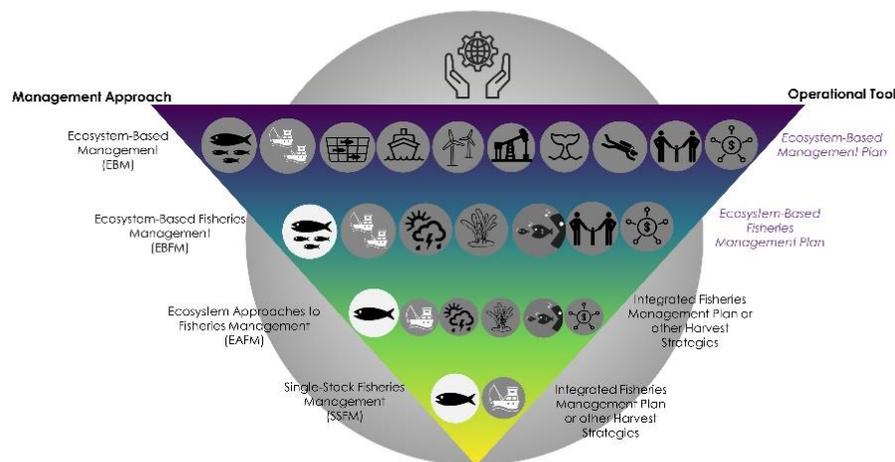


Figure A. The EBM Spectrum. Adapted from Tam et al., 2024

*** Integrated oceans management - <https://www.dfo-mpo.gc.ca/oceans/management-gestion/index-eng.html>

Updating and Revitalizing EBM in DFO - the Maritimes EBM Initiative

Building on these national initiatives, the Maritimes Region of DFO has made progress towards operationalizing EBM with the formation of the EBM Initiative and development of a holistic EBM Framework version 1.0 (Figure 2, Bundy et al., 2021; Daly et al., 2020). The goal of the EBM Initiative is to promote EBM in the Maritimes Region through the development and use of the EBM Framework and associated activities. The EBM Framework is intended to be used as a decision-support tool for all sectors in DFO to apply an EBM approach to decisions related to fisheries, oceans, estuarine, and freshwater management in the Maritimes Region and potentially across Canada ranging from the management of individual activities (e.g., fisheries plans, species at risk recovery documents) through to the integrated management of multiple activities in an area.

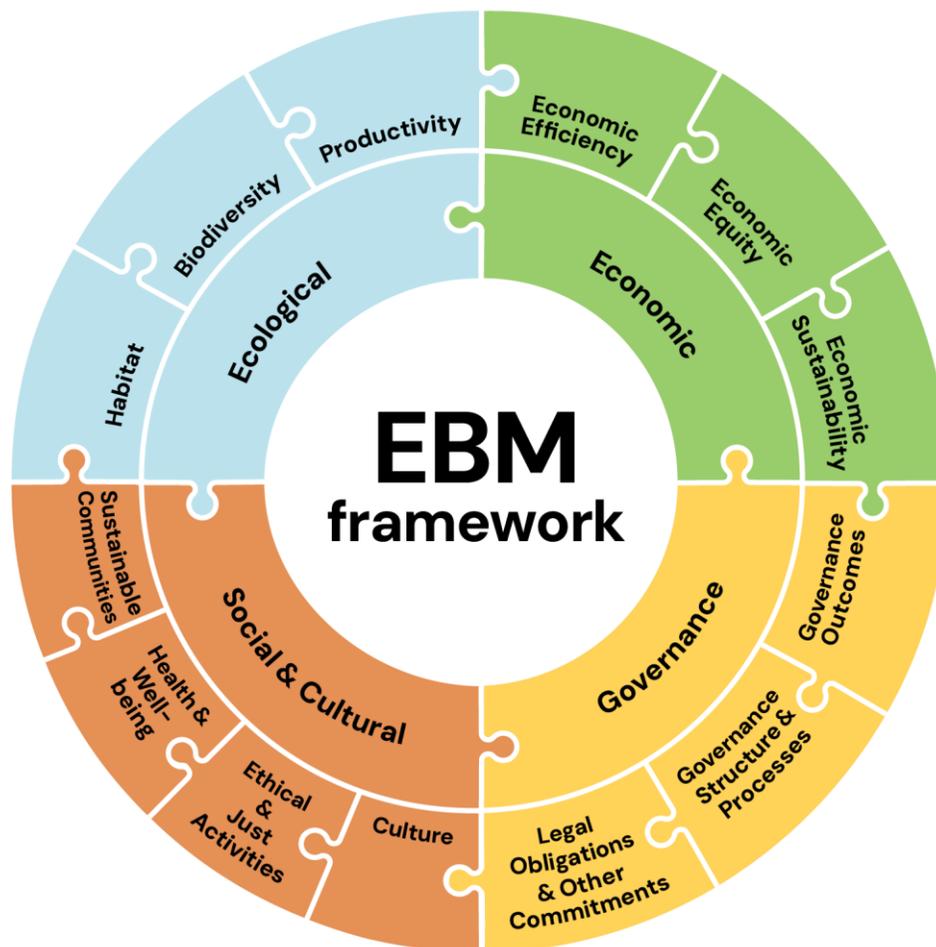


Figure 2. The Maritimes Region EBM Framework (version 1.0)

The EBM Framework includes the four pillars of sustainability, Governance, Ecological, Economic, and Social and Cultural (Stephenson et al., 2019a,b). Each pillar has been unpacked into a series of candidate objectives that are based on DFO policies, Government of Canada policies and Canadian International commitments, including the United Nations Declaration on the Rights of

Indigenous Peoples (UNDRIP, United Nations, 2007), Canada’s *United Nations Declaration on the Rights of Indigenous Peoples Act* (UNDA, Government of Canada, 2021) and DFO’s Reconciliation Strategy⁹ (Fisheries and Oceans Canada, 2019b). These objectives are intended to represent values, as reflected in Canada’s guiding legislation, and measures to achieve them. Indigenous values are being explored through on-going collaboration with First Nations organizations and rights holders in Atlantic Canada (see Section [Indigenous Engagement](#) below).

The EBM Framework is being developed with the potential to be used across government departments, by other decision-making authorities and in consultation with Indigenous organizations and rights holders. To this end, the EBM Framework has been developed to be applicable to the broad scope of DFO’s mandate in marine, freshwater and estuarine systems. In some instances, it reaches beyond DFO’s mandate in recognition of the multidimensional aspects of EBM and the need for both a whole of government approach and inclusive governance. The EBM Framework provides a range of Governance, Ecological, Economic, Social and Cultural objectives within a consistent, structured framework to support transparent, evidence-based decision making.

This report describes the development of version 1.0 of the Maritimes Region’s EBM Framework and the planned uses of the framework, and concludes with considerations for next steps.

Development of the Maritimes EBM Framework (Version 1.0)

Development of version 1.0 of the EBM Framework (Figure 2) was informed by earlier work including the original Maritimes Region Ecosystem Approach to Management (EAM) framework, developed in the early 2000s with an initial focus on fisheries (Gavaris, 2009), but subsequently expanded to include other activities (Curran et al., 2012). EAM and EBM can be considered equivalent approaches (see Box 1, Marshak et al., 2017; Stephenson et al., 2021). The original EAM framework, similar to earlier DFO efforts to advance sustainability, was focused primarily on ecological considerations, but anticipated the need for the addition of social and economic aspects. It has been in use in the Maritimes Region for over a decade, being incorporated into some Integrated Fisheries Management Plans¹⁰, and forming the basis of ecological objectives for some MPAs (Daly et al., 2020). More recently, the Canadian Fisheries Research Network (CFRN, 2010-2016; Thompson et al., 2019) developed a “Sustainability Framework” by expanding the Maritimes Region EAM framework to include additional objectives, thus creating the four “pillars of sustainability”—Ecological, Economic, Social and Cultural, and Institutional (CFRN Sustainability Framework; Stephenson et al., 2018, 2019a).

The publication of the CFRN Sustainability Framework led DFO Maritimes region to hold a workshop in 2019 to assess whether the original EAM Framework was still fit for purpose or if it needed to be broadened and updated using the new Sustainability Framework as its basis (Daly et al., 2020). Workshop participants, which included representatives from various DFO sectors, agreed that the EAM Framework did need to be broadened and updated and that the CFRN framework, with its four pillars of sustainability, was an appropriate model for this purpose.

⁹ <https://www.dfo-mpo.gc.ca/fisheries-peches/aboriginal-autochtones/reconciliation-eng.html>

¹⁰ [Integrated Fisheries Management Plans](#)

An outcome of the workshop was an initial version of the new proposed EBM Framework, which included the four pillars and initial definitions for the highest-level objectives within them, i.e., Ecological, Economic, Social/Cultural and Institutional/Governance (Figure 3, Daly et al., 2020). The term “EBM” was used in preference to the term “EAM” since now DFO uses EBM (e.g., Fisheries and Oceans Canada, 2002a,b), EBM is also more commonly used globally and is therefore more coherent with global terminology. Further, using the term EBM differentiates this broader, holistic EBM Framework from the earlier, more ecological focused EAM Framework.

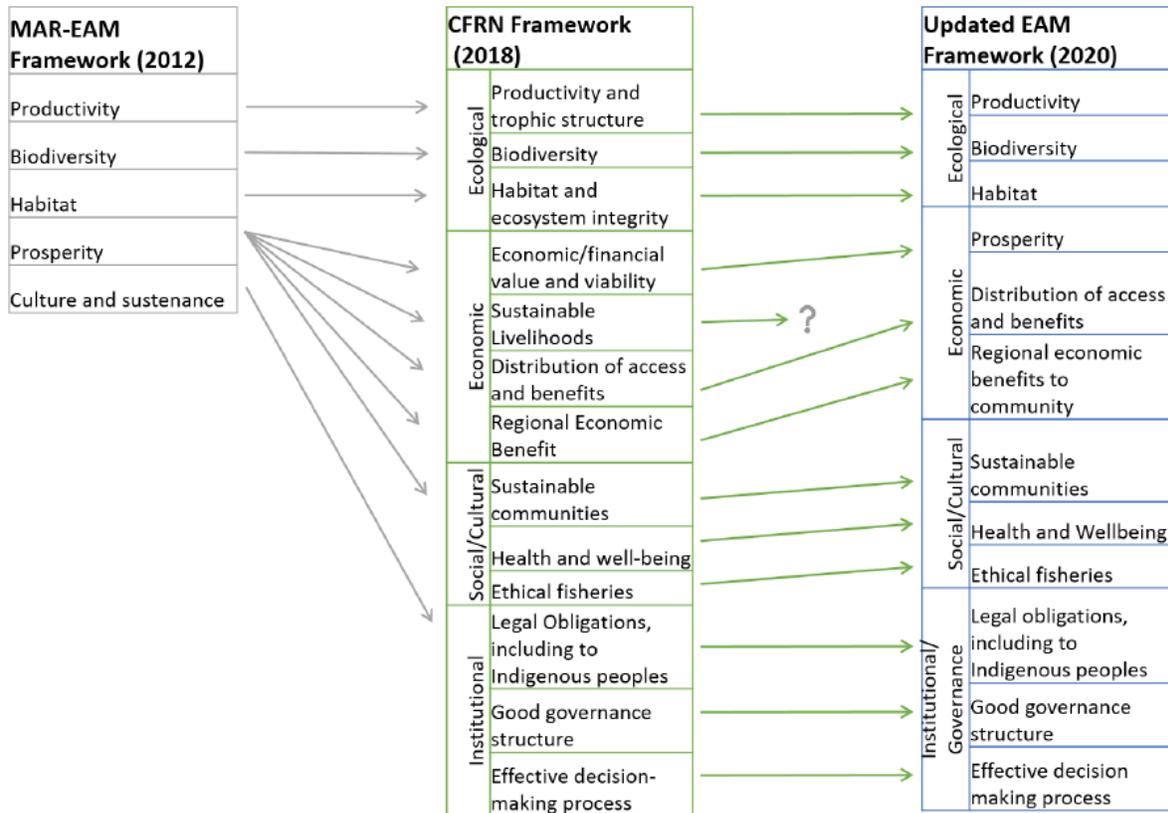


Figure 3. Illustration of EAM/EBM Framework evolution—focusing on core objectives (Adapted from Figure 3, Daly et al., 2020). The left hand panel represents the Maritimes EAM Framework developed in the 2000s (Curran et al., 2012). The middle panel represents the CFRN Sustainability Framework (Stephenson et al., 2018, 2019a,b) and the right hand panel represents the updated Framework produced at the 2019 workshop. The question mark next to “Sustainable Livelihoods” in the middle panel was intended to indicate that, at the time of the first 2019 workshop, it was unclear which objective it mapped onto in the right hand panel.

In January 2020, with senior DFO management approval, the Maritimes EBM Initiative was launched with the initial objective of developing a new EBM Framework relevant to the current and future issues facing DFO in its mandate to sustainably manage Canada’s aquatic systems.

The EBM Initiative

The EBM Initiative was established in the Maritimes Region through an EBM Working Group that included membership across the breadth of DFO Sectors (Science, Aquatic Ecosystems, Fisheries Management, Policy and Economics and Communications, see [Appendix 1](#) for membership details). This ensured that (a) each sector would have input into the EBM Framework and (b) the Framework would, to the extent possible, reflect each sectors' needs. In general, Science and Policy and Economics conduct research and provide advice to the two management sectors, Aquatic Ecosystems and Fisheries Management. Aquatic Ecosystems¹¹ is responsible for the management of Marine Planning and Conservation, including the Marine Protected Areas program, Aquaculture Management Program, Ecosystems Management including the Fish and Fish Habitat Protection (Regulatory Review), Species at Risk and Integrated Planning, and Engagement and Partnerships. Fisheries Management¹² is responsible for Fisheries Resources Management, Indigenous Fisheries, Conservation and Protection, Fisheries and Licence Policy and Small Craft Harbours. To further promote cross sectoral integration and to promote the success of the EBM Framework, the EBM WG is co-championed by the Regional Directors of Science and Aquatic Ecosystems. This has been critical to the success of the EBM Initiative since the Regional Directors have insight into the scope of activities within their sectors, links to the other Regional Directors and to Senior Management. They are able to both represent the value of the EBM initiative to Senior Management and provide insights on the Maritimes Region's priorities and possible opportunities to the EBM WG.

The core goal of the EBM Initiative is to promote EBM in the Maritimes Region through the development and implementation of the EBM Framework and its approval for use in the Maritimes region and nationally. These goals have been pursued through a collaborative, inclusive approach (Figure 4). There are three main components of the EBM Initiative: the development process, testing the EBM Framework, and Communications and Outreach.

Most of this report is dedicated to describing the development of the EBM Framework, the contents of the EBM Framework (version 1.0), and the planned uses and testing of the EBM Framework. The report concludes with considerations for next steps, including communications and outreach.

The Development Process

The EBM Framework was developed through an inclusive, collaborative process (Figure 4) beginning with the first multisectoral DFO workshop in December 2019, Workshop I (Daly et al., 2020). Since Workshop I, there have been several events and processes to include transdisciplinary expertise and knowledge in the development of the EBM Framework, especially in the social sciences, and Indigenous knowledge, voices and ways of being (Figure 5). The events and processes have included two further workshops, the development of four task groups, an

¹¹ [Aquatic Ecosystems](#)

¹² [Fisheries](#)

Indigenous information session and a dedicated funded project with the Atlantic Policy Congress of First Nations Chiefs Secretariat (APC)¹³.

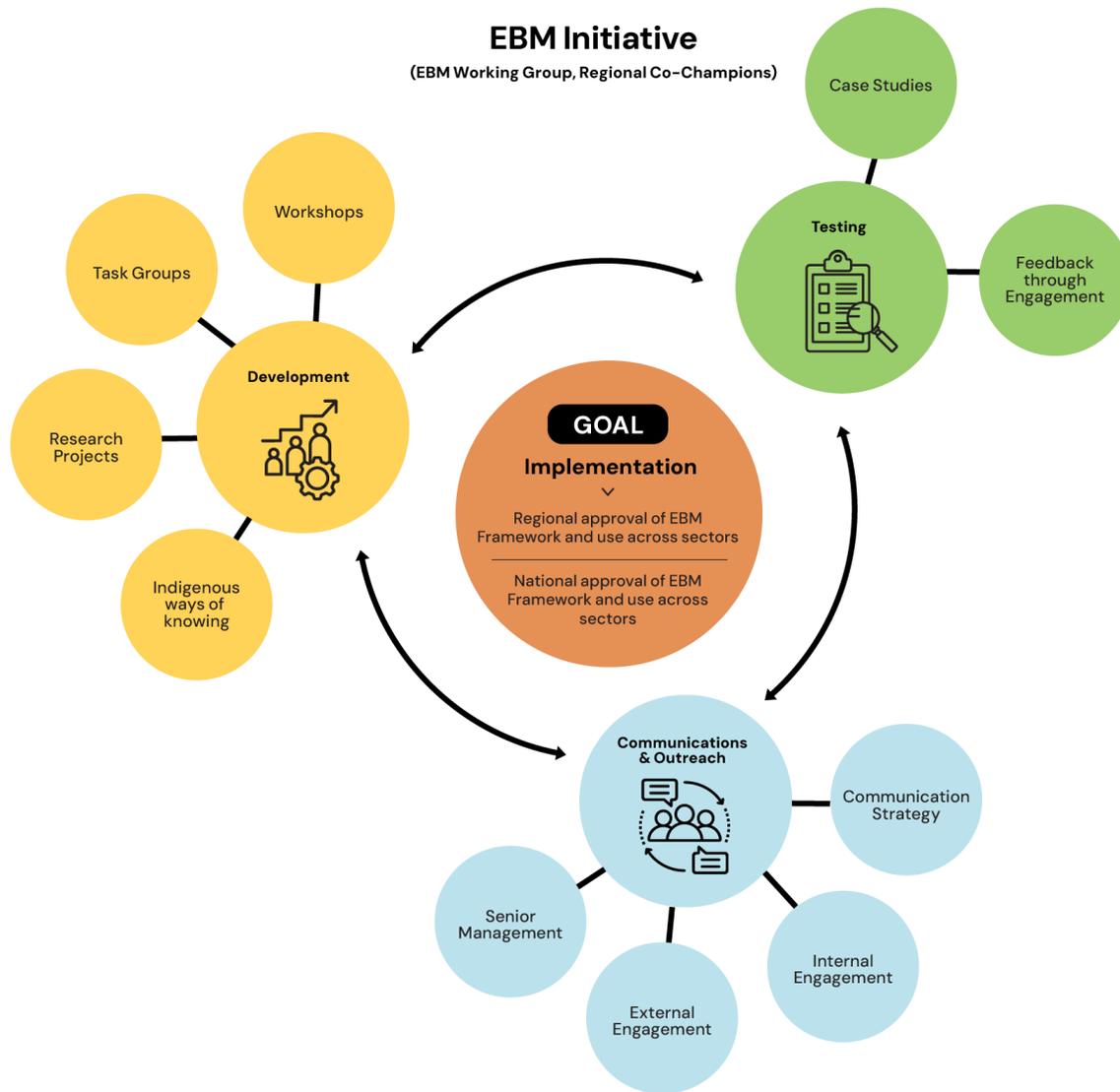


Figure 4. The Maritimes Region EBM Initiative

DFO Workshop I (2019): Developing a consensus Ecosystem-Based Management to assess the cumulative impacts of fishing

Development of the EBM Framework began with the updated framework that resulted from the 2019 DFO workshop (Daly et al., 2020). It was based on the CFRN Sustainability Framework, providing 3-4 candidate Main Objectives for each pillar (Figure 3). These Main Objectives required further discussion, development and elaboration (unpacking) to be more specific and useful for DFO purposes. Following Stephenson et al., (2018), a policy review was conducted to

¹³ <https://www.apcfn.ca/>

inform the unpacking process – see “[Policy Review](#)” below. A key outcome of Workshop I was an identified gap in DFO regional expertise in the social sciences to adequately explore and unpack the Social and Cultural and Governance Pillars of the EBM Framework.

DFO Online Workshop II (2021): Incorporating social, cultural and governance aspects

A second workshop, Workshop II, was held online in January 2021 to begin the co-development of the EBM Framework with a focus on the Social and Cultural and Governance Pillars (Bundy et al., 2021). In contrast to Workshop I, which was internal to DFO, the intent of Workshop II was to bring in additional expertise and perspectives from Indigenous Peoples and academic social scientists. Developing the EBM Framework with the perspectives and voices of Indigenous Peoples is a key element of the process, with this workshop a first step in an on-going collaboration – see “[Indigenous Engagement](#)” below. The workshop began with three plenary talks, one from an Indigenous elder, one from a social scientist and one from a DFO scientist. Participation in the Workshop included approximately 15 social scientists from academia, five Indigenous participants and 30 DFO staff from a range of DFO Sectors. Breakout sessions gave participants an opportunity to discuss elements of the draft Framework in detail, including strengths and gaps.

Following Workshop II, Social and Cultural and Governance Pillar task groups were formed to further unpack and discuss the objectives for these pillars. All participants from the Workshop were invited to participate in these collaborative task groups, which included a range of academics from the social sciences and DFO staff from different sectors. The Ecological and Economic task groups were formed later and were comprised of DFO staff (see [Appendix 2](#) for task group membership). The task groups worked and met throughout the remainder of 2021, then a final workshop, Workshop III, was held in January 2022 to “reunite the 4 pillars”. Each task group developed a narrative, describing the development of the Governance, Ecological, Economic and Social and Cultural Pillars ([Appendices 3-6](#)).

DFO Online Workshop III (2022): Reuniting the four pillars

The main objectives of Workshop III were to review progress on the four pillars of the EBM Framework (Governance, Ecological, Economic and Social-Cultural), to give all task group members an opportunity to discuss and provide input, to ensure consistency across the four pillars, to identify gaps or concerns, and then to reunite the four pillars in one framework ([Appendix 7](#)). The task groups met subsequently to address specific questions that arose during the workshop, then were combined in to one “overarching task group (OTG)” to ensure that the resulting framework was internally consistent.

The process described above resulted in increased understanding of EBM and the scope and content of the four pillars. All pillars benefitted from contributions across sectors and disciplines as participants learned and improved new disciplinary languages and concepts. Some of the discussions were outside the usual scope and comfort zone of DFO staff, e.g., discussions of well-being, but a much greater understanding of disciplines and perspectives was fostered between sectors both within DFO and between DFO staff, Indigenous participants and participants from the social sciences.

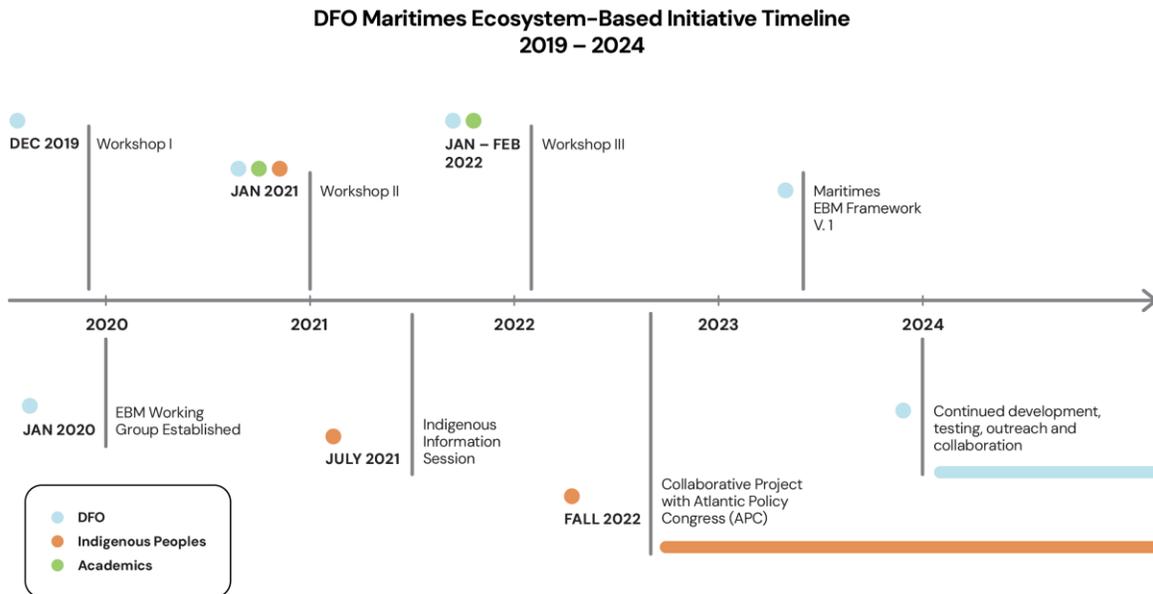


Figure 5. Time line showing the development of the Maritimes Region EBM Initiative. APC = Atlantic Policy Congress of First Nations Chiefs Secretariat

Indigenous Engagement

Initial engagement with Indigenous Peoples began with Workshop II in January 2021 (Figure 6). This was the first external engagement on the EBM Framework, and Elder Dr. Albert Marshall was invited to give a plenary presentation on Etuaptmuk (Two-Eyed Seeing). Also invited were Indigenous Peoples from Mi'kmaw, Peskotomuhkati and Wolastoqey First Nations, academic social scientists and DFO staff. During the Workshop it was noted that EBM implementation is a process. Identified next steps included engaging with interested First Nations communities (Nation to Nation) and organizations more directly to further develop Indigenous perspectives, objectives and/or knowledge within the Framework (Bundy et al., 2021).

Consequently, an Indigenous Information Session was organized in collaboration with DFO Maritimes Indigenous Relations and Partnerships Hub in July 2021. Fourteen representatives from First Nations communities and organizations participated. The Information Session represented the beginning of dedicated engagement with First Nations communities and organizations in relation to specifics of the EBM framework. Next steps identified during the Information Session reiterated the recommendation from Workshop II to undertake further engagement with interested First Nations communities and organizations to further develop Indigenous perspectives, objectives and/or knowledge systems within the Framework.

Following guidance received from this and other meetings, DFO EBM Working Group members sought resources to support the engagement of First Nations in the development of the EBM

Framework. A successful application was submitted to the Indigenous Policy Dialogue and Development Program (IPOD) in 2022, an internal DFO program, for a project to follow up on the guidance and recommendations provided in previous workshops as well as the Indigenous Information Session.

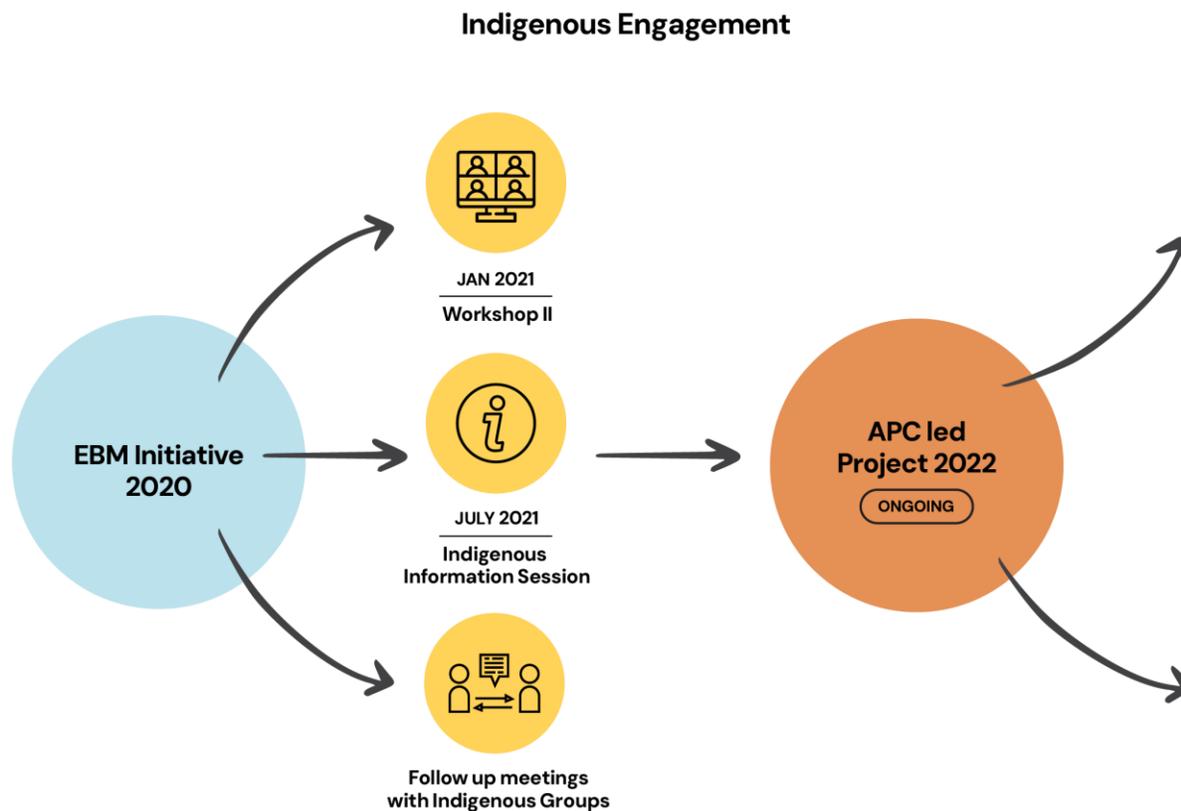


Figure 6. Engagement with First Nations on EBM by the Maritimes Region EBM Initiative. APC = Atlantic Policy Congress of First Nations Chiefs Secretariat

This led to the development of a project with the Atlantic Policy Congress of First Nations Chiefs Secretariat¹⁴ (APC) titled: Indigenous concepts, values, objectives and knowledge and the Maritimes Ecosystem-Based Management (EBM) Framework: an opportunity for Etuaptmumk? The APC led project began in late 2022 and a workshop was held in March 2023 to share information on the EBM Framework and gather input from Indigenous Communities. The objective of this initial workshop was to gather input from Indigenous Peoples to understand concepts, values, objectives, and perspectives in the spirit of Etuaptmumk (Two-Eyed Seeing) and to support holistic decision making in the Maritimes region.

A second APC led workshop was held in November 2024, to share progress and information on APC led research completed to date, the EBM Framework, and discuss to the continued development of the EBM Framework. One substantive outcome from this workshop and the APC research conducted by Dr Shelley Denny, were suggested edits to the Governance Pillar, most of

¹⁴ <https://www.apcnc.ca/>

which have since been made ([Table 1](#)). Reports from both workshops are available on the APC website¹⁵.

The collaboration with APC is on-going and further funding is being sought. This work will be the basis for next steps to continue to strengthen and adapt the Framework to better represent Indigenous ways of knowing and being. Meanwhile, development of the EBM Framework has progressed and Indigenous concepts and ways of being have been considered and reflected where possible. Throughout the framework, the objectives are intended to be relevant for both Indigenous Peoples and non-Indigenous peoples, unless otherwise specified.

Policy Review

To be relevant to DFO and credible across DFO Sectors, the EBM Framework had to be clearly based on Canadian legislation and policy. Therefore a structured review of DFO Policy, Canadian Government policy and international agreements to which Canada is a signatory was conducted to evaluate the extent of policy support for EBM and to align objectives across the Ecological, Economic, Social and Cultural and Governance/ Institutional objectives with current policy (Eger et al, *in prep*). Ninety documents were evaluated, and the results of this review (a) indicate that legislation and policy relevant to DFO provide the necessary legislative basis to support the EBM Framework (Figure 7) and (b) informed the unpacking of objectives under each pillar.

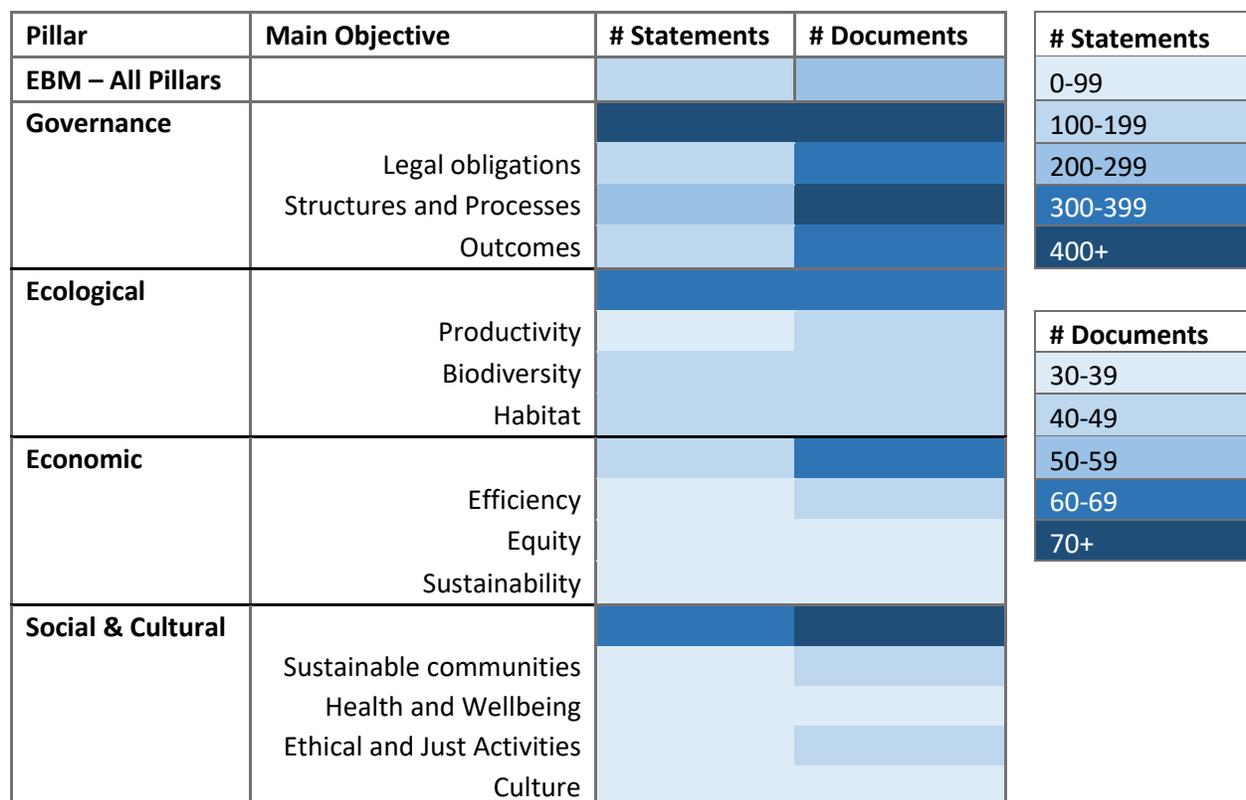


Figure 7. Heat map showing the degree of support in policy documents and statements for each EBM Pillar and related Main Objectives, adapted from Eger et al., *in prep*

¹⁵ All reports will be available on the APC website: <https://www.apcnc.ca/>

“Unpacking the Objectives”

The EBM Framework was designed using a hierarchical approach, beginning with the four pillars, Governance, Ecological, Economic, and Social and Cultural. Each pillar was serially unpacked into Main Objectives and then several levels of sub-objectives, with increasing detail and specificity. Ultimately, the unpacking process resulted in objectives that are measurable using indicators (to be developed - see “[Indicators](#)” below). As a result, each pillar has three to four Main Objectives that describe their broad scope. Each Main Objective then has 1 or more sub-objectives (e.g., Level 1 Objectives, Level 2 Objectives, etc.), which increase in specificity with each level of unpacking. There can be several levels of sub-objectives (Figure 8).

The highest-level objectives represent ‘ends objectives’, that is, objectives that represent the goal or value being sought, e.g., “Species biodiversity is conserved and protected”. Objectives lower in the hierarchy are more specific and may be ‘means objectives’, that is, an objective that indicates how the higher level objective will be achieved (Marentette et al., 2022), e.g., “By-catch in fishing gear is minimized”. The hierarchy will end with indicators that provide a measure of how well the specific objective is met. Collectively, across the tiered hierarchy of the objectives, these indicators will provide a measure of how well the ends objectives are met. Indicators may be quantitative or qualitative, and may be different for different contexts.

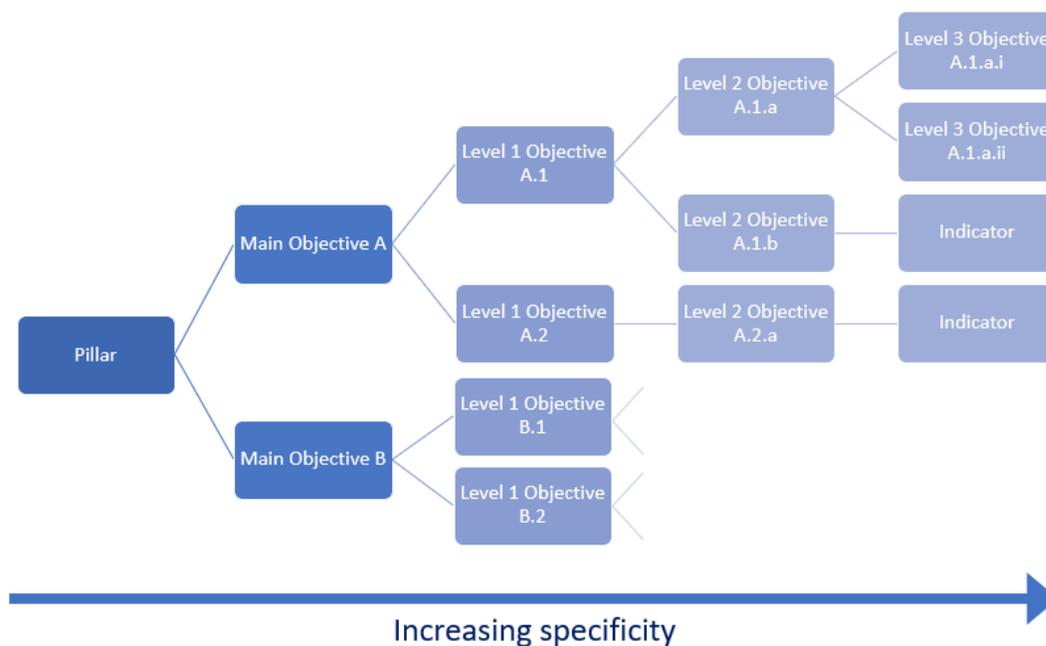


Figure 8. Structure of each pillar of the EBM Framework

The objectives were constructed using action verbs to indicate desired end states, as reflected in policy and literature (e.g., “Economic opportunities and benefits for Indigenous Communities are promoted”). In most cases verbs used within objective statements assume that DFO has jurisdiction or authority over that particular objective. However, in a few cases, DFO may not be the main authority and objectives may seem to fall out with DFO’s immediate jurisdiction. These

objectives are more aspirational and forward looking, recognizing that sustainable, integrated management requires greater collaboration and cooperation across relevant governing authorities (Vince and Day, 2020) and that a broader suite of objectives is required for holistic decision making. These will be highlighted in the discussion.

The unpacking process was informed by relevant Canadian Government policy and legislation (i.e., Policy Review, Eger et al., *in prep*), DFO Sector expertise, social science and humanities expertise and the broader international literature. The unpacking process was iterative and achieved through consensus, and throughout the process the results were presented to the larger EBM Working Group for insight and comment. A narrative was developed for each pillar to describe the links between the objectives and the policies or concepts on which they were based (see Appendices 4-7).

Several guiding principles informed the unpacking of the four pillars into objectives and sub-objectives. First and foremost, the development of objectives was linked directly to policy statements described in the policy review (Eger et al., *in prep*). This ensured that the objectives would be appropriate and relevant to DFO across its sectors. Where possible, language was taken from or framed by policy or current international literature, and language use was concise and made consistent across the 4 pillars. Positive language was used where possible, with action verbs and goals (ends objectives). As noted above, the 4 pillars were developed by different task groups resulting in some concepts appearing in more than one pillar. Redundancies were reduced by selecting one part of the EBM Framework to include the objective and using cross-references to indicate relationships between sub-objectives, within and across pillars and Main Objectives. However, some duplicates were left, noting for example, that equity in an economic context may be different from equity in a social context.

Indicators

Specific indicators have not yet been identified for the EBM Framework since these will be context dependent and explored through case studies and framework use (see [EBM Framework Use](#)). As noted above, the EBM Framework is not intended as a “one-size-fits-all”: different issues may require different components of the four pillars of Framework, and there may be different units of measurement to track impacts across objectives for different activities.

The EBM Framework v1.0

The general development of the four pillars of the EBM Framework is described below. Each of the four pillars is also supported by a detailed narrative that links the objectives to policy and provides the rationale for their development (Appendices 4-7). In addition, a glossary of terms¹⁶ was developed to clarify and provide references for the terms used.

The four pillars are intended to be used together, representing the different dimensions of sustainability and decision making. The Governance Pillar sets the stage for EBM and is both the overall context for implementing EBM as well as one of the pillars within the EBM Framework. Further, the Governance Pillar is overarching and therefore also influences the other three

¹⁶ [EBM Initiative - Resources](#)

pillars, for example, through governance principles such as accountability, equity and transparency (Lockwood et al., 2010; Long et al., 2015; Eger et al., 2021a).

The four pillars were unpacked to be sufficiently general for application to the wide range of issues and decisions under DFO's mandate, with greater specificity to be developed through case studies. The following section provides a brief summary of the scope of each pillar followed by a list of main and sub-objectives.

Governance and the Governance Pillar

Overall, governance refers to the set of structures (formal and informal) and processes through which human actors make decisions that influence actions and outcomes (Armitage et al., 2009; Lockwood et al., 2010; Eger et al., 2021a). It is a pillar, because there are specific governance (and institutional) objectives that need to be considered as part of decision making, alongside the objectives of the other pillars. As a pillar, Governance establishes the ground rules for the Framework: it identifies legal frameworks for decision making, outlines objectives for good governance process and provides objectives to assess whether this has indeed taken place. Within the scope of the Framework, governance is considered to be the shared, collective effort of government, Indigenous governments and organizations, private business, and others (e.g., civic organizations, communities, political parties, universities, the media and general public) to reach end goals. There are diverse types of governance arrangements (e.g., from ministerial discretion or Indigenous governance through collaborative arrangements to delegated responsibilities).

As one of the four pillars of the framework, some aspects of governance are clearly stated as specific objectives, or as political imperatives, that need to be included explicitly in management planning. When objectives were framed, the term "ensure" was used only when the objective was considered to be achievable within the mandate of DFO. However, some aspects of the framework may not be within the scope of DFO to implement. Further, it is important to recognize the various scales of actions and decisions of staff and practitioners compared to the ultimate decisions made by a political process (i.e., the Minister).

The Governance Pillar (Figure 9, [Table 1](#)) was co-developed by the Governance task group that included social scientists with governance expertise from several Canadian Universities, and DFO staff from across Aquatic Ecosystems, Fisheries Management and Science (See [Appendix 2](#) and [3](#)). It also includes recommendations from the project with the Atlantic Policy Congress of First Nations Chiefs Secretariat (APC) titled: Indigenous concepts, values, objectives and knowledge and the Maritimes Ecosystem-Based Management (EBM) Framework: an opportunity for Etuaptmunk? These recommendations were based on research conducted by Dr Shelley Denny, which were then further discussed at the second APC led EBM workshop¹⁷.

Throughout the development process, the Maritimes EBM Working Group (Appendix 1) was consulted and engaged to ensure that the Governance Pillar would be relevant to all DFO Sectors. (Appendix 2, 4). The Main Objectives from the 2020 version of the Governance Pillar in draft EBM Framework (Bundy et al., 2021) were used as the starting point for discussion and

¹⁷ All reports will be available on the APC website: <https://www.apcfn.ca/>

included: Legal Obligations, including to Indigenous Peoples; Good governance structure; and Effective decision-making process. The Governance task group further articulated and unpacked these Main Objectives, recognizing that there is fluidity and overlap among them, resulting in the following three Main Objectives. Further details are in the Governance narrative ([Appendix 3](#)):

- A. Legal Obligations and Other Commitments
- B. Governance Structure and Processes
- C. Governance Outcomes.

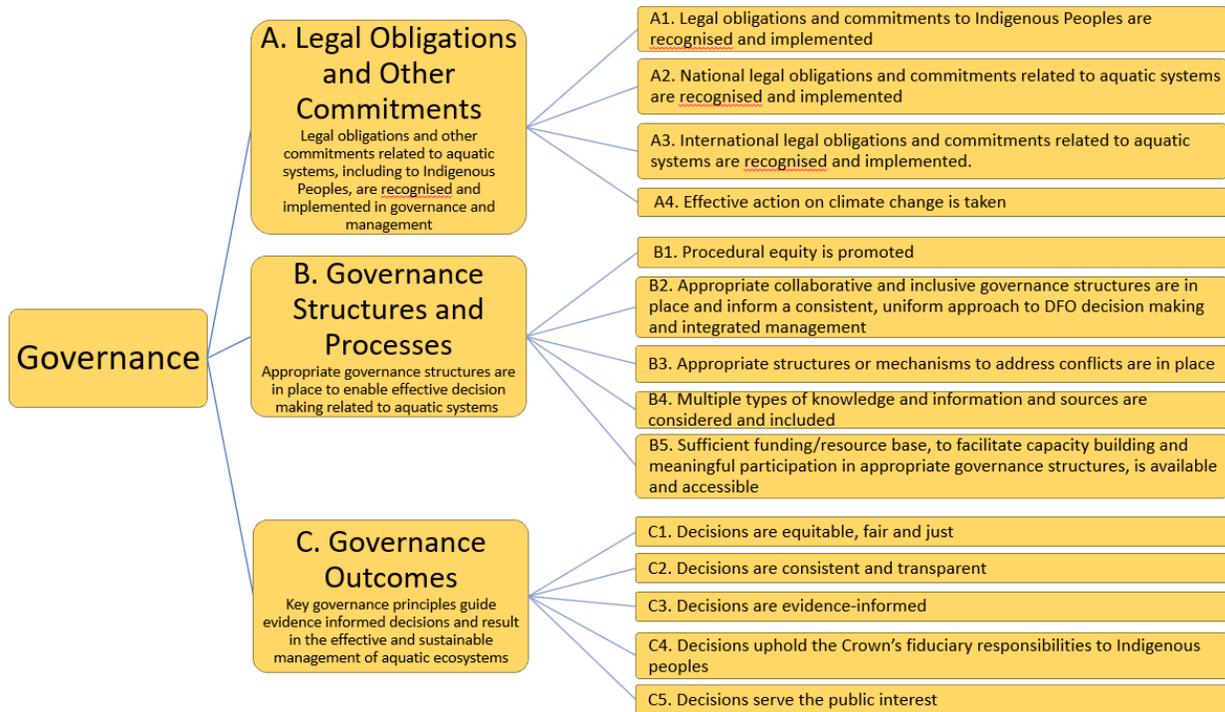


Figure 9. EBM Governance Pillar – higher levels of the hierarchy

A. Legal Obligations and other Commitments

Legal obligations and other commitments related to aquatic systems, including to Indigenous Peoples, are recognized and implemented in governance and management.

Legal obligations and commitments represent formal governance mechanisms that are underpinned by values, norms, and principles, and influence how humans interact with the environment as well as each other (Lemos and Agrawal, 2006; Jentoft and Chuenpagdee, 2009; Kooiman and Jentoft, 2009). A spectrum of obligations and commitments are recognized in this Main Objective in the form of Treaty Rights, laws, policies, case law and non-binding agreements. Four Level 1 Objectives were developed and are listed below, together with a brief rationale:

1. Legal obligations and commitments to Indigenous Peoples are recognised and implemented

A notable legal responsibility of all Government of Canada departments/sectors is with Indigenous Peoples. In particular, the Government of Canada is committed to Reconciliation with Indigenous Peoples and has reaffirmed it as a priority in several legal and other forms

including section 35 of the *Constitution Act* of 1982 (Government of Canada, 1982), the *United Nations Declaration on the Rights of Indigenous Peoples Act* (UNDA, Government of Canada, 2021), and the DFO Coast Guard Reconciliation Strategy (Fisheries and Oceans Canada, 2019b).

2. National legal obligations and commitments related to aquatic systems are recognized and implemented.

These objectives are focused on existing national scale legislation, regulations and common law and include the precautionary approach and sustainable development principles. For instance, the main Acts influencing DFO are the *Fisheries Act* (Government of Canada, 1985a), the *Oceans Act* (Government of Canada, 1996), the *Species at Risk Act* (Government of Canada, 2002), and the *Canada Shipping Act* (Government of Canada, 2001).

3. International legal obligations and commitments related to aquatic systems are recognized and implemented.

These objectives include international agreements and commitments to which Canada is a signatory and that must be incorporated into domestic legislation before they have direct legal effect in Canada. Important examples include UNDRIP (2007), the Convention on Biological Diversity (CBD, United Nations 1992), the Kunming-Montreal Global Biodiversity Framework (United Nations, 2022), the Charlevoix Blueprint for Healthy Oceans, Seas and Resilient Coastal Communities (G7 Charlevoix Blueprint, 2018) and the Food and Agriculture Association of the United Nations Code of Conduct for Responsible Fisheries (FAO, 1995).

4. Effective action on climate change is taken

Climate change is a current priority of the Department and intersects across many of the objectives in the Framework. A driving policy for climate change objectives includes the recent National Adaptation Strategy (Environment and Climate Change Canada, 2023) that provides a vision and roadmap to help communities prepare for and adapt to the impacts of climate change in five systems: Disaster Resilience; Health and Well-being; Nature and Biodiversity; Infrastructure; and Economy and Workers.

B. Governance Structures and Processes

Appropriate governance structures are in place to enable effective decision making related to aquatic systems

How the obligations and commitments identified above are carried out is conceptualized by this Main Objective, which stipulates that Governance structures (e.g., policy instruments, organizational bodies and norms) shape the ways people interact with one another. Governance also influences the ways people interact with the environment, also known as governance processes (Cortner et al., 1998; Angel et al., 2019). Governance (structure, processes and thus function) is based on principles of good governance, and modern principles of resource management, including accountability, transparency, legitimacy, strategic vision, inclusiveness, adaptation and performance evaluation. Many of these key principles are prevalent in DFO policies.

Traditionally, DFO and other governing bodies have focused on siloed approaches to governance and management with different authorities responsible for different activities. There is now an

increasing trend towards collaborative, shared, and de-centralized governance structures (Stephenson et al., 2019; Eger et al., 2021a). The Framework objectives within this pillar can be used for any type of situation or governance arrangement including, but not limited to, collaborative, hierarchical, adaptive, transformational, interactive, or polycentric forms of governance. Other situations may involve Indigenous self-management, or will be managed by the government (e.g., ministerial authority of DFO). Five Level 1 Objectives were developed and are listed below, together with a brief rationale:

1. Procedural equity is promoted

The EBM Framework adopts the term procedural equity as an important feature that helps ensure that the quality of decision-making structures and processes are fair and reasonable, and that rights holders and stakeholders are included in a meaningful and appropriate way (Morf et al., 2019; Bennett, 2019; Eger et al., 2021a,b).

2. Appropriate collaborative and inclusive governance structures are in place and inform a consistent approach to DFO decision making and integrated management

DFO functions primarily within a multi-level, hierarchical governance system, with aspects of polycentrism, therefore there is a need to be inclusive of a diversity of structures across various scales and parties, including: Nation-to-nation, government-to-government relationships with Indigenous Peoples (Fisheries and Oceans Canada, 2019b), internal, inter-regional, interdepartmental, intergovernmental and external (Fisheries and Oceans Canada, 2002b).

3. Appropriate structures or mechanisms to address conflicts are in place

Conflict resolution is a formal or informal feature of current management where two or more parties seek a peaceful solution to their dispute (Shonk, 2021). There is an absence of structure and processes to deal with conflict and tradeoffs among objectives and activities. This is a growing and emerging area of concern that's being increasingly recognized (Parlee and Wiber, 2018). It is important that processes are available and accessible, that conflicts are addressed in a timely manner and that the mechanisms used are culturally relevant.

4. Multiple types of knowledge and information and sources are considered and included

Increasingly, DFO is recognizing that the best available knowledge related to social and natural sciences needs to come from diverse sources including, but not limited to, Indigenous knowledges, fishers' knowledge, and other ways of knowing. For example, in 2019, the Government of Canada passed legislation (Government of Canada, 2019a) that now requires Indigenous knowledge to be considered in project reviews and regulatory decisions relating to the Impact Assessment Act (Government of Canada, 2019b), the Canadian Energy Regulator Act (Government of Canada, 2019c), the *Fisheries Act* (Government of Canada, 1985a) and the *Canadian Navigable Waters Act* (Government of Canada, 1985b).

5. Sufficient funding/resource base to facilitate capacity building and meaningful participation in appropriate governance structures is available and accessible.

Ensuring sufficient resources are available to support the effective participation of rights holders and stakeholders in governance structures and processes is an ongoing challenge.

Capacity of those who are participating as well as those responsible for carrying out the governance structure and processes is needed (Stephenson et al., 2023; Eger et al., 2024).

C. Governance Outcomes

Key governance principles guide evidence informed decisions and result in the effective and sustainable management of aquatic ecosystems

Canada strives to improve the effectiveness of decision structures, processes, and outcomes. Therefore, objectives for Governance Outcomes were developed to assess the effectiveness of the decisions that result from the various Governance Structures and Processes. In particular, the Government of Canada recognizes the “Principles and Guidelines for the Effective Use of Science and Technology Advice in Government Decision Making”, commonly referred to as the SAGE (Science Advice for Government Effectiveness) principles, which include inclusiveness, transparency, and openness (Government of Canada, 2000). DFO manages fisheries and other activities using credible, science-based, affordable and effective practices and aspires to evidence-informed (or evidence-based) generation of decision making and scientific advice. Decisions should be credible, relevant (salient), legitimate, based on the best available information, and transparent (e.g., Soomai, 2017; Fisheries and Oceans Canada, 2020a). Additionally, outcomes should reflect key governance principles (e.g., equity, accountability, democratic, collaborative). Another desirable outcome of decision making would be to improve the social license, i.e., to gain people's respect for the decision and decision-making system (Margeson et al., 2023).

An important aspect of decision making and its outcomes is the rationale for making the decision and the availability of this rationale. This Main Objective was unpacked into the key elements of the outcomes of decision making through the five Level 1 Objectives listed below, together with a brief rationale.

1. Decisions are equitable, fair, and just;

The outcomes of decisions should be free from bias and should reflect the values and interests of all parties involved in the decision-making structures and processes (Lockwood et al., 2010; Crosman et al., 2022). Included in this is the notion that decisions should consider the long-term implications and intergenerational equity (Government of Canada, 2008).

2. Decisions are consistent and transparent;

Consistency and transparency are among governance principles that are critical to decision making. For example, SAGE principles include transparency (Principle V) and should be adopted/applied in a consistent way (Government of Canada, 2000).

3. Decisions are evidence-informed;

Evidence-informed, or evidence-based, decision making is “the process of distilling and disseminating the best available evidence [including knowledge and information] from research, context and experience and using that evidence to inform and improve public health policy and practice”¹⁸. This important decision-making principle is often referred to in ministerial guidelines and mandate letters. It is captured here in one Level 2 Objective and

¹⁸ National Collaborating Centre for Methods and Tools, Canada - <https://www.nccmt.ca/tools/eiph> -

strongly linked to Level 1 Objective B.4 above (Multiple types of knowledge and information and sources are considered and included).

4. Decisions uphold the Crown’s fiduciary responsibilities to Indigenous peoples

Broadly speaking, a “fiduciary relationship” is one in which someone in a position of trust has “rights and powers which he is bound to exercise for the benefit” of another (Hurley, 2002, p. 2). Canadian law recognizes that the Crown has fiduciary responsibilities and obligations to Indigenous Peoples, originating in decisions by the Supreme Court of Canada in key cases beginning with *R. v. Guerin* (1984) and expanded by *R. v. Sparrow* (1990) among others (Morellato, Blake, Cassels & Graydon, 1999; Hurley 2002; Showalter 2025). This is reflected in Principles 3 and 7 of Canada’s “Principles respecting the Government of Canada’s relationship with Indigenous peoples¹⁹”, which speak to the importance of upholding Canada’s Crown’s fiduciary responsibilities to Indigenous peoples. Further, Canada’s UNDA Action Plan (Government of Canada, 2023a) states that “Indigenous peoples can expect and trust that the Government of Canada will honourably fulfill all of its legislated (including under the UN Declaration Act), common law, fiduciary and constitutional obligations and responsibilities” (p. 29). Therefore, governance outcomes should uphold the Crown’s fiduciary obligations and responsibilities to Indigenous peoples.

5. Decisions serve the public interest.

An implicit and overarching duty is to serve the public interest through Canada’s democratic decision making (e.g., Values and Ethics Code²⁰, Open and Accountable Government²¹, Cabinet Directive on Regulation (Treasury Board of Canada Secretariat, 2024). Public Interest is defined as “the welfare or well-being of the general public” (Collins Dictionary²²), i.e., decisions are made on behalf of everyone who is a member of the general public, including future generations, beyond stakeholders and rights holders who may be a part of governance processes. This responsibility spans current and future generations and therefore the single Level 2 Objective relates to intergenerational equity (Spijkers, 2018; Policy Horizons Canada, 2025).

Ecological Pillar

The ecological aspects of ecosystem-based management have received considerable attention since the concept emerged in the 1980s (Grumbine, 1994) and there is international agreement that the scope of ecological considerations includes productivity, biodiversity and habitat (e.g., Jamieson and O’Boyle, 2001; Sinclair and Valdimarsson, 2003). The original Maritimes Region EAM framework focused mainly on these ecological considerations (productivity, biodiversity and habitat), largely from a fisheries perspective, and the CFRN Framework subsequently elaborated them, Figure 3. The three ecological objectives, productivity, biodiversity and habitat, have a firm basis in the *Fisheries Act* (1985a) and were used as the basis for the further development of the Ecological Pillar of the EBM Framework (Figure 10).

¹⁹ <https://www.justice.gc.ca/eng/csj-sjc/principles-principes.html>

²⁰ <https://intranet.ent.dfo-mpo.ca/mpo/en/node/3175> (Retrieved 2022)

²¹ [Open and Accountable Government](#)

²² <https://www.collinsdictionary.com/dictionary/english/public-interest> Accessed 13-08-2025

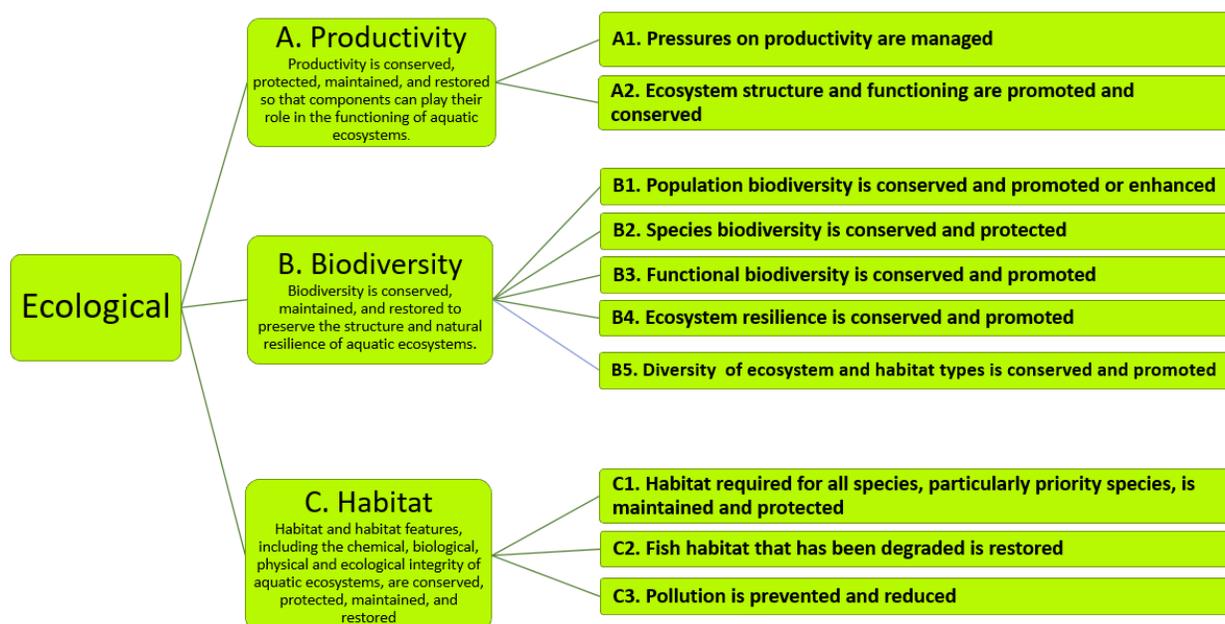


Figure 10. EBM Ecological Pillar – higher levels of the hierarchy

Since the original EAM Framework was developed in the early 2000s, several legislative developments have further promoted and substantiated the need for an ecosystem approach/ ecosystem based management. The *Fisheries Act*²³ (1985a, amended 2019) and DFO's Sustainable Fisheries Framework²⁴ (SFF, Fisheries and Oceans Canada, 2019a) establish a precautionary approach to fisheries management and the basis for an ecosystem approach to fisheries management. The SFF includes conservation and sustainable use policies, including a fishery decision-making framework incorporating the precautionary approach²⁵ and four policies: (i) Fishery Monitoring Policy²⁶, (ii) Policy on Managing Bycatch²⁷, (iii) Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas²⁸ and (iv) Policy on New Fisheries for Forage Species²⁹. The *Species at Risk Act* and *Oceans Act* also provide solid support for the Ecological Pillar of the EBM Framework.

The Ecological Pillar ([Table 2](#)) was developed by a task group that included DFO staff from Aquatic Ecosystems, Fisheries Management and Science ([Appendix 2](#)), and reflects these legislative developments and the expanding mandate of DFO. Therefore, some objectives were reframed and added to be more ecosystem focused and the habitat objectives were expanded, reflecting the renewed emphasis on the conservation and protection of fish habitat in the new

²³ [A modernized Fisheries Act for Canada](#)

²⁴ [Sustainable fisheries framework](#)

²⁵ [A fishery decision-making framework incorporating the precautionary approach](#)

²⁶ [Fishery Monitoring Policy](#)

²⁷ [Policy on Managing Bycatch](#)

²⁸ [Policy for managing the impacts of fishing on sensitive benthic areas](#)

²⁹ [Policy on New Fisheries for Forage Species](#)

Fisheries Act, amended in 2019. For further details, see the Ecological Pillar narrative ([Appendix 4](#)). The Ecological Pillar has the following three Main Objectives:

- A. Productivity
- B. Biodiversity
- C. Habitat

A. Productivity

Productivity is conserved, protected, maintained, and restored so that components can play their role in the functioning of aquatic ecosystems

In accordance with an ecosystem approach (*Oceans Act*, Preamble 1), the concept of productivity was expanded to “ecosystem productivity” and to include several levels of productivity: productivity of the ecosystem (overall system productivity), functional groups (including trophic levels, and primary productivity), species productivity (especially fisheries target resources), and individual productivity within populations (issues of growth, longevity, etc.).

The original EAM Framework had 4 objectives related to productivity (Curran et al., 2012, Daly et al., 2020), three of which were mostly focused on fisheries productivity). This was reorganized into two Level 1 Objectives ([Table 2](#)), which were then expanded to reflect a broader suite of objectives for productivity:

1. Pressures on ecosystem productivity are managed

Managing pressures on productivity is consistent with the original EAM Framework. Here, this objective was unpacked to differentiate between the direct pressure on productivity from fishing and pressure from other activities.

2. Ecosystem structure and functioning are promoted and conserved

In this objective, the focus is on ensuring productivity through the conservation of ecosystem structure and functioning. It was unpacked further to focus on ecosystem structure and ecosystem functioning.

B. Biodiversity

Biodiversity is conserved, maintained, and restored to preserve the structure and natural resilience of aquatic ecosystems

The significance of biodiversity for ecological health is clearly recognized in the *Oceans Act*, which states that “conservation, based on an ecosystem approach, is of fundamental importance to maintaining biological diversity and productivity in the marine environment” (*Oceans Act*, Preamble (1)). Biodiversity encompasses community diversity, population diversity (e.g. spawning components), and individual (or genetic) diversity and includes consideration of fisheries bycatch, and species at risk. There were five biodiversity objectives in the original EAM Framework (Curran et al., 2012; Daly et al., 2020). The following five Level 1 Objectives were developed to capture this scope ([Table 2](#), [Appendix 4](#)):

1. Population biodiversity is conserved and promoted or enhanced

The intent of this Level 1 Objective, is to conserve genetic population diversity. It consists of one Level 2 Objective “Population structure is preserved” which was unpacked further to capture objectives concerning population mortality, genetic structure, genetic effects of stock enhancement and aquaculture escapees.

2. Species biodiversity is conserved and protected

The aim of this objective is to protect species biodiversity through the control of incidental mortality, aquatic invasive species and disease/pathogens. It also specifies that rebuilding plans for depleted species are developed, where “depleted species” refers to any species that is currently listed under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC³⁰) or the *Species at Risk Act*, and can include additional species recognized by DFO Science as depleted– e.g., ocean pout.

3. Functional biodiversity is conserved and promoted

Functional biodiversity, measured by diversity of functional groups in the ecosystem such as piscivorous fish, forage fish, large invertebrates, benthivorous fish, and copepods is an important aspect of biodiversity. Note that this objective is related to the Productivity Level 2 Objective A.2. “Ecosystem structure is promoted and conserved”.

4. Ecosystem resilience is conserved and promoted

The ability of an ecosystem to withstand disturbances and continue to maintain critical functions, that is, its resilience, is key to promoting biodiversity. Factors that promote ecosystem resilience include species biodiversity, functional diversity and redundancy, genetic diversity, connectivity and spatial heterogeneity. Some of these features have already been captured in the other Biodiversity objectives, or in the Habitat objectives (see below), so this objective is focused on maintaining long-lived species, genetic diversity, climate refugia and natural areas. Natural areas may be inherently more resilient, therefore placing priority on protecting and conserving areas that are relatively more intact or natural will contribute to resiliency.

5. Diversity of ecosystem and habitat types is conserved and promoted

Ecosystem and habitat diversity is another important aspect of biodiversity. However, to avoid redundancy with the Habitat objectives (see below), these objectives are captured under the Habitat main Objective, Sections C.1 and C.2.

C. Habitat

Habitat and habitat features, including the chemical, biological, physical, and ecological integrity of aquatic ecosystems, are conserved, protected, maintained, and restored

The importance of habitat is underscored in DFO’s legislation, including Sections 43 and 35 of the *Fisheries Act*, section 35 of the *Oceans Act*, sections 58 and 60 of the *Species at Risk Act*, and the Integrated Aboriginal Policy Framework (Fisheries and Oceans Canada, 2007b). The Habitat Main Objective is broad and includes the quality of habitat and the environment, protection from pollution (including noise and light), care of unique and sensitive areas, and protection of special or critical habitats. Critical habitat is defined in the *Species at Risk Act* as “the habitat that is

³⁰ <https://cosewic.ca/index.php/en/>

necessary for the survival or recovery of a listed wildlife species and that is identified as the species' critical habitat in the recovery strategy or in an action plan for the species". The *Fisheries Act* provides clear direction on the importance of protecting habitat, including in the purpose of the Act: "b) the conservation and protection of fish and fish habitat, including by preventing pollution", as does section 35 (1) of the *Oceans Act*. The Policy for Managing Impacts of Fishing on Significant Benthic Areas (Fisheries and Oceans Canada, 2009) clearly states the need for an ecosystem approach to the protection of habitat: "An ecosystem approach, which considers all of the components of an ecosystem, including benthic populations, communities and habitat, and their linkages, is fundamental to the conservation and sustainable use of Canada's fisheries", Guiding Principle #1.

The original EAM Framework included 5 objectives for habitat, which were re-framed as three broad Level 1 Objectives ([Table 2](#), Figure 10).

1. Habitat required for all species, particularly priority species, is maintained and protected

The first Level 1 Objective is deliberately broad to capture important aspects of habitat protection and represents the breadth of DFO's mandate with respect to habitat. These objectives are derived from the *Fisheries Act*, the *Oceans Act*, the *Species at Risk Act* and from MPA network design process. They reflect the importance of protecting early life-history stage habitat, rare, unique and vulnerable habitats, biogenic habitats, riparian zones and representative areas. Connectivity between areas and life history stages is explicitly recognized, as is preventing the introduction of Aquatic Invasive Species (AIS), which can cause radical alteration to habitats.

2. Fish habitat that has been degraded is restored

In addition to protecting habitat, the *Fisheries Act* placed a renewed emphasis on fish habitat and the restoration of degraded fish habitat. Therefore this second Level 1 Objective was developed to specifically addresses this, with a focus on key areas where restoration would contribute to increasing the productivity of populations and to the recovery and conservation of species listed under the *Species at Risk Act*.

3. Pollution is prevented and reduced

There is clear direction to prevent pollution in the purpose of the *Fisheries Act*, but pollution is more fully regulated under the Department of Environment and Climate Change Canada (ECCC), Transport Canada (TC) and the Impact Assessment Agency of Canada (IAA). ECCC regulates pollution through the *Canadian Environmental Protection Act* (CEPA, Government of Canada, 1999), the purpose of which is to "contribute to sustainable development through pollution prevention". Five level 2 objectives were developed for pollution.

Economic Pillar

Economic considerations have long been important factors in decision making within DFO. This is evident in a number of DFO related acts, policies, plans and associated guidance documents, where 'economic' or 'socio-economic' considerations are specifically mentioned as important factors in managing activities and resources within the nation's aquatic systems. The *Fisheries Act*, for example, states that the Minister may consider social, economic and cultural factors in the management of fisheries; the *Oceans Act* notes that the Minister may consider

environmental, economic, social or cultural information when designating a Marine Protected Area; and the *Species at Risk Act* specifically refers to the need to evaluate socio-economic costs and benefits when developing Action plans. From a wider federal government perspective, the Treasury Board has for decades required federal departments to analyze the socio-economic costs and benefits of all proposed federal regulations, including regulations related to the country’s aquatic systems. The Treasury Board notably defines the term ‘economic’ as referring to the benefits and costs that will affect economic welfare and economic growth and the term ‘social’ when referring to the potential distributional impacts of the regulations being evaluated. The EBM Economic Pillar is a reflection and acknowledgment of the role that economic considerations play in managing Canada’s aquatic resources.

The development of the Economic Pillar was undertaken by a team of DFO economists (Maritimes Region, [Appendix 2](#)) with input and guidance provided by the larger EBM working group and task groups. The Economic Pillar is built upon much of the socio-economic work done in the department over the past 20 or more years. A review of relevant acts, policies, plans and associated guidance documents was undertaken to identify the economic related priorities of the department. An examination of the results of this review identified three broad overarching economic themes that formed the three Main Objectives of the Economic Pillar ([Table 3](#), Figure 11). The review also identified a variety of potential users of the Region’s aquatic resources, including Canadians, Canadian communities (including Indigenous, regional, provincial, and local communities) and Industries (large, medium and small) and uses, including fishing (Indigenous rights fisheries, recreational fishing, commercial fishing, other fishing), aquaculture and tourism, among others (see Economic Narrative ([Appendix 5](#)) for further details).

- A. Economic Efficiency
- B. Economic Sustainability
- C. Economic Equity

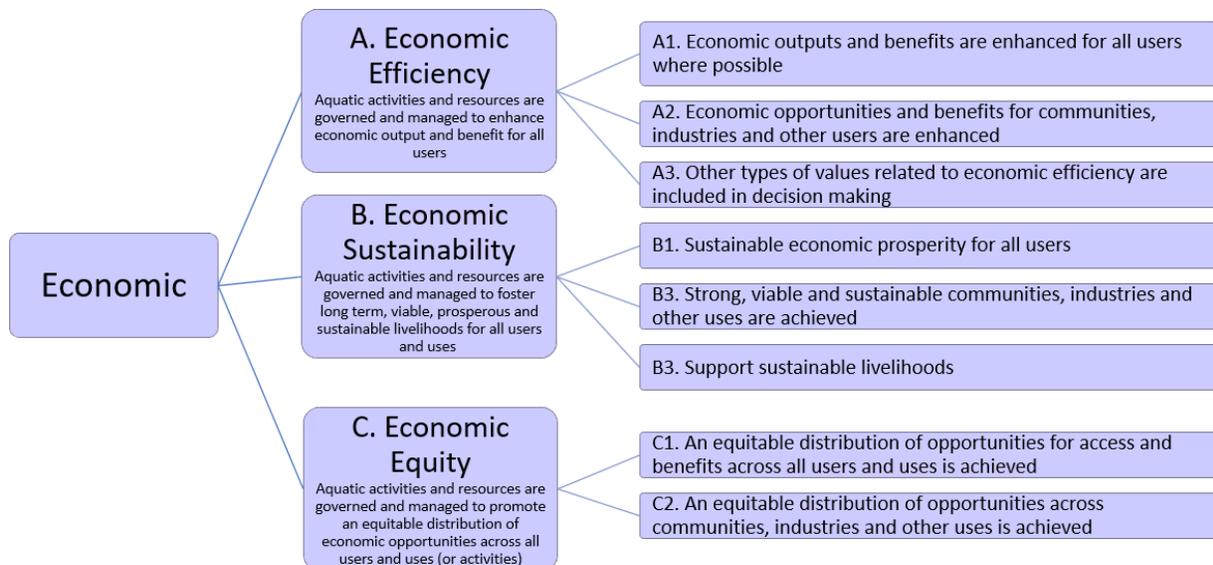


Figure 11. EBM Economic Pillar – higher levels of the hierarchy

A. Economic Efficiency

Main Objective: Aquatic activities and resources are governed and managed to enhance economic outputs and benefits for all Canadians

One of the primary considerations for the Government of Canada in decision making is determining which course of action results in the greatest overall benefit to Canadians. This is reflected in section 3.0 of the Treasury Board’s Cabinet Directive on Regulation (Treasury Board of Canada Secretariat, 2024) which specifically notes, “It is the duty of the Government of Canada to ensure that regulations result in the greatest overall benefits to current and future generations of Canadians.” The economic efficiency Main Objective is aimed at helping to achieve these benefits. Here, economic efficiency is defined as “a state when resources in an economy are used and distributed in a way that produces the most economic output and benefit”. This could also be termed “Prosperity”, as in Stephenson et al. (2018).

Three Level 1 Objectives were developed ([Table 3](#)) and are listed below, together with a brief rationale:

1. Economic opportunities, outputs and benefits are enhanced for all users where possible

This Level 1 Objective is focused on growing economic opportunities for the wide variety of users and user groups across the country. Opportunities include improvements in economic measures such as employment, income, output, and livelihoods. The scale of this objective can range from a single individual or single community to all Canadians.

2. Economic opportunities and benefits for communities, industries and other users are enhanced

This Level 1 Objective is focused on growing economic opportunities associated with the many users of the nation’s aquatic resources. Opportunities include improvements in economic measures such as regional development, industrial development, and market development. The scale of this objective can include communities, industries, and other users.

3. Other types of values related to economic efficiency are included in decision making

Other types of values considered in this objective include Indigenous values, bequest values, existence values, altruistic values and cultural values. These were made explicit to underscore that economic objectives for efficiency and prosperity are broader than simply monetary value and that other types of values play a roll in decision making (Armitage et al., 2012; Song et al., 2013; Hicks et al., 2015).

B. Economic Sustainability

Main Objective: Aquatic activities and resources are governed and managed to foster long term, viable, prosperous and sustainable economic opportunities and benefits for all users and uses

The long term health of the aquatic economy is dependent on it operating in a sustainable manner. Here, economic sustainability is defined as a state when resources in an economy are used and distributed in a way that supports long term economic opportunities and benefits. For the Government of Canada, this entails managing its aquatic resources to generate long-term sustainable economic benefits for all Canadians. This is reflected in the DFO Policy Framework

for the Management of Fisheries on Canada’s Atlantic Coast (Fisheries and Oceans Canada, 2004), whose vision included that fisheries “are sustainable and economically viable, contributing to the economic base of coastal communities”.

Three Level 1 Objectives were developed for the Economic Sustainability Main Objective ([Table 3](#)):

1. Sustainable economic prosperity for all users

This Level 1 Objective is focused on promoting sustainability for a wide variety of users. Opportunities include promoting long-term economic prosperity, intergenerational economic security, and regional economic benefits. The scale of this objective can range from a single individual or single community to all Canadians.

2. Strong, viable and economically sustainable community, industry and other uses are achieved

This Level 1 Objective is focused on promoting sustainability for the many uses of the resource. Opportunities include promoting Indigenous, rural and coastal community development, supporting sustainable industrial development, and supporting the sustainable growth of aquatic and non-aquatic related business and industries. The scale of this objective can include community, industry, and a variety of other uses.

3. Support sustainable livelihoods

Sustainable livelihoods play a key role in decision making for economic sustainability. This would include components such as supporting employment opportunities, employment diversification, and broader labour market developments. The scale of this objective is both individual and collective based, and places sustainable livelihoods at the centre of economic sustainability.

C. Economic Equity

Main Objective: Aquatic activities and resources are governed and managed to promote an equitable distribution of economic opportunities across all users and uses (or activities)

Economic equity can be defined as the concept of a fair and balanced distribution of economic opportunities and benefits within a society. The concept of economic equity has long been an important consideration for the Government of Canada when making decisions affecting Canadians. The Treasury Board’s Cabinet Directive on Regulation (Treasury Board of Canada Secretariat, 2024) specifically states, “Departments and agencies are to examine the potential positive and negative impacts of a proposed regulation and its feasible alternative options on Canadians, business, governments and the environment, and identify how impacts are distributed across the various parties”, (section 5.2.1 Analysis of benefits and costs).

Furthermore, there is an increased recognition of the broad and important role of equity as reflected in the Prime Minister’s 2021 mandate letter to the department³¹, which notes that, “We must continue to address the profound systemic inequities and disparities that remain present in the core fabric of our society, including our core institutions....we remain committed

³¹ <https://www.pm.gc.ca/en/mandate-letters/2021/12/16/minister-fisheries-oceans-and-canadian-coast-guard-mandate-letter>

to ensuring that public policies are informed and developed through an intersectional lens, including applying frameworks such as Gender-based Analysis Plus (GBA Plus) and the quality of life indicators in decision making.” The DFO Policy Framework for the Management of Fisheries on Canada’s Atlantic Coast (DFO, 2004) called for a “Stable and Transparent Access and Allocation Approach”.

Two Level 1 Objectives were developed under the economic equity Main Objective ([Table 3](#)). The first is directed at equity across all individual users of the nation’s aquatic resources and the second directed at the various types of collective users such as communities and industry.

1. An equitable distribution of opportunities for access and benefits across all individual users and uses is achieved

This Level 1 Objective is focused on promoting equity for individual-based users. Opportunities include equitable access to resources and markets, an equitable distribution of benefits such as income and employment opportunities, and an equitable distribution of the use of aquatic resources, including a balancing of opportunities over time and generations.

2. An equitable distribution of opportunities across communities, industries and other users and uses is achieved

This Level 1 Objective is focused on promoting equity for the large variety of users. Opportunities include supporting Indigenous, rural and coastal communities, supporting equitable industrial development, and supporting the equitable distribution of opportunities across all users and uses. The scale of this objective can include communities, industries, and other collective and individual users.

Social and Cultural Pillar

The social and cultural dimensions of aquatic resource management and ecosystem-based management have received relatively limited formal consideration to date in DFO, although there is considerable high level policy support for the inclusion of social and cultural considerations in departmental decision making. For example, the *Fisheries Act*, section 2.5 states that social, economic and cultural factors may be considered by the Minister when making a decision under the *Fisheries Act*, the preamble to the *Oceans Act* acknowledges the potential for the oceans and their resources to benefit all Canadians and coastal communities in particular, and the *Species at Risk Act* recognizes community knowledge and interests should be considered in recovery measures. However, there is less explicit guidance from Canadian and DFO policy to inform the development of more detailed objectives, therefore in developing this pillar there was greater reliance on international guidance, such as the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP, 2007), the Convention for Biological Diversity (United Nations, 1992), FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (FAO, 2015), the Code of Conduct for Responsible Fisheries (FAO, 1995), as well as current best practices from peer-reviewed literature. For these reasons, some of the Social and Cultural objectives may seem more aspirational in nature than the objectives from other pillars. For further details see the narrative for the Social and Cultural Pillar ([Appendix 6](#)).

The Social and Cultural Pillar was developed collaboratively by a task group of external social scientists and DFO staff, participants at the second and third EBM Workshops (Bundy et al., 2021; [Appendix 7](#)). Only one Social and Cultural objective, “Culture and sustenance”, was included in the original EAM Framework (Figure 3). As a result, development of the Social and Cultural Pillar began with defining the Main Objectives. Three Main Objectives, based on the CFRN Sustainability Framework (Stephenson et al., 2018), had been agreed at the first EBM Workshop (Daly et al., 2020, Figure 3). These were modified and expanded with the addition of a fourth Main Objective, “Culture” ([Table 4](#), Figure 12). The four Main Objectives are:

- A. Sustainable Communities
- B. Health and Well-Being
- C. Ethical and Just Activities
- D. Culture



Figure 12. EBM Social and Cultural Pillar – higher levels of the hierarchy

A. Sustainable Communities

Main Objective: Thriving communities are supported over the long term through the governance and management of aquatic activities

Sustainability means meeting the needs of the present population without compromising the ability of future generations to meet their own needs and reflects the capacity to thrive over the long term (United Nations Secretary-General, 1987; Government of Canada, 2008). There are many ways to define communities and a rich literature exists to this end (e.g., Clay and Olson, 2008; Cohen, 2015). Community is frequently conceptualized as a social and cultural entity that

is more than the sum of its parts. It captures aspects of life as they are lived and experienced together among community members (Sirgy et al., 2010; Sirgy, 2018). This definition is used to mean social groupings that are geographically nearby or next to coastal, marine, and/or freshwater resources and activities and are dependent on them in some way. Sustainability, thriving, resilience, and well-being are all intertwined elements of sustainable communities and have overlapping characterizations in the academic literature (e.g., Pinkerton, 1989; Woods et al., 2022).

Several high-level policy statements support the Main Objective of sustainable communities, including the *Oceans Act* (preamble) and the Marine Protected Areas Policy (Fisheries and Oceans Canada, 1999). Three Level 1 Objectives were developed based on national and international policy statements and academic literature ([Table 4](#)).

1. Community sustainability is enhanced for current and future generations to thrive

This Level 1 Objective directly addresses the concepts of sustainability and thriving. “Thriving” is an important and emerging concept that relates closely to sustainability. It acknowledges that communities are in a constant state of change, but also captures the goal that they can be changing to more positive and aspirational directions (as recently described in Bennett et al., 2019; [Appendix 6](#)). These concepts were further unpacked into Level 2 Objectives to reflect objectives of (a) shared prosperity; (b) equitable access to services, resources and opportunities; (c) long-term livability through sustaining healthy aquatic systems; (d) promotion of connectedness and sense of place; and (e) the well-being of individuals, households and communities (Figure 12, [Table 4](#)). There are links to the Economic Pillar for objectives (a) and (b) and the Ecological Pillar for objective (c). Level 2 Objective (e) is cross referenced to the “Health and Well-being” Level 1 Objective, “B2. The well-being of individuals, households and communities related to aquatic systems is fostered”, recognizing the interconnectedness of well-being and sustainable communities, see below,

2. Community resilience is supported

Community resilience is an important dimension of community sustainability and forms the basis of this second Level 1 Objective: Resilient communities are those that continue to thrive under pressure from either societal or environmental stresses arising either internal or external to those communities (Walker and Salt, 2012, Magis, 2010; Folke, 2016,). Attributes that sustain and promote community resilience include the presence of: (a) broad demographic attributes of the community; (b) Social networks and collaborative organizations; (c) Multiple and diverse activities and occupations, and desirable alternative livelihoods and (d) Infrastructure such as harbours and wharfs.

3. Community well-being is enhanced

Community well-being is another important attribute of sustainable communities. This Level 1 Objective explores well-being in the context of communities. However, it is also included under “B. Health and Well-being” below and greater detail is provided there (B2. The well-being of individuals, households and communities related to aquatic systems is fostered.)

B. Health and Well-Being

The health and well-being of individuals, households and communities are fostered through the governance and management of aquatic activities

Health is defined by the World Health Organization as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”³². It is a broad concept that includes quality of life and physical, mental and social well-being and development. Well-being is the “combination of social, economic, environmental, cultural, and political conditions identified by individuals and their communities as essential for them to flourish and fulfil their potential” (Wiseman and Brasher, 2008, p.358).

There are several areas of domestic and international policy support for Health and Well-Being. For health, DFO and Transport Canada have a Memorandum of Understanding (MOU) regarding safety at sea of commercial fishermen (Fisheries and Oceans Canada and Transport Canada, 2014). Links between health and food security are also noted in the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (FAO, 2015). There is support for promoting community well-being in policy, including the Integrated Aboriginal Policy Framework (Fisheries and Oceans Canada, 2007), and A Policy Framework for the Management of Fisheries on Canada’s Atlantic Coast (Fisheries and Oceans Canada, 2004), which stated “Self-reliant fisheries and collaboration among all orders of government will contribute to the well-being of coastal communities. To be more self-reliant, resource users will have more flexibility to make decisions about their own economic and social objectives” (p.6). Two Level 1 Objectives, based on policy and primary literature, were developed for Health and Well-being.

1. Health and physical welfare are fostered

This Level 1 Objective focuses on the links between aquatic health and human health, including occupational health and safety for workers in aquatic based industries and food security and safety. These objectives were directly drawn from policy statements in FAO Code of Conduct (1995) as well as other sources. For example, DFO’s Departmental Plan for 2017-2018 (Fisheries and Oceans Canada, 2017) recognized links between aquatic health and human health: “Continued health of our oceans and waterways and the well-being of those who depend on them”, p.1.

2. The well-being of individuals, households and communities related to aquatic systems is fostered

Well-being is important at all levels of society (Breslow et al., 2016; Organisation for Economic Co-operation and Development (OECD)³³, 2013), which is recognized in several pieces of policy including Canada’s National Adaptation Strategy that states “All adaptation efforts should consider and maximize benefits towards people’s well-being” (EEEC, 2023, Guiding Principles). The EBM Framework recognizes the multiple scales of well-being and all scales are included within this Level 1 Objective. Unpacking this objective was informed by White’s (2008) three-dimensional theory of well-being, which

³² <https://www.who.int/about/governance/constitution>

³³ [Measuring well-being and progress | OECD](#)

is commonly referenced in fisheries and ocean settings: a) Material well-being is fostered, b) Subjective well-being is fostered, and c) Relational well-being is fostered.

C. Ethical and Just Activities

Historic inequities and injustices are acknowledged, and all aquatic activities are undertaken in a respectful, ethical and just manner, including the consideration of Reconciliation with Indigenous Peoples and Gender Based Analysis (GBA)+

Ethics, or equity, and justice are interrelated concepts that can capture similar goals, however there are key differences. “Ethics refers to well-based standards of right and wrong that prescribe what humans ought to do, usually in terms of duties, principles, specific virtues, or benefits to society” (Svara, 2015). As such, ethical processes and decision making are intended to lead to equitable and fair outcomes. Equity is sometimes understood as fairness among people or groups and over time. For example, all peoples have equal access to the justice system, including equitable protection of rights. Equality is closely linked with social equity the assurance that people are treated the same (Bennett et al., 2021), for example as it relates to distribution of benefits. Justice is the removal of barriers to equity resulting in fair and reasonable outcomes.

This Main Objective has a wide potential scope and is supported by Canadian policy and guidance, such as the *UNDRIP Act* (2021) and the *Federal Sustainable Development Act* (2008). Although dated, it is also supported by the New Access Framework (Thibault, 2002; Fisheries and Oceans Canada, 2002c). Two Level 1 Objectives were developed for Ethical and Just Activities, based on national and international policy statements and academic literature (Table 4, Figure 12).

1. Just and equitable aquatic activities are fostered

This Level 1 Objective uses concepts of how people from diverse groups should be able to access aquatic activities, provides considerations for redressing historical injustices, guiding ethical treatment, and recognizing intersectionality (e.g., Gender Based Analysis+), and draws on principles of fairness. Three core dimensions of justice and equity were used to frame and unpack this objective further: recognitional equity, procedural equity and distributional equity (Franks and Schreckenburg, 2016; Zafra-Calvo et al., 2017). This Level 1 Objective links to the Governance and Economic Pillars.

2. Ethical treatment of aquatic species is promoted

“Ethical and Just Activities” includes species impacted by these activities. The ethical treatment of aquatic species can be direct, through interactions and research, as well as indirect, for example as a consequence of decisions. This Level 1 Objective links to the Ecological Pillar.

D. Culture

Significant, diverse, historical and living aspects of heritage and culture related to aquatic systems are recognized and considered in governance and management

Culture can be defined as a "set of distinctive spiritual, material, intellectual, and emotional features of society or a social group that goes beyond art and literature to include lifestyles,

ways of living together, value systems, traditions, and beliefs” (UNESCO, 2002). Culture reflects material and non-material aspects of natural resource systems imbued with meaning by social groups over time.

There are many understandings and experiences of culture (e.g., ways of being, worldviews, relationships, identities, practices) that are significant to communities, rights holders and stakeholders. Both the history and heritage (i.e., the past) and the living and evolving nature of culture (i.e., present and future) are included in the objectives. In recent years there has been increasing recognition of the importance of the role of culture in managing the sustainable use of natural resources. The importance of culture is recognized in the *Fisheries Act*, the new Framework for Identifying, Establishing, and Managing Ecologically Significant Areas (ESAs) (Fisheries and Oceans Canada, 2023a) and DFO’s Departmental Plan 2023-2024 (Fisheries and Oceans Canada, 2023b). The Canadian Government, through the *UNDA* (2021, Preamble), has also acknowledged the importance of the culture of Indigenous Peoples. Culture is represented with three Level 1 Objectives ([Table 4](#), Figure 12).

1. History and heritage are recognized and respected

Cultural history and heritage give rise to people's present-day sense of personal identity. This Level 1 Objective is supported by national and international discourses in the context of ‘cultural heritage’ (UNESCO, 2002, UNDRIP (United Nations, 2007), UNDA (Government of Canada 2021), Bill C-23 (Government of Canada, 2022³⁴). This objective recognizes intangible and tangible elements of history and heritage, which frame the two Level 2 Objectives.

2. Culture is recognized and respected as alive and dynamic

Past and present cultural aspects are dynamic and may continue to change into the future. Both the history and heritage (i.e., the past) and the living and evolving nature of culture (i.e., present and future) are recognized in this Level 1 Objective. It also recognizes diverse intangible and tangible forms of current culture that are connected to values and identity, and activities and relationships.

3. Indigenous Peoples’ right to practice and revitalize their cultural traditions and customs is recognized and respected.

Indigenous considerations relating to culture are distinct and thus placed in a separate Level 1 objective. Unpacking this objective was informed by existing Provincial, National and International legal structures and initiatives with the intention of taking action towards reconciliation. This Level 1 Objective links to the Governance Pillar.

EBM Framework use

Aquatic resource management entails the management of complex social ecological systems (SES) (Ostrom, 2009; Perry et al.; 2010, Bundy et al., 2016). SES are comprised of interconnected governance, ecological, economic and social and cultural components, which are reflected in the EBM Framework. In response to this complexity, the Framework is designed to be flexible, for

³⁴ Note that the Historic Places of Canada Act was tabled as Bill C-23, in Parliament on June 7, 2022: [Historic Places of Canada Act - Summary of Legislation - Canada.ca](#); [Bill C-23: Historic Places of Canada Act](#)

use at different spatial and temporal scales, in single or multiple sector decision-making processes and for single or multiple activities. Since most, if not all, resource management decisions will include aspects of the Governance, Ecological, Economic and Social and Cultural Pillars, all four pillars of the framework are intended to be used collectively. However, it is also recognized that not all objectives within each pillar are necessarily relevant to all decisions or issues. Therefore, an important first step in any application of the framework is to triage which objectives are relevant to the issue. Examples of this are provided in the case studies below.

Five Broad Ways to Use the EBM Framework

Following and expanding upon Stephenson et al. 2018, five broad areas of use have been envisioned for the EBM Framework (Figure 13). These are premised on DFO's objective/outcomes based approach to management, and provide the candidate objectives to be used in different decision-making contexts.

1. Checklist of objectives – the four pillars provide a checklist of objectives to be considered in the development of management plans. This follows the example of the use of the EAM Framework to develop objectives for IFMPs and MPA plans in the Maritimes Region (Curran et al., 2012) and can be extended to other plans such as Species at Risk recovery documents, habitat recovery plans, ESA establishment, management planning, etc. The objectives can be considered at the level appropriate for the plan, and act as a guide for the types of objectives to be considered. It is not proposed that all objectives across the four pillars will be relevant to every plan, but that all should be considered for relevancy. In a similar vein, the checklist of objectives can be used in decision making to assess whether all relevant considerations have been included.
2. Evaluating policies and management approaches - DFO has been aspiring to an ecosystem approach since the establishment of Canada's *Oceans Act* in 1996 (Rudd et al., 2018; Stephenson et al., 2018), and as shown by the Policy Review that supported the development of the EBM Framework (Eger et al, *in prep*). However, current DFO policies and management approaches, some of which date back to the 1990s, may not embrace the full holistic spectrum of current EBM thinking, as outlined in the EBM Framework. Therefore, the EBM Framework can be used to evaluate how current policies and management approaches align with EBM objectives, and develop recommendations for updates where appropriate. We posit that considering a broader suite of objectives would lead to more successful policies and management approaches. The next step would be to then use this broader suite of objectives to explore different management scenarios.
3. Scenario comparison – in the complex world of decision making, clear objectives are required to evaluate different potential management options or scenarios. These provide the basis for transparent, evidence-informed decisions (Policy on Science Integrity, 2019³⁵) and is the case whether decisions are for a single sector or multiple sectors. The objectives of the Governance, Ecological, Economic and Social and Cultural Pillars of the EBM

³⁵ [Policy on science integrity \(dfo-mpo.gc.ca\)](https://www.dfo-mpo.gc.ca/policy-on-science-integrity)

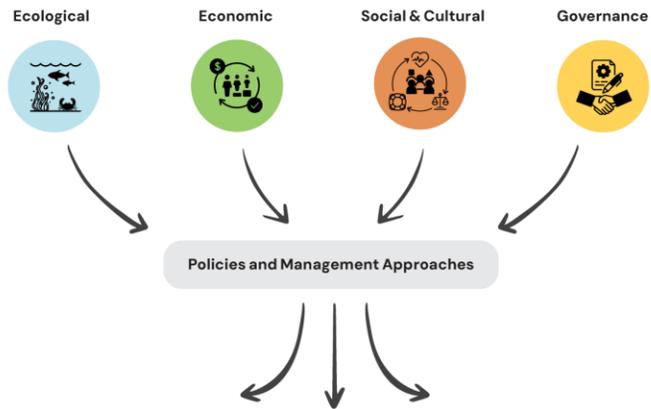
Framework provide a holistic basis for comparison across scenarios. For example, the scenarios could be different options for opening a new fishery, different placements of a protected area, different locations of wind energy, or aquaculture sites or stocking options for Atlantic salmon.

4. Management report card – successful management is adaptive and learns from past decisions. The EBM Framework can be used as the basis for assessing management success against the relevant objectives, thus forming a management report card. Ideally management plans will have been developed or evaluated and updated using the EBM Framework (see first two uses above). In this case, indicators would be used to assess whether the objectives have been met, identify objectives that may need more focus in the future and possibly, identify the need to adjust the management plan to better meet all objectives. If the management plan has not been developed or reviewed with respect to the EBM Framework, the first step for the report card would be as described above, i.e., to explore how the management approaches align with EBM objectives. The next step would be to assess whether these objectives are being met, then to develop recommendations for addition of further EBM objectives (e.g., see Paul and Stephenson (2020) for an evaluation of IFMPs).
5. Cumulative effects, risk assessment and tradeoffs – assessing the cumulative effects of activities, the risks associated with them and the potential trade-offs among them is the basis for EBM, Integrated Management, Marine Spatial Planning and the Blue Economy, i.e., the holistic management of aquatic resource use. For example, the Fish and Fish Habitat Protection Policy Statement (Fisheries and Oceans Canada, 2019c) describes cumulative effects as “Any cumulative harmful impacts on fish and fish habitat that are likely to result from the work, undertaking or activity in combination with other works, undertakings, or activities that have been or are being carried out (Fisheries and Oceans Canada, 2019c, p.22; Fisheries and Oceans Canada, 2025). Essential to the assessment of cumulative effects is the development of a common currency with which to evaluate cumulative effects, risk and trade-offs. Common core objectives across the activities of concern, as provided by the EBM Framework, can provide this common currency using quantitative or qualitative measures. For example, each activity could share 1-2 common objectives from each pillar, Main Objective and Level 1 Objective, and these would form the basis of the assessment. Figure 13(5) provides a simple illustration of this for 4 activities with common objectives. Each activity is evaluated against each objective and the effect measured. Of course, this may not be as straightforward as portrayed since management plans will already exist and they will not share all the same objectives. However, the addition of a core set of common objectives could supplement rather than replace current plans, and provide the necessary common currency. Moving forward, plans could evolve and adapt iteratively, encompassing a common, more holistic, consistent basis for management, enabling the evaluation of cumulative effects, risks and trade-offs across multiple activities.

1 Checklist of objectives



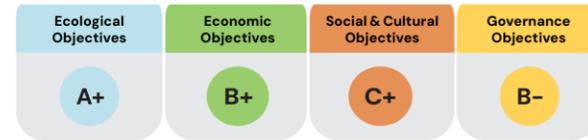
2 Evaluating policies and management approaches



3 Scenario comparison

Objectives	Management Options		
	Scenario A	Scenario B	Scenario C
Ecological	✓	✓	✓
Economic	✗	✗	✓
Social/Cultural	✗	✓	✗
Governance	✓	✓	✗

4 Management report card



5 Cumulative effects and tradeoffs

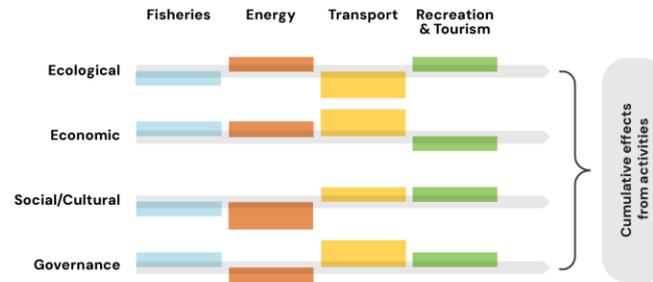


Figure 13. Five proposed uses of the EBM Framework

Multiple uses of the Framework have been proposed during workshops and Working Group meetings (Figure 14). The Framework can help guide and tailor the development of advice, support day-to-day operations, and inform specific decisions. At the centre of Figure 14, are integrated management, marine spatial planning and the blue economy, three interconnected, holistic approaches advanced by DFO to achieve sustainable aquatic management. EBM has been recognized as a means to advance IM³⁶ and MSP (Fisheries and Oceans Canada, 2024³⁷) and can equally contribute to Canada’s goal for a sustainable blue economy, which requires “a strategy to create jobs in coastal communities while ensuring our oceans remain healthy”³⁸. The other identified uses of the EBM Framework can be considered components of IM, MSP and the blue economy. Environmental assessments, which are part of a blue economy, integrated management and marine spatial planning, such as for offshore wind development or tidal power, for example, require the consideration of the impacts across a full suite of sustainability objectives, provided by the EBM Framework.

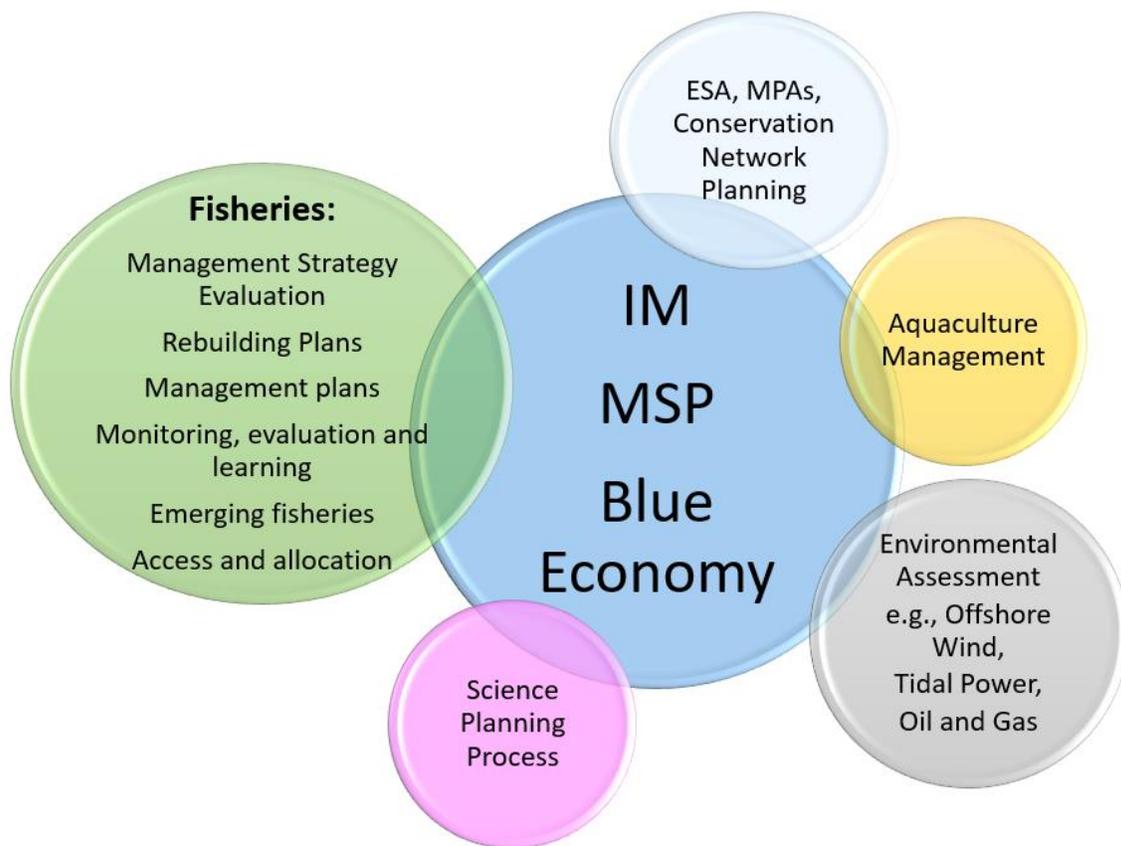


Figure 14. Bubble plot showing the multiple potential uses of the EBM Framework (MSP = Marine Spatial Planning, ESA = Ecologically Significant Area, MPA = Marine Protected Area)

³⁶ [Integrated oceans management](#)

³⁷ [First-generation Marine Spatial Plan: Scotian Shelf and Bay of Fundy](#)

³⁸ [Canada’s blue economy](#)

DFO has been working towards meeting its conservation goals of achieving 30% protection by 2030³⁹ through the development of MPA Networks across the country. EBM is one of the guiding principles for MPA Network design⁴⁰. As noted above, the ecological objectives of an earlier EAM Framework have already formed the basis of for some MPA objectives in the Maritimes Region (Daly et al., 2020). Version 1 of the EBM Framework has the potential to contribute to the development of more holistic objectives for future MPAs and offers broad range of factors for consideration in the MPA development process (see the case study by Eger and Bundy (2024) [below](#) for further discussion). More recently, DFO has developed a framework for identifying, establishing, and managing ecologically significant areas (ESAs, Fisheries and Oceans Canada, 2023a). ESAs are intended to be a proactive tool that conserves and protects key areas of fish and fish habitat over the long term. While no ESAs have yet been established in Canada, the EBM Framework was used to inform the development of the first candidate ESA, the St. Mary's River (Napu'saqnuq) on the eastern shore of Nova Scotia (see further details in case study below). There is broad scope to bring EBM considerations into fisheries management including using objectives to inform management strategy evaluation, management plans, rebuilding plans, emerging fisheries and informing decisions around access and allocation.

The EBM Framework can also inform DFO planning and gap analysis. For example, projects in the DFO Science Project Planning Tool were classified by the EBM Pillars and first level objectives using automated text matching to help characterize how funding is distributed within DFO Maritimes Science, and look for patterns or gaps.

The Ecological Pillar and its objectives also form the basis of a conservation monitoring and reporting framework, currently under development in the Maritimes Region, which seeks to evaluate and report on the status of the Maritimes Region conservation areas and MPA network as a whole. By identifying and reporting on the status/progress of indicators for every objective of the Ecological Pillar, this framework aims to provide a holistic, transferrable, and reproducible way to evaluate and compare the status of conservation network sites, highlighting the contribution of each site, and the network, to habitat, productivity and biodiversity objectives for the bioregion.

Case Studies

The EBM Framework is being piloted and evaluated through its application to different types of case studies. For example, Eger and Bundy (2024) applied the EBM Framework to Canada's Marine Protected Area establishment process (Fisheries and Oceans Canada, 2022, 2023) using the example of the St. Anns Bank Marine Protected Area on the inner Scotian Shelf, east of Cape Breton, Nova Scotia. The objective of this case study, which corresponds to Use 2 (Evaluating policies and management approaches) was to explore the St. Anns Bank MPA establishment process through an EBM lens, to document lessons learned, and to further inform the development and future application of the EBM Framework. Canada's MPA establishment process consists of five steps (Fisheries and Oceans Canada, 2022). To assess the degree to which the four pillars of the EBM Framework and their Main Objectives were reflected in the St.

³⁹ <https://www.dfo-mpo.gc.ca/oceans/conservation/plan/MCT-OCM-eng.html>

⁴⁰ [Guiding Principles](#)

Anns Bank MPA establishment process, key documents relating to Steps 1-3 and Step 5 were analysed separately using qualitative and quantitative approaches. The results showed that all four pillars were aligned with the St. Anns Banks MPA establishment process, but to varying degrees across the pillars and their Main Objectives, although Main Objectives from all four pillars were reflected throughout all stages of the MPA establishment process. The Ecological Pillar objectives were the most strongly reflected, and the Economic and Social/Culture Pillar objectives the least reflected. Overall, the case study exercise highlighted the potential value of evaluating policies and management through an EBM lens to aid the transition towards a more effective, holistic approach to coastal and marine governance and management.

In a second case study, Tam et al. (2024) explored using the EBM Framework to support Fisheries Advice provision for the Inshore Lobster Fishery in the Maritimes Region (Lobster Fishing Areas 27-38). This case study was an example of Use 1 (Checklist of objectives) with an evaluation of data and information needs for EBM. Current fisheries management decisions for the Lobster fishery in the Maritimes Region are supported by four documents: 1) Lobster research framework (LRF), 2) Indigenous Fisheries Management and Indigenous Management Plans and Protocols (IFM), 3) Integrated Fisheries Management Plan (IFMP), and 4) the Blue Economy Lobster Team (BELT) Project. The authors explored the data and information within the four documents using qualitative categorization to determine if they were sufficient to meet EBM Framework objectives. They found that the total objectives addressed by the four documents represented 51% (67) of the second-level EBM Framework objectives. An interesting aspect of this case study was the identification of potential gaps in the EBM Framework. These included clarifying how environmental conditions (e.g. temperature) impacting an objective could be added. The authors also noted the need to add EBM Framework objectives to encapsulate the issue of illegal activities, which would be included under the Governance Pillar. The authors suggested that the EBM Framework could be adopted into current operational activity as a useful checklist to ensure broader EBM Pillars are considered to meet legislative, policy, and mandate requirements for fisheries, and could be used as a basis for future research avenues for incorporating ecosystem components into stock assessments and science advice for fisheries management.

The EBM Framework is also being explored in a forward-looking context. The Integrated Planning Team from the Maritimes Region Fish and Fish Habitat Protection Program (FFHPP) is exploring how the EBM Framework can contribute to the development of the proposed candidate ESA, the St. Mary's River (Napu'saqnuk) on the eastern shore of Nova Scotia, the first candidate ESA in Canada. The Integrated Planning Team are using the EBM Framework as a checklist (Use 1) to support the ESA establishment process, which is in its beginning stages. Throughout this process, all of the relevant objectives of the EBM framework can be considered.

To date, the case studies have primarily focused on Uses 1 and 2. Currently, the aquaculture management program in DFO is currently exploring using the EBM Framework to inform decisions on introductions and transfers of aquatic organisms (Use 3). While there is a national code that prescribes the process, including a formal ecological risk assessment, there is no equivalent structured process for consideration of social or economic objectives. Therefore, the EBM Framework is being used to add transparency and structure to inform the decision-making

process for introductions and transfers of aquatic organisms. On-going work is exploring the use of the EBM Framework for scenario comparison and further case studies are planned.

Discussion

The EBM Framework v1.0 was developed to support DFO's objectives-based management approach by providing a holistic suite of objectives for management, to aid in decision-support, to enable the assessment of cumulative impacts of human activities on system sustainability, and to assess risks and trade-offs, all components of current management and governance. It was developed through active collaboration across DFO Maritimes Sectors, and engagement with First Nations, particularly through an on-going collaborative project to explore if and how to expand and improve the framework to include Indigenous knowledge and ways of being, and with social science academics from across Canada. Informed and supported by policy and expertise, the EBM Framework is a comprehensive, holistic Framework with sufficient flexibility to be implemented across DFO Sectors, multiple activities, spatial and temporal scales, and in single or multiple sector decision-making processes. Most resource management decisions require governance, ecological, economic and social and cultural considerations, and given the complex nature of SES and aquatic resource management, all four pillars of the framework are intended to be used together, providing a structured, transparent approach to decision making.

The EBM Framework was designed to be "evergreen", recognizing that aquatic resource management is an evolving process, where, for example, government policies, objectives and priorities can change over time, new activities are developed (e.g., proposed offshore wind on the Scotian Shelf), and Canada's commitments to Indigenous Peoples are respected and implemented. With respect to the latter, ongoing engagement with the Atlantic Policy Congress is leading to strengthening the EBM Framework with First Nations' values, ways of knowing and perspectives. In addition, feedback and lessons learned from case studies and application of the EBM Framework are likely to lead to tweaks and improvements. Therefore the EBM Framework will be periodically updated.

This version 1.0 of the Framework brings together objectives from the policy, governance and management landscape of DFO and the Government of Canada, including international commitments as well as relevant academic literature. It has been unpacked to be specific enough to be useful but general enough to apply to the range of issues and decisions related the aquatic resource management. Further specificity and indicators will be developed through case studies.

On the importance of Governance

Governance is the overarching context for implementing EBM and is one of the four pillars within the EBM Framework. Overall, governance refers to the set of structures (i.e., formal and informal) and processes through which human actors make decisions that influence actions and outcomes. It is a pillar, because there are specific governance (and institutional) objectives that need to be considered alongside the objectives of the other pillars. As a pillar, it lays down the ground rules for the Framework: it identifies legal frameworks for decision making, outlines objectives for good governance process and provides objectives to assess whether this has

indeed taken place. It interacts and connects with the other three pillars, providing guidelines and direction for how objectives should be assessed. For example, under the Main Objective B. Governance Structures and Processes, the fourth Level 1 Objective states that “Multiple types of knowledge and information and sources are considered and included”, with the Level 2 Objectives providing more detail. Therefore, in the Governance, Ecological, Economic and Social and Cultural Pillars, multiple types of knowledge, including Indigenous knowledge systems, Fisher Knowledge, Social Science and Humanities knowledge and/or Natural and environmental sciences knowledge should be used to inform the objectives and ultimately decision making. Similarly, the Main Objective A. Legal Obligations and Other Commitments outlines the legal landscape that should inform decisions and the processes that lead to decision making, including the Level 1 Objective “4, Effective action on climate change is taken”. This objective specifies that “Climate change trends and projected impacts inform decisions”. Therefore climate change impacts should inform governance, ecological, economic and social and cultural objectives where appropriate.

Scope of the EBM Framework

Aquatic resource management ranges from decisions that currently involve only DFO, e.g., fisheries quota decisions, to decisions that can involve multiple government departments, jurisdictions (Federal/Provincial/Municipal), Indigenous organizations and rights holders, stakeholders and ENGOs. Examples of the latter include MPA establishment (Fisheries and Oceans 2022), ESA establishment (Fisheries and Oceans 2023), salmon enhancement, offshore wind development (led by Impact Assessment Agency of Canada⁴¹) and the Blue Economy⁴². Although DFO is not the lead in all aquatic resource management issues, the EBM Framework was designed to have the capacity to address all such issues. To embrace this scope, in addition to DFO’s broad mandate, which is reflected in the objectives across the EBM Framework, some of the objectives reach beyond DFO’s direct mandate and some may appear more aspirational. In cases where the objectives appear to go beyond DFO’s mandate, they may (a) reflect current MOUs or similar agreements between government departments and/or different levels of government, (b) reflect the need for a whole of government approach, (c) identify potential impacts of decisions that should be taken into consideration, even if outside DFO’s mandate, and/or (d) encourage a broader set of considerations in decision making. Note that even where DFO does not have direct mandate or authority, decisions that are made may still have implications for some of these dimensions. For objectives that are outside DFO’s direct mandate, it will be important to work with the appropriate authorities to navigate, consider and implement these objectives.

Aspirational objectives are most noticeable in the Social and Cultural Pillar, which has high level policy support, but less direct, detailed support than the other three pillars. Therefore, there was greater reliance on international guidance in its development, as well as current best practices from peer-reviewed literature. For example, the following Level 1 Objective was developed under the Main Objective, A. Sustainable Communities: “1. Community sustainability is enhanced

⁴¹ <https://iaac-aeic.gc.ca/050/evaluations/proj/83514?culture=en-CA#>

⁴² <https://www.dfo-mpo.gc.ca/campaign-campagne/bes-seb/index-eng.html>

for current and future generations to thrive”. Using policy documents⁴³ and the literature, it was theorized that thriving represents meeting all sub-objectives for sustainability, community well-being, and resilience (see Social and Cultural narrative, [Appendix 6](#), for more details). Examples of policy statements that support community sustainability across generations include “By taking action to adapt to the changing climate along with reaching net-zero emissions, we can build communities and economies that are able to thrive for generations to come” (Canada’s National Adaptation Strategy, ECCO, 2023, p.2) and in the Goals of the Marine Protected Areas Policy (Fisheries and Oceans, 1999), “To contribute to the social and economic sustainability of coastal communities by providing for uses which are compatible with the reasons for designation”. A recent review of the social science and humanities peer-reviewed literature concerning marine systems in Atlantic Canada demonstrates that there is great potential for social sciences to contribute to the Social and Cultural Pillar and all pillars of the EBM Framework (Andrews et al. 2025).

Cross Cutting Themes

During the development of the four pillars and the unpacking of the objectives, it became clear that there was some duplication of objectives within and across the four pillars, some of which were cross-cutting. This is to be expected since the EBM Framework is premised on the concept of interconnected SES, therefore different aspects of EBM cannot be siloed, nor should they be. This duplication can occur within pillars, across two or more pillars, or both.

Where possible, duplication was reduced to avoid repetition and possible confusion, especially when it occurred within one pillar. For example, in the Ecological Pillar, connectivity, aquatic invasive species and pollution can all influence Ecological Pillar objectives. However, they were specifically identified in one place (C. Habitat) to avoid repetition. In the Social and Cultural Pillar, resilience and thriving are concepts that span the four Main Objectives, but they were only specifically identified in A. Sustainable Communities. In other cases, such as the Level 1 Objective, “Community-well-being” (Social and Cultural Pillar), the objective occurs under A. Sustainable Communities and B. Health and Well-being, but is only unpacked further under B. Health and Well-being. Under A. Sustainable Communities, the user is referred to B. Health and Well-being for further information about Community-well-being.

Climate change is an overarching issue that spans all four pillars. However, rather than include it in each pillar, it was included as a Level 1 Objective in the Governance Pillar to reflect the DFO-CGS Sustainable Development Strategy (Fisheries and Oceans Canada, 2020b), which has the goal to take “Effective action on climate change”. Climate change was not directly included in the Ecological Pillar since DFO cannot manage climate change directly, but rather needs to manage for climate change. This is reflected in the Governance climate change objective. There remain many barriers to addressing climate change and general acknowledgement of the need to address climate change across government is needed.

Concepts such as equity and access are cross cutting and occur across three pillars: Economic, Social and Cultural and Governance. Equity, for example, is a Main Objective, “C. Economic

⁴³ E.g., A Policy Framework for the Management of Fisheries on Canada’s Atlantic Coast” [Fs23-443-2004-eng.pdf](#)

Equity” in the Economic Pillar; a Level 1 Objective, “C. Ethical and Just Activities - Just and equitable aquatic activities are fostered” in the Social and Culture Pillar; and two Level 1 Objectives, “B. Governance Structures and Processes - Procedural equity is promoted” and “C. Governance Outcomes - Decisions are equitable, fair and just” in the Governance Pillar. In this case, equity was included in each of the three pillars since the objectives address different aspects of equity.

Indigenous rights are also cross cutting and as currently developed, objectives focused on Indigenous rights occur throughout the Governance, Economic and Social and Cultural Pillars. Again, these objectives are explored through different lenses in each of the pillars, ensuring that they are considered in these different contexts. While there is on-going direct engagement with the APC on the EBM Framework, it is acknowledged that more direct input from Indigenous peoples and organizations is required to further develop the objectives of the EBM Framework. The objectives that have been unpacked have been unpacked in alignment with UNDRIP, UNDA Canadian laws and policies, and recommendations from the IPOD project with APC. In the Governance Pillar for example, A1. Legal obligations and commitments to Indigenous Peoples are recognized and implemented includes the following objective: A1b. “ The prioritization of fishery access, including Food, Social and Ceremonial fisheries and the Treaty right to fish in pursuit of a moderate livelihood, is supported”. In C. “Governance Outcomes”, an objective concerning Canada’s fiduciary responsibilities to Indigenous Peoples was included based on recommendations from the APC. In the Economic Pillar in several objectives occur under C. Economic Equity, e.g., 2a. “An equitable distribution of opportunities for Indigenous communities is promoted” and in the Social and Cultural Pillar under D. Culture – D.3. “Indigenous Peoples’ right to practice and revitalize their cultural traditions and customs is recognized and respected”.

Competing Objectives, Trade-offs and Risk

For some issues there may be competing objectives within and across pillars, revealing possible differences in values and priorities for users of the Framework. For example, an objective to increase efficiency may result in a decrease in equity in the Economic Pillar, or an Ecological objective to conserve species biodiversity may be limited by an Economic objective to enhance economic outputs and benefits. Other objectives may be complementary, such as Ecological objectives to conserve production and biodiversity, or a Governance objective to promote procedural equity and a Social and Cultural objective for community sustainability. These are examples of the types of trade-offs and synergies that can be expected in EBM of multi-use aquatic systems. Whether, and how, to weight the four pillars and their objectives is part of the decision-making process, which is captured in the Governance Pillar (B. Governance Structures and Processes and C. Governance Outcomes) and a growing literature on trade-off analysis (e.g., Brown et al., 2001; Cheung and Sumaila, 2008; Libralato et al., 2019; Pittman et al., 2020) and co-governance.

An important feature of the use of the EBM framework is the explicit articulation of the consequences, and therefore trade-offs, of potential management scenarios. This also introduces the concept of risk, that is assessing the risk of not achieving objectives and/or risk of

other undesirable impacts (Holsman et al., 2017). In an EBM context, risk assessment can be challenging due to the multiples types of pressures, diverse impacts and different levels of information and data available. Fortunately, there is a rich literature and guidance on qualitative, quantitative and hierarchical approaches to risk assessment (e.g., Hobday et al., 2011, Holsman et al., 2017, Hodgson et al., 2019, Clark et al., 2022).

Communications and Outreach

The EBM Working Group has worked at several levels to communicate information about EBM and the EBM Framework. To date, they have worked with the Maritimes Region DFO Communications Team to develop a communications strategy for audiences within DFO regionally and nationally, and have presented the framework in numerous DFO venues and to senior management. Presentations have also been made to scientific conferences and to university courses. In parallel, a Google Site⁴⁴ has been developed as a key communication tool to provide information about EBM and the EBM Framework, and as a repository for information and publications about the Maritimes EBM Initiative. Two technical reports describing the application of the EBM Framework to case studies have been published (Eger and Bundy, 2024, Tam et al., 2024), and this report is key as an information source and user guide for those interested in using and applying the Framework.

Next Steps

Version 1.0 of the EBM Framework provides the basis to explore its potential as a tool to support decision making in DFO. The Framework is in the testing phase and is not official DFO Policy, although it has broad support from Maritimes Region Senior Managers. Several next steps have been identified for its continued development, testing and future application:

1. In collaboration with the Atlantic Policy Congress of First Nations Chiefs Secretariat (APC), use the advice and results from the project, “Indigenous concepts, values objectives and knowledge and the Maritimes Ecosystem-Based Management (EBM) Framework: an opportunity for Etuaptmuk?” to continue to expand and strengthen the Framework and discuss additional means to represent Indigenous ways of knowing and being in DFO’s EBM approach.
2. Continue testing the EBM Framework in different contexts, questions and issues
 - a. Demonstrate how the Framework can be used in a proactive decision-making mode and can improve current management processes.
 - b. Apply the Framework in different contexts to enable the development of indicators for operational objectives
3. Continue communications and outreach
 - a. Develop Maritimes intranet webpage for EBM Framework
 - b. Develop ways to enable access to, and understanding of, the EBM Framework. For example,
 - i. Develop Google Site explaining EBM and the EBM Framework
 - ii. Recorded presentations about the EBM Framework

⁴⁴ [EBM Initiative \(google.com\)](#)

- c. Continue engaging with senior management to enhance understanding and uptake of the EBM Framework in the Department to:
 - i. Support DFO decision making across sectors.
 - ii. Explore how it can contribute to national initiatives such as Integrated Oceans Management⁴⁵, the Blue Economy Strategy⁴⁶ and Marine Spatial Planning⁴⁷.
 - d. Encourage greater uptake of the EBM Framework and broaden use beyond DFO
 - e. Continue and broaden engagement with different stakeholder sectors
4. Update EBM Framework with new information from case studies, user input and evolving issues and needs.

Conclusion

The Maritimes EBM framework version 1 articulates a comprehensive suite of core objectives and values for EBM, based on Canadian policies and international agreements. One unique strength of this framework comes from considering management issues and problems across Governance, Ecological, Economic and Social and Cultural Pillars and objectives. It provides a common tool for assessing the Department's national and regional progress on legislative commitments, mandate letter priorities, and various policies that require consideration of the four pillars of sustainability. The EBM Framework lays the foundation for advancing Integrated Management, Marine Planning, the Blue Economy and more holistic thinking within DFO. It can be used to develop advice that addresses the full consequences of potential management scenarios, including the identification and quantification of trade-offs. A second unique strength of this framework originates in the collaborative, participatory way it was developed, using a variety of approaches and involving a diverse range of participants to define pillars and objectives. Progress was made on working with Indigenous Peoples to collaborate on development of the framework, but more is required to work together to integrate Indigenous perspectives, knowledge systems, and governance practices into the Framework and its implementation. Overall, this process has broadened EBM thinking across DFO sectors and beyond, established a strong evidence-based foundation for its application, and is poised to accelerate the future advancement and utility of EBM within the Department.

Acknowledgements

We would like to acknowledge the many people that contributed to and supported the development of the EBM Framework. These include the participants of the three DFO workshops that were an integral part of the development process, the participants of the task groups listed in [Appendix 2](#) and a big thank you to our two co-champions, the Regional Director for Science (Francine Desharnais) and the Regional Director for Aquatic Ecosystems (Wendy Williams).

⁴⁵ [Integrated oceans management \(dfo-mpo.gc.ca\)](https://www.dfo-mpo.gc.ca/integrated-oceans-management)

⁴⁶ [Canada's blue economy \(dfo-mpo.gc.ca\)](https://www.dfo-mpo.gc.ca/blue-economy)

⁴⁷ [Marine spatial planning \(dfo-mpo.gc.ca\)](https://www.dfo-mpo.gc.ca/marine-spatial-planning)

We would especially like to acknowledge the Atlantic Policy Congress of First Nations Chiefs Secretariat, especially Melissa Nevins and Allie Rivers, for embracing the aspirations of the EBM Framework and enabling an engagement with APC members to strengthen the EBM Framework with Indigenous knowledge and values. This work is on-going. We would also like to acknowledge the research conducted by Dr. Shelley Denny, and the recommendations from that work, which made valuable contributions to the EBM Framework. Further we thank all the participants of the two APC EBM workshops for their time, knowledge and contributions. We learned so much from you - Wela'lin!

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Tables

Table 1 – Governance Pillar

Governance Pillar

A. Legal Obligations and Other Commitments

B. Governance Structures and Processes

C. Governance Outcomes

NOTES

“All relevant parties” includes:

- Indigenous Peoples, Indigenous organizations and Indigenous rights holders
- local, regional and national governments
- industry
- environmental and conservation organizations
- community interest groups
- civil society members

A. Legal Obligations and Other Commitments: Legal obligations and other commitments related to aquatic systems, including to Indigenous Peoples, are recognized and implemented in governance and management

1. Legal obligations and commitments to Indigenous Peoples are recognized and implemented

- a. Implementation of the DFO-CCG Reconciliation Strategy and the DFO Regional Reconciliation Action Plan, in a manner consistent with, among others, Section 35 of the *Constitution Act, 1982*, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP, 2007), the UNDRIP Act (UNDA, 2021, and the Federal Principles Respecting the Government of Canada’s Relationship with Indigenous Peoples, is supported
 - i. Implementation of Indigenous and treaty rights (Aboriginal treaty rights) related to fisheries, oceans and other aquatic systems is supported
 - ii. The three long-term objectives of the DFO-CCG Reconciliation Strategy are actively pursued:
 - Strengthened Indigenous-Crown Relationship
 - Recognized Self-Determination
 - Reduced Socio-Economic Gaps
 - iii. The five action areas in the DFO-CCG Reconciliation Strategy are supported:
 - Enhance internal capacity to deliver on reconciliation,
 - Transform laws and policies,
 - Negotiate treaties and non-treaty agreements,
 - Build decision-making and collaborative management processes, and

- Enhance economic opportunities and capacity
- iv. Canada aims to secure free, prior and informed consent (FPIC) when Canada proposes to take actions which impact Indigenous Peoples and their rights, including their lands, territories and resources.
- b. The prioritization of fishery access, including Food, Social and Ceremonial fisheries and the Treaty right to fish in pursuit of a moderate livelihood, is supported – *Also see Social and Cultural Pillar D. Culture*
 - i. Food, Social and Ceremonial fisheries are prioritized
 - ii. The Treaty right to fish in pursuit of a moderate livelihood is upheld and implemented

2. National legal obligations and commitments related to aquatic systems are recognized and implemented.

- a. All relevant legislation and regulations in decision making are adhered to, including (but not limited to):
 - i. Relevant provisions of the *Oceans Act*
 - ii. Relevant provisions of the *Fisheries Act*
 - iii. Relevant provisions of the *Species at Risk Act*
- b. All relevant policies specific to DFO’s mandate in decision making are implemented, including (but not limited to):
 - i. The Sustainable Fisheries Framework
 - ii. Species at Risk policies,
 - iii. Habitat protection policies
 - iv. Licensing policies, such as fleet separation
 - v. The principle of adjacency
- c. A precautionary approach is used to manage fisheries and other activities
 - i. Risk and uncertainty are accounted for
 - ii. Limit reference points are established where possible
- d. Relevant aspects of the Federal Sustainable Development Strategy (2022-2026) are included where appropriate, including (but not limited to):
 - i. Goal 7: Increase Canadians' access to clean energy
 - ii. Goal 8: Encourage inclusive and sustainable economic growth in Canada
 - iii. Goal 9: Foster innovation and green infrastructure in Canada
 - iv. Goal 10: Advance reconciliation with Indigenous Peoples and take action to reduce inequality
 - v. Goal 13: Take action on climate change and its impacts– see A.4
 - vi. Goal 14: Conserve and protect Canada's oceans
 - Marine Conservation Targets- 30% by 2030
 - Fish Stock Provisions

3. International legal obligations and commitments related to aquatic systems are recognized and implemented.

- a. Relevant international agreements and obligations are implemented, including (but not limited to):
 - i. The United Nations Convention on Biological Diversity Kunming-Montreal Global Biodiversity Framework (2022)

- ii. Charlevoix Blueprint for Healthy Oceans, Seas and Resilient Coastal Communities (2018)
- iii. Food and Agriculture Association of the United Nations (UNFAO) Code of Conduct for Responsible Fisheries (1995)
- iv. International Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean (Oct 3, 2018)
- v. United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) (2007)
- vi. United Nations Agreement on Straddling and Highly Migratory Fish Stocks (signed Dec 4, 1995; ratified August 3, 1999)
- vii. Global Ghost Gear Initiative (2015)
- viii. Global Ocean Alliance (2020)

4. Effective action on climate change is taken

- a. Climate change trends and projected impacts inform decisions related to the following management areas:
 - i. Fisheries
 - ii. Oceans and coastal infrastructure management
 - iii. Species conservation
 - iv. Marine safety
- b. Adaptation and mitigation planning are considered and supported, including (but not limited to):
 - i. Emissions are reduced in Government, industrial, commercial and recreational sectors
 - ii. Sequestration of carbon is increased
 - iii. Adaptation strategies that increase resilience to the impacts of climate change are supported

B. Governance Structures and Processes: Appropriate governance structures are in place to enable effective decision making related to aquatic systems

1. Procedural equity is promoted

- a. Full and meaningful participation of all relevant parties in decision making is enabled
- b. Roles and responsibilities of all relevant parties are clearly defined and agreed upon
 - i. Roles and responsibilities of parties in decision making are defined
 - ii. Decision-making process(es) are clearly defined for all
- c. Accountability for actions and inactions is fostered for all relevant parties
- d. Adhere to principle of transparency in decision making
 - i. All relevant parties are provided with access to the rationale used in decision making, subject to Federal Legislation and/or DFO policy
 - A record of decision making is kept and the rationale for decisions should be made publicly available, where possible
 - Ensure that there is an effective free flow of information (i.e., available and accessible) to all relevant parties as well as the general public, where possible
- e. Potential impacts on intergenerational equity are considered

2. Appropriate collaborative and inclusive governance structures are in place and inform a consistent, approach to DFO decision making and integrated management. Governance structures would include:

- a. Nation-to-nation, government-to-government relationships with Indigenous Peoples based on the recognition of rights, respect, co-operation, and partnership
 - i. Uphold the Duty to Consult and the Duty to Accommodate
 - ii. Build, heal and strengthen meaningful relationships with Indigenous Peoples
 - Time and culturally safe and appropriate spaces for developing meaningful relationships with Indigenous Peoples are enabled and supported
 - iii. Opportunities and structures that facilitate co-learning and the sharing of diverse perspectives, knowledges and expertise are available and accessible
- b. Internal, amongst DFO Maritimes Region Branches/Sectors/Divisions;
 - i. Synergies with other sector policies and objectives are considered, where relevant
 - ii. Cross-sector working groups, committees etc. are established where required
- c. Inter-regional, with other DFO/CCG Regions and/or with National Headquarters;
 - i. Structures that enable Integrated management of multiple activities are created and supported
 - ii. Time and space for interagency collaboration in work planning is enabled and supported
 - iii. Vertical and horizontal governance integration are improved
- d. Interdepartmental, through a federal whole of government approach;
 - i. Opportunities and structures that facilitate the sharing of diverse knowledges and expertise are available and accessible
 - ii. Synergies with policies and objectives of other Departments are considered, where relevant
 - iii. Cross-Department working groups, committees, etc. are established where required
- e. Intergovernmental, with provinces and territories and Indigenous organizations, and can include:
 - i. Co-development of policies, programs and plans with all relevant parties
 - ii. Establishment of structures such as MOUs and collaborative agreements to support management where appropriate
- f. External, with other relevant implicated partners and stakeholders
 - i. Collaborative relationships are developed and maintained
 - ii. The identification and engagement of relevant external partners and stakeholders is led using robust methods (e.g., stakeholder and rights holder analysis) and/or by trained professionals (e.g., social scientists, facilitators, etc.)

3. Appropriate structures or mechanisms to address conflicts are in place

- a. Culturally relevant mechanisms for conflict resolution are available and accessible
- b. Conflicts are addressed in a timely manner.
- c. Indigenous rights are upheld and prioritized

4. Multiple types of knowledge and information and sources are considered and included

- a. Best available knowledge and information, including social and natural sciences, Indigenous knowledges and other ways of knowing, are used for advice and to enable evidence-informed decision making, including (but not limited to):
 - i. Indigenous Knowledges
 - ii. Fisher Knowledge
 - iii. Social Science and Humanities
 - iv. Natural and Environmental Sciences
- b. All relevant knowledge and information are considered and used in a manner that respects data sovereignty and/or intellectual property
- c. Decision-making processes are adaptive to changing knowledge and information

5. Sufficient funding/resource base to facilitate capacity building and meaningful participation in appropriate governance structures is available and accessible

- a. Resource needs for effective and appropriate contributions to governance structures and processes are recognized and supported, for indigenous rights holders and stakeholders, including:
 - i. Necessary skills and expertise
 - ii. Sufficient funding
 - iii. Sufficient equipment
 - iv. Sufficient space
 - v. Sufficient administrative staff
- b. Internal capacity to deliver on effective governance is enhanced
 - i. Training provided where required
 - Increase understanding of the historical, political and legal context of Indigenous Peoples
 - Increase cultural competency and capacity
 - ii. New skills sets are hired

C. Governance Outcomes: Key governance principles guide evidence informed decisions and result in the effective and sustainable management of aquatic ecosystems

1. Decisions are equitable, fair and just

- a. Values and interests of all relevant parties are accounted for in decisions
- b. Indigenous values, knowledge systems and governing principles are woven into decision making
- c. Decisions are unbiased

2. Decisions are consistent and transparent - See B. 1 d.

3. Decisions are evidence-informed - See B. 4

- a. Decisions use best available knowledge and information

4. Decisions uphold the Crown's fiduciary responsibilities to Indigenous Peoples

5. Decisions serve the public interest

- a. Potential impacts on intergenerational equity are considered- See B. 1 e.

Table 2 – Ecological Pillar

Ecological Pillar

A. Productivity

B. Biodiversity

C. Habitat

A. Productivity: Productivity is conserved, protected, maintained, and restored so that components can play their role in the functioning of aquatic ecosystems.

1. Pressures on ecosystem productivity are managed

- a. Fishing pressures on ecosystem productivity are managed
 - i. Fishing mortality is limited to levels necessary to promote sustainability
 - ii. Sufficient escapement from exploitation for spawning
 - Target limit escapement
- b. Other pressures on ecosystem productivity are managed
 - i. Fish mortality from works, undertakings, and activities other than fishing is avoided, mitigated and/or offset
 - ii. Activities causing disturbance in areas or seasons of high importance (or critical) for species' life-history functions are limited, such as in spawning areas, juvenile or nursery habitats
 - iii. Alteration of nutrient concentrations affecting primary production is controlled
 - iv. Ensure that aquaculture operators meet environmental protection standards, such as Adhere to Aquaculture Activities Regulations (AARs)
 - Nutrient concentrations are managed within “X” standards
 - BOD (Biological oxygen demand) is managed within “X” standards

2. Ecosystem structure and functioning are promoted and conserved

- a. Ecosystem structure is promoted and conserved
 - i. Impacts on the top of the food web are limited
 - Manage anthropogenic pressures on top predators
 - ii. Impacts on forage species are limited
 - Ensure sufficient forage base for predators
 - iii. Impacts on trophic guilds and trophic structure are limited
 - Ensure sufficient biomass of each trophic guild
 - Limit impacts on structural change
 - iv. Impacts on the size structure are limited
 - Ensure broad size distribution of species in the ecological community

- Ensure broad size distribution within individual species
- b. Ecosystem functioning is promoted and conserved
 - i. Activities that could impact ecosystem functioning in areas of high aggregations or areas of high ecological importance are limited
 - Features that contribute to ecosystem functioning, such as riparian zones and cold water upwelling areas, are protected
 - ii. Areas of importance for bioturbation are protected

B. Biodiversity: Biodiversity is conserved, maintained, and restored to preserve the structure and natural resilience of aquatic ecosystems.

1. Population biodiversity is conserved and promoted or enhanced

- a. Population structure is preserved
 - i. Population component mortality is distributed in relation to component biomass
 - ii. Genetic structure is represented within regional conservation areas
 - iii. Ecological and genetic harm associated with stock enhancement on wild populations is minimized
 - iv. Aquaculture escapees and their impact are minimized

2. Species biodiversity is conserved and protected

- a. Unintended or incidental mortality for all species is controlled
 - i. Oceans and coastal area protection are increased (to 30% by 2030)
 - ii. Freshwater area protection measures that contribute to international, national and provincial targets for freshwater conservation are increased
 - iii. Seasonal and other fisheries closures are maintained and enhanced
 - iv. By-catch in fishing gear is minimized
 - Specific targets for bycatch
- b. Negative impacts of invasive species and non-indigenous species are minimized
 - i. Respond to newly detected invasive and non-indigenous species
 - ii. Established populations of invasive species and non-indigenous species are managed and controlled
- c. Introduction and proliferation of disease/pathogens are controlled
- d. Rebuilding plans for depleted species are developed

3. Functional biodiversity is conserved and promoted

- a. Sufficient representation of all functional biodiversity groups is maintained, such as biomass of planktivores, biomass of piscivores, etc

4. Ecosystem resilience is conserved and promoted

- a. Sufficient abundance of long-lived, larger species in aquatic ecosystems is conserved and promoted
- b. Genetic diversity and adaptive variation within the planning region are conserved and promoted.
- c. Climate refugia are protected

- d. Natural areas are protected

5. Diversity of ecosystem and habitat types is conserved and promoted - See C. 1 and 2

C. Habitat: Habitat and habitat features, including the chemical, biological, physical, and ecological integrity of aquatic ecosystems, are conserved, protected, maintained, and restored.

1. Habitat required for all species, particularly priority species, is maintained and protected

- a. Area of disturbed habitat is minimized
- b. Disturbance of early life-history stage habitat is minimized
- c. Critical habitat for species at risk is protected from destruction
- d. Important areas for connectivity are maintained such as:
 - i. Corridors (e.g., areas of aggregate species movement)
 - ii. Intermediate habitat between conservation areas (e.g., stepping stones closures)
 - iii. Linkages between spawning and settlement areas
- e. Rare, unique and vulnerable habitats are protected
 - i. Disturbance of the habitats is minimized, including :
 - Corals
 - Sponges
 - Sensitive benthic areas
 - Coastal biogenic habitat forming species (e.g., eel grass, kelp, macrophytes, saltmarsh, freshwater wetlands)
- f. Introduction of Aquatic Invasive Species (AIS) is prevented
- g. Climate refugia are protected
- h. Biogenic habitats and/or carbon sinks are maintained or enhanced
 - i. Biogenic habitats are protected and restored
 - ii. Carbon sinks are protected and restored
- i. Riparian zone management is enhanced
- j. Riparian buffers are protected
- k. Representative examples of habitat types are protected
 - i. Full variety of coarse-filter habitat classifications (including coastline classifications, geomorphic units, and oceanographic units) are protected.
 - ii. Representative protections are repeated at least twice per coarse-filter classification

2. Fish habitat that has been degraded is restored, including,

- a. Fish passage
- b. Climate refugia
- c. Flows
- d. Riparian habitat
- e. Stream characteristics
- f. Eelgrass
- g. Salt marsh
- h. Reef structure installation

- i. Ghost gear removal

3. Pollution is prevented and reduced

- a. Vessel sewage, garbage and other debris are disposed of appropriately (as per Transport Canada policies, *Canada Shipping Act (2001)*, CEPA)
 - i. Efforts to remove debris and garbage from aquatic systems, such as the Marine Debris Stakeholder Action Committee in Southwest New Brunswick, are supported
- b. Ghost fishing by lost fishing gear is reduced and lost fishing gear is recovered
- c. The introduction of toxic substances is prevented and reduced (as per requirements under, for example, SARA, future ESA regulations, or Aquaculture Regulations).
- d. Anthropogenic sound levels in aquatic systems are controlled and minimized
 - i. Negative impacts from anthropogenic sound levels on fish species and aquatic species at risk are avoided, mitigated or offset
 - ii. Anthropogenic sound added to aquatic systems by current and proposed activities is avoided, mitigated or offset
- e. Anthropogenic light levels in aquatic systems are controlled and minimized
 - i. Negative impacts from anthropogenic light levels on aquatic environments, fish species and aquatic species at risk are avoided
 - ii. Anthropogenic light added to aquatic systems by current and proposed activities is evaluated and assessed

Table 3 – Economic Pillar

Economic Pillar

- A. Economic Efficiency
 - B. Economic Sustainability
 - C. Economic Equity
-

NOTES

All Users includes:

- Canadians
- Canadian communities (including Indigenous, regional, provincial, and local communities)
- Industries (large, medium and small)
- GBA+ users
- Other users

All Uses includes:

- Indigenous Treaty based rights fisheries (FSC, moderate livelihood, communal/commercial)
- Recreational Fishing
- Commercial Fishing (small-scale, large-scale and industrial fishing)
- Other fishing
- Aquaculture
- Tourism
- Offshore Wind
- Oil and Gas
- Other Uses and Activities

A. Economic Efficiency: Aquatic activities and resources are governed and managed to enhance economic outputs and benefits for all users

1. **Economic opportunities, outputs and benefits are enhanced for all users where possible, including:**
 - a. Economic output
 - b. Economic growth
 - c. Employment
 - d. Incomes
 - e. Prosperity and profit
 - f. Livelihoods
2. **Economic opportunities and benefits for communities, industries and other users are enhanced**
 - a. Economic opportunities and benefits for Indigenous Communities are promoted

- i. Recognize and support Indigenous rights
- ii. Recognize and support Indigenous-based “economic” viewpoints
- b. Economic opportunities and benefits for Communities are promoted
- c. Economic opportunities and benefits for Industry are promoted
- d. Economic opportunities and benefits for recreational and other users and uses are promoted
- 3. Other types of values related to economic efficiency are included in decision making**
 - a. Indigenous Values
 - b. Bequest Value
 - c. Existence Value
 - d. Altruistic Value
 - e. Cultural Value

B. Economic Sustainability: Aquatic activities and resources are governed and managed to foster long term, viable, prosperous and sustainable livelihoods for all users and uses

- 1. Sustainable economic prosperity for all users**
 - a. Promote economic prosperity
 - i. Promote economic diversification
 - ii. Ensure the maximum long-term value of the resource
 - b. Support Income generation and intergenerational financial security
 - c. Regional economic benefits are fostered
- 2. Strong, viable and economically sustainable community, industry and other uses are achieved**
 - a. Support economic sustainability and viability for Indigenous communities
 - i. Recognize Indigenous-based “economic” viewpoints
 - b. Support economic sustainability and viability for regional and coastal communities
 - c. Support industrial economic sustainability and viability
 - i. Support market development
 - ii. Support the long-term independence of the commercial inshore fishery
 - d. Promote the sustainable growth of aquatic and non-aquatic related business and industries.
- 3. Support sustainable livelihoods**
 - a. Support employment opportunities
 - i. Support occupational pluralism

C. Economic Equity: Aquatic activities and resources are governed and managed to promote an equitable distribution of economic opportunities across all users_and uses (or activities)

- 1. An equitable distribution of opportunities for access and benefits across all individual users and uses is achieved**
 - a. An equitable distribution of access is promoted
 - i. Access to resources

- ii. Access to markets
- iii. Access to other uses
- b. An equitable distribution of benefits is promoted
 - i. An equitable distribution of income is promoted
 - ii. An equitable distribution of employment opportunities is promoted
 - iii. Equitable regional economic benefits are fostered
- c. An equitable distribution of use is achieved across all users
 - i. Promote a balanced distribution between and within commercial and non-commercial, use and non-use activities
- d. An equitable distribution of costs for all users and uses (or activities) is achieved
- e. Foster a balanced distribution of opportunities across generations

2. An equitable distribution of opportunities across communities, industries and other users and uses is achieved

- a. An equitable distribution of opportunities for Indigenous communities is promoted
 - i. The incorporation of indigenous-based equity principals is supported
 - ii. Rights based opportunities are supported
 - iii. FSC opportunities are supported
 - iv. Values of Indigenous local stewardship are promoted when access decisions are made
- b. An equitable distribution of opportunities for regional/coastal communities is fostered
- c. An equitable distribution of opportunities for Industry is fostered
- d. An equitable distribution of opportunities for other users and uses (or activities) is fostered

Table 4 - Social and Cultural Pillar

Social and Cultural Pillar

- A. Sustainable Communities
 - B. Health and Well-being
 - C. Ethical and Just Activities
 - D. Culture
-

A. Sustainable Communities: Thriving communities are supported over the long term through the governance and management of aquatic activities.

1 Community sustainability is enhanced for current and future generations to thrive

- a. Shared prosperity and self-sufficiency are promoted
 - i. Contribute to development of social capital to invest in the betterment of current and future generations
- b. Equitable access to services, resources and opportunities (e.g., access to aquatic systems for recreation) is promoted
- c. Long-term livability through sustaining healthy aquatic systems (e.g., clean shores, clean air) is promoted (link to Ecological Pillar)
- d. Connectedness and sense of place are promoted, including through stewardship of aquatic systems.
- e. *See B. 2*

2 Community resilience is supported

- a. Desired demographic attributes of the community (e.g., broad age range, population growth, good levels of literacy and education) are sustained or promoted
- b. Social networks and collaborative organizations are sustained or promoted
- c. Multiple activities and occupations, and desirable alternative livelihoods are sustained or promoted
- d. Infrastructure, such as harbours and wharfs, is developed and maintained

3 Community well-being is enhanced- *See B.2*

B. Health and Well-being: The health and well-being of individuals, households and communities are fostered through the governance and management of aquatic activities

1 Health and physical welfare are fostered

- a. Links between aquatic system health and human health are recognized and considered
- b. Occupational health and safety is promoted

- i. Aquatic resource management programs and policies with considerations for occupational health and safety are aligned
 - A culture of safety among fish harvesters is promoted
 - Fishing facilities, equipment and fisheries activities are safe
- ii. Decent employment and working conditions are supported
- iii. Social and health services for Indigenous Peoples, stakeholders and communities are promoted and accessible
- c. Food security and food safety are promoted
 - i. Secure and equitable access to local seafood is maintained
 - ii. Nutritional value, quality, and safety of seafood are maintained

2 The well-being of individuals, households and communities related to aquatic systems is fostered

- a. Material well-being is fostered
 - i. Income equality is promoted
 - ii. Economic opportunities for youth and adults are fostered, including through
 - Access to gainful employment in aquatic industries
 - Opportunities to participate in training and learning
 - Access to traditional livelihoods
 - iii. New economic opportunities are promoted
- b. Subjective well-being is fostered
 - i. Good quality and satisfaction of life are achieved
 - ii. Access to aquatic systems for enjoyment, health, and relationships is available and maintained
- c. Relational well-being is fostered
 - i. Desirable relationships, such as those with the environment and fellow community members, are maintained and pursued:
 - in the absence of violence, racism or other forms of discrimination
 - within the context of ongoing conflict resolution
 - ii. A sense of membership, inclusivity and cohesion through social trust, reciprocal relationships, and civic engagement is fostered

C. Ethical and Just Activities: Historic inequities and injustices are acknowledged, and all aquatic activities are undertaken in a respectful, ethical and just manner, including the consideration of Reconciliation with Indigenous Peoples and Gender Based Analysis (GBA) +

1 Just and equitable aquatic activities are fostered

- a. Recognitional equity is promoted
 - i. Human rights are recognized and respected
 - ii. Customary resource rights are recognized
 - iii. The rights of Indigenous Peoples to self-determination are recognized - *See Governance A. 1*
 - iv. Diverse identities, values, knowledge systems, and institutions are recognized
- b. Procedural equity is promoted - *Also see Governance Pillar, B1*

- i. Full and effective participation of all relevant parties in decision making is enabled
- ii. Responsibilities of all relevant parties are clearly defined and agreed upon
- iii. Accountability for actions and inactions is fostered
- iv. Effective dispute-resolution processes are provided and accessible
- v. Management transparency is fostered
- c. Distributional equity is promoted – *Also see Economic Pillar, C. Economic Equity*
 - i. All relevant parties have equitable access to and benefit from aquatic activities
 - ii. Benefits to the current generation do not compromise benefits to future generations
 - iii. Negative impacts for Indigenous Peoples and local communities are avoided and minimized

2 Ethical treatment of aquatic species is promoted

- a. Ethical treatment of animals is promoted
- b. Negative impacts of human activities on aquatic life are minimized- *See Ecological Pillar*

D. Culture: Significant, diverse, historical and living aspects of heritage and culture related to aquatic systems are recognized and considered in governance and management.

1. History and heritage are recognized and respected

- a. Intangible cultural assets, such as worldviews, knowledge, identities, and relationships produced through time are considered
- b. Tangible historical cultural assets, such as artifacts, buildings, places, events, objects, language and art, are considered

2. Culture is recognized and respected as alive and dynamic

- a. Tangible and intangible cultural assets are considered
- b. Cultural activities, such as fishing and marine plant harvesting, are considered
- c. Cultural relationships, including human-nature interactions, worldviews, ways of life and stewardship, are considered

3. Indigenous Peoples' right to practice and revitalize their cultural traditions and customs is recognized and respected through the following- *Also see Governance Pillar; C. 1.a*

- a. Languages and dialects
- b. Food, social and ceremonial (FSC) fisheries
- c. Spirituality and values associated with interconnections with flora and fauna, such as culturally significant species and sacred land
- d. Ceremonies and rituals, such as powwows and smudging
- e. Traditional medicines and Indigenous health practices
- f. Fundamental treaty education

Appendix 1 – Maritimes Region Ecosystem-Based Management (EBM) Working Group Members, past and present

Current Members:	Sector	Group
Sophie Pitre-Arsenault	Policy & Economics	Indigenous Relations and Partnerships (IRP) Hub
Alida Bundy (co-Chair)	Science	Ocean Ecosystem Science Division
Sue Dobson (co-Chair)	Policy & Economics	Indigenous Relations and Partnerships (IRP) Hub
Aimee Gromack	Aquatic Ecosystems	Integrated Planning,
Katie Hastings	Aquatic Ecosystems	Species at Risk,
Mark Labelle	Fisheries Management	Conservation & Protection
Cory Large	Policy & Economics	Economic Research division
Sheila Prall-Dillman	Policy & Economics	Partnership Hub
Suzette Soomai	Fisheries Management	Resource Management
Jamie Tam	Science	Ocean Ecosystem Science Division
Christa Waters	Fisheries Management	Resource Management
Tana Worcester	Science	Strategic Science Planning and Program Integrity
Co-Champions		
Francine Desharnais	Regional Director, Science	
Wendy Williams	Regional Director, Aquatic Ecosystems	

Past members:	Sector	Group
Heidi Schaeffer	Aquatic Ecosystems	Species at Risk
Robert Stephenson	Science, St. Andrews Biological Station	Population Ecology Division
Maxine Westhead	Aquatic Ecosystems	Marine Planning and Conservation

Appendix 2 – Maritimes Region EBM Framework Task Group Membership

Governance Task Group

NAME	AFFILIATION
Alexander, Steven	Science, DFO, Ottawa
Armitage, Derek	Social Scientist, University of Waterloo
Bailey, Megan	Social Scientist, Dalhousie University
Bundy, Alida	Science, DFO, Maritimes Region
Charles, Tony	Social Scientist, St Mary's University
Compton, Karen	Fisheries Management, DFO, Maritimes Region
Eger, Sondra ¹	Science, DFO, Maritimes Region
Hughes, Bronwen	Fisheries Management, DFO, Maritimes Region
Prall-Dillman, Sheila	Policy and Economics, DFO, Maritimes Region
Soomai, Suzette	Fisheries Management, DFO, Maritimes Region
Stephenson, Robert ²	Science, DFO, Maritimes Region
Stewart, Ian	Social Scientist, University of King's College
Thompson, Catherine ³	Aquatic Ecosystems, DFO, Maritimes Region
Weber, Lindsey	Policy and Economics, DFO, Maritimes Region

¹ now with Marine Planning and Conservation, DFO, Ottawa

² now retired

³ now with North Atlantic Fisheries Organisation, Dartmouth

Ecological Task Group

NAME	AFFILIATION
Breeze, Heather ¹	Aquatic Ecosystems, DFO, Maritimes Region
Bundy, Alida	Science, DFO, Maritimes Region
Gromack, Aimee	Aquatic Ecosystems, DFO, Maritimes Region
King, Marty	Aquatic Ecosystems, DFO, Maritimes Region
Kingsbury, Sarah	Aquatic Ecosystems, DFO, Maritimes Region
Krumhansl, Kira	Aquatic Ecosystems, DFO, Maritimes Region
Schaefer, Heidi	Aquatic Ecosystems, DFO, Maritimes Region
Soomai, Suzette	Fisheries Management, DFO, Maritimes Region
Stanley, Ryan	Science, DFO, Maritimes Region
Stephenson, Robert ²	Science, DFO, Maritimes Region
Stortini, Christine	Science, DFO, Maritimes Region
Tuziak, Sarah	Aquatic Ecosystems, DFO, Maritimes Region
Worcester, Tana	Science, DFO, Maritimes Region

¹ now with NRCAN

² now retired

Economic Task Group

Members of the Economic Research Division, Policy and Economics, Maritimes Region

Social and Cultural Task Group

NAME	AFFILIATION
Alexander, Steven	Science, DFO, Ottawa
Andrews, Evan	Social Scientist, Memorial University
Bannister, Jerry	Social Scientist, Dalhousie University
Blythe, Jessica	Social Scientist, Brock University
Bundy, Alida	Science, DFO, Maritimes Region
Campbell-Miller, Jill ¹	Science, DFO, Maritimes Region
Eger, Sondra ²	Science, DFO, Maritimes Region
Mather, Charlie	Social Scientist, Memorial University
Nagel, Elizabeth	Aquatic Ecosystems, DFO, Maritimes Region
Parlee, Courtenay ³	Science, DFO, Maritimes Region
Soomai, Suzette	Fisheries Management, DFO, Maritimes Region
Stephenson, Robert ⁴	Science, DFO, Maritimes Region
Stewart, Ian	Social Scientist, University of King's College

¹ now with Nova Scotia Provincial Government

² now with Marine Planning and Conservation, DFO, Ottawa

³ now with Domestic Fisheries Policy, DFO, Ottawa

⁴ now retired

Appendix 3 – Governance Pillar Narrative

Governance Pillar Narrative

A. Legal Obligations and other Commitments

[1. Legal obligations and commitments to Indigenous Peoples are recognized and implemented](#)

[2. National legal obligations and commitments related to aquatic systems are recognized and implemented.](#)

[3. International legal obligations and commitments related to aquatic systems are recognized and implemented.](#)

[4. Effective action on climate change is taken](#)

B. Governance Structures and Processes

[1. Procedural equity is promoted](#)

[2. Appropriate collaborative and inclusive governance structures are in place and inform a consistent, uniform approach to DFO decision making and integrated management.](#)

[3. Appropriate structures or mechanisms to address conflicts are in place](#)

[4. Multiple types of knowledge and information and sources are considered and included](#)

[5. Sufficient funding/resource base to facilitate capacity building and meaningful participation in appropriate governance structures is available and accessible](#)

C. Governance Outcomes

[1. Decisions are equitable, fair, and just](#)

[2. Decisions are consistent and transparent - See B. 1 d.](#)

[3. Decisions are evidence-informed - See B. 4](#)

[4. Decisions uphold the Crown's fiduciary responsibilities to Indigenous peoples](#)

[5. Decisions serve the public interest](#)

Introduction

Governance is the general context for implementing Ecosystem Based Management (EBM), it lays down the ground rules for the Framework and is one of the pillars within the DFO Maritimes EBM Framework. Further, the Governance Pillar is overarching and therefore influences the other three pillars, for example through governance principles such as accountability, equity, transparency, etc. (Eger et al., 2021a; Lockwood et al., 2010; Long et al., 2015). Governance refers to the set of structures (i.e., formal and informal) and processes through which human actors make decisions that influence actions and outcomes. It is a pillar, because there are

specific governance (and institutional) objectives that need to be considered alongside the objectives of the other pillars. As a pillar, Governance lays down the ground rules for the Framework: it identifies legal frameworks for decision making, outlines objectives for good governance process and provides objectives to assess whether this has indeed taken place. Within the scope of the Framework governance is considered to be the shared, collective effort of government, Indigenous Peoples, private business, and others (e.g., civic organizations, communities, political parties, universities, the media and general public) to reach end goals. There are diverse types of governance arrangements (e.g., from ministerial discretion or Indigenous governance through collaborative arrangements to delegated responsibilities).

The Governance Pillar was co-developed by the Governance task group that included social scientists with governance expertise from several Canadian Universities, and DFO staff from across Aquatic Ecosystems, Fisheries Management and Science. It also includes recommendations from Dr Shelley Denny and further discussed at the second APC led EBM workshop. These were based on research conducted as part of the project with the Atlantic Policy Congress of First Nations Chiefs Secretariat (APC) titled: Indigenous concepts, values, objectives and knowledge and the Maritimes Ecosystem-Based Management (EBM) Framework: an opportunity for Etuaptmumk? (See Appendix 2 and 4, and the APC EBM reports for further details⁴⁸). Throughout, the Maritimes EBM Working Group (Appendix 1) was consulted and engaged to ensure that the Governance Pillar would be relevant to all DFO Sectors. (Appendix 2, 4). Examples of policy statements supporting governance are provided Text Box Governance 1.

As one of the four pillars of the framework, some aspects of ‘governance’ are clearly stated as specific objectives, or as political imperatives, that need to be included explicitly in all (most) management planning. When objectives were framed, “ensure” was only used when the objective is achievable within the mandate of DFO. However, many aspects of the framework may not be within the scope of DFO to implement, and further, it is important to recognize the various scales of actions and decisions of staff and practitioners compared to the ultimate decisions are being made by a political process (i.e., the Minister).

Main Objectives in the previous (2020) draft EBM Framework (Bundy et al., 2021) included: Legal Obligations, including to Indigenous Peoples; Good governance structure; and Effective decision-making process.

While it is recognized that there is fluidity and overlap among these aspects, the structure of the current pillars has been further unpacked and articulated and now includes the following three Main Objectives:

- 1) Legal Obligations and Other Commitments
- 2) Governance Structure and Processes and
- 3) Governance Outcomes.

⁴⁸ All reports will be available on the APC website: <https://www.apcfn.ca/>

Text Box Governance 1: Policy Support for the Governance Pillar includes:

Oceans Act (Government of Canada, 1996): “and WHEREAS the Minister of Fisheries and Oceans, in collaboration with other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements, is encouraging the development and implementation of a national strategy for the management of estuarine, coastal and marine ecosystems” (Preamble).

An Integrated Aboriginal Policy Framework (Fisheries and Oceans Canada, 2007): “This framework recognizes that DFO’s core mandate has broadened considerably since earlier SCC [Supreme Court of Canada] decisions such as Sparrow and Marshall and now includes new ecosystem-based management responsibilities under the Oceans Act, expansion of its presence in inland habitat management, *Species at Risk Act* (SARA) implementation, an aquaculture framework, and an increasingly sophisticated approach to science” (p.1).

*DFO MPA Guiding Principles** (Fisheries and Oceans Canada, 2018) include:

- Integrated management;
- Ecosystem-based management approach;
- Adaptive management approach;
- Precautionary Principle;
- Flexible Management Approach.

*DFO-CCG Reconciliation Strategy**; Commitment* (Fisheries and Oceans Canada, 2019): “Recognize and implement Indigenous and treaty rights related to fisheries, oceans, aquatic habitat, and marine waterways in a manner consistent with section 35 of the Constitution Act, 1982, the United Nations Declaration on the Rights of Indigenous Peoples, and the federal Principles Respecting the Government of Canada’s Relationship with Indigenous Peoples”

Canada’s Oceans Strategy: Policy and operational framework for integrated management of estuarine, coastal and marine (Fisheries and Oceans Canada, 2002a): “The Canadian approach to Integrated Management recognizes that management objectives and planning practices must reflect that ecosystems nest within other ecosystems. As a result, the governance model proposed for Integrated Management is one of collaboration. It involves ocean management decisions based on shared information, on consultation with stakeholders, and on their advisory or management participation in the planning process. It is also based on institutional arrangements that bring together all stakeholders. Participants take an active part in designing, implementing and monitoring the effectiveness of coastal and ocean management plans, and partners enter into agreements on oceans management plans with specific responsibilities, powers and obligations.”(p.iii)

International

Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (FAO, 2015): Guiding Principles, 6. Consultation and participation: “ensuring active, free, effective, meaningful and informed participation of small-scale fishing communities, including indigenous peoples, taking into account the UN Declaration on the Rights of Indigenous Peoples (UNDRIP, United Nations, 2022) in the whole decision-making process related to fishery resources and areas where small- scale fisheries operate as well as adjacent land areas, and taking existing power imbalances between different parties into consideration.” (p.3)

* <https://www.dfo-mpo.gc.ca/oceans/networks-reseaux/principles-principes-eng.html>

** <https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/40947208.pdf>

A. Legal Obligations and other Commitments: Legal obligations and other commitments related to aquatic systems, including to Indigenous Peoples, are recognised and implemented in governance and management

Legal obligations and commitments represent formal governance mechanisms that are underpinned by values, norms, and principles, and influence how humans interact with the environment as well as each other (Lemos and Agrawal, 2006; Chuenpagdee and Jentoft, 2009; Kooiman and Jentoft, 2009). A spectrum of obligations and commitments are recognized in this section, including to Indigenous Peoples, federal Policy and international commitments relevant to the sustainable management of aquatic systems. Such legal obligations and commitments come in the form of Treaty Rights, laws, policies, case law and non-binding agreements. See examples in Text Box Governance 2.

Four Level 1 Objectives were developed and further articulated, the first recognizes and implements legal obligations and commitments to Indigenous Peoples, the second at the national scale, the third at the international scale and fourth, asserts that effective action on climate change is taken.

Canada's commitments and responsibilities towards Indigenous Peoples go beyond the legal obligations and are embedded within each of the three Main Objectives of the Governance Pillar and therefore have implications for the entire Framework. The two Level 1 Objectives in this section only represent existing colonial legal structures relevant to DFO. Additional objectives related to values and worldviews of Indigenous Peoples are expected from the ongoing collaboration with the Atlantic Policy Congress.

1. Legal obligations and commitments to Indigenous Peoples are recognised and implemented

A notable legal responsibility of all Government of Canada departments/sectors is with Indigenous Peoples. In particular, the Government of Canada is committed to Reconciliation with Indigenous Peoples and has reaffirmed it as a priority in several legal and other forms including Section 35 of the *Constitution Act* of 1982, the *United Nations Declaration on the Rights of Indigenous Peoples Act* (UNDA, Government of Canada, 2021), and the DFO Coast Guard Reconciliation Strategy (Fisheries and Oceans Canada, 2019). For example, the Framework supports the three long-term objectives of the DFO-CCG Reconciliation Strategy:

- Strengthened Indigenous-Crown Relationship
- Recognized Self-Determination
- Reduced Socio-Economic Gaps

It also supports the five main actions areas of the DFO-CCG Reconciliation Strategy (Fisheries and Oceans Canada, 2019):

- Enhance internal capacity to deliver on reconciliation,
- Transform laws and policies,
- Negotiate treaties and non-treaty agreements,

- Build decision-making and collaborative management processes, and
- Enhance economic opportunities and capacity

With the international influence from United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and *UNDA*, and Federal efforts to enhance reconciliation between Indigenous Peoples and Canada, there is active work in these areas across DFO and other departments to build on duty to consult and accommodation and to move towards Free Prior and Informed Consent (FPIC) and self-determination. DFO recognizes the constitutionally protected Aboriginal (Indigenous) right to fish for food, social and ceremonial purposes and the Treaty rights to fish in pursuit of a moderate livelihood (Treaty-based fisheries), as affirmed by the Supreme Court of Canada in its *Sparrow* (1990) and *Marshall* (1999) landmark decisions (Denny and Fanning, 2024).

2. National legal obligations and commitments related to aquatic systems are recognized and implemented.

The four Level 2 Objectives are focused on existing national scale legislation, regulations and common law and include the precautionary approach and sustainable development principles. For instance, the main Acts influencing DFO are the *Fisheries Act* (1985a), the *Oceans Act* (1996), the *Species at Risk Act* (2002), and *Canada Shipping Act* (2001). A number of other overarching policies and/or policies led by other Government of Canada departments have implications for DFO as well. For example, "Fisheries and Oceans Canada supports the goals laid out in the Federal Sustainable Development Strategy⁴⁹ through the activities described in this Departmental Sustainable Development Strategy" (Fisheries and Oceans Canada, 2020).

3. International legal obligations and commitments related to aquatic systems are recognized and implemented.

Included in the single Level 2 Objective are international agreements and commitments to which Canada is a signatory and that must be incorporated into domestic legislation before they have direct legal effect in Canada. These include the Convention on the Law of the Sea (UNCLOS) (United Nations, 1982), Kunming-Montreal Global Biodiversity Framework (United Nations, 2022), Convention on Biological Diversity (1992), Charlevoix Blueprint for Healthy Oceans, Seas and Resilient Coastal Communities (G7 Charlevoix Blueprint, 2018), Ocean Plastics Charter⁵⁰, and other commitments such as those led by the United Nations. Consideration of recent agreements provides a signal of the anticipated direction of policy development in Canada.

4. Effective action on climate change is taken

Climate change is a current priority of the Department and intersects across many of the objectives. Driving policy for climate change objectives include the recent National Adaptation

⁴⁹ <https://www.canada.ca/en/environment-climate-change/services/climate-change/federal-sustainable-development-strategy.html>

⁵⁰ <https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/international-commitments/ocean-plastics-charter.html>

Strategy (ECCC, 2023) that provides a vision and roadmap to help communities prepare and adapt for the impacts of climate change in five systems: Disaster Resilience; Health and Wellbeing; Nature and Biodiversity; Infrastructure; and Economy and Workers.

The 'Legal and Other Obligations' relating to climate change are captured in two Level 2 Objectives and inherently overlap with existing objectives across pillars, which highlights the interconnectedness and need for a holistic approach. In particular, that climate change trends and projected impacts inform decisions related to the following management areas:

- Fisheries
- Oceans and coastal infrastructure management
- Species conservation
- Marine safety
- Emissions are reduced in Government, commercial and recreational sectors

Additionally, both adaptation and mitigation planning are considered and supported such as emissions, carbon sequestration and adaptation strategies that increase the resilience of climate change impacts.

Text Box Governance 2: Policy Support for Legal Obligations and Other Commitments

The United Nations Declaration on the Rights of Indigenous Peoples Act (UNDA, Government of Canada, 2021):

- *Preamble:* “Whereas, in its document entitled Calls to Action, the Truth and Reconciliation Commission of Canada calls upon federal, provincial, territorial and municipal governments to fully adopt and implement the Declaration as the framework for reconciliation, and the Government of Canada is committed to responding to those Calls to Action”
- *Preamble:* “Whereas the Government of Canada recognizes that all relations with Indigenous peoples must be based on the recognition and implementation of the inherent right to self-determination, including the right of self-government.”
- *s.4* “The purposes of this Act are to: (a) affirm the Declaration as a universal international human rights instrument with application in Canadian law; and (b) provide a framework for the Government of Canada’s implementation of the Declaration”

DFO-CG Reconciliation Strategy (Fisheries and Oceans Canada, 2019a); Long-term Objectives: Recognized Self-determination: “Indigenous groups effectively manage their own fisheries and other marine assets in their territories. Indigenous groups share in fisheries, oceans, aquatic habitat, and marine waterways decision-making.”

The Fisheries Act (Government of Canada, 1985a); Section 2.4: “When making decisions under this Act, the Minister shall consider any adverse effects that the decisions may have on the rights of the Indigenous peoples of Canada recognized and affirmed by section 35 of the Constitution Act (1982).”

Species-at-Risk Act (Government of Canada, 2002), preamble: “.....responsibility for the conservation of wildlife in Canada is shared among the governments in this country and that it is important for them to work cooperatively to pursue the establishment of complementary legislation and programs for the protection and recovery of species at risk in Canada,”

Fish and Fish Habitat Protection Policy Statement (Fisheries and Oceans Canada, 2019b); Section 6.4: “The Government of Canada is committed to a renewed, nation-to-nation, Inuit-Crown and government-to-government relationship based upon the recognition of rights, respect, cooperation and partnership.”

Policy for Managing Impacts of Fishing on Sensitive Benthic Areas (Fisheries and Oceans Canada, 2009); Section 2.2: “The fishery is a common property resource to be managed for the benefit of all Canadians, consistent with conservation objectives, the constitutional protection afforded Aboriginal and treaty rights, and the relative contributions that various uses of the resource make to Canadian society, including socio-economic benefits to communities.”

Fisheries and Oceans Canada Departmental plan 2024-2025 (Fisheries and Oceans Canada, 2024): “Fisheries and Oceans Canada and the Canadian Coast Guard (DFO) is committed to making GBA Plus an integral part of its policies, programs, and initiatives to understand impacts and effects on diverse population groups in order to make better decisions and achieve better results for clients, stakeholders, and all Canadians.”

International

Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (FAO, 2015); Section 10.3: “States should adopt specific policy measures to ensure the harmonization of policies affecting the health of marine and inland waterbodies and ecosystems and to ensure that fisheries, agriculture and other natural-resource policies collectively enhance the interrelated livelihoods derived from these sectors.”

B. Governance Structures and Processes: Appropriate governance structures are in place to enable effective decision making related to aquatic systems

How obligations and commitments are carried out is conceptualized into structures and processes. Governance structures (e.g., policy instruments, organizational bodies and norms) shape the way people interact with each other. Governance also influences the ways people interact with the environment, also known as governance processes (Cortner et al., 1998; Angel et al., 2019). Governance (structure, processes and thus function) is based on principles of good governance, and modern principles of resource management, including accountability, transparency, legitimacy, strategic vision, inclusiveness, adaptation and performance evaluation. Many of these key principles are prevalent in DFO policies.

Traditionally, DFO and other governing bodies, have focused on siloed approaches to governance and management with different authorities responsible for different activities and there is now an increasing trend towards collaborative, shared, and de-centralized governance structures (Stephenson et al., 2019; Eger et al., 2021a). The Framework objectives within this pillar can be used for any type of situation or governance arrangement including, but are not limited to, collaborative, hierarchical, adaptive, transformational, interactive, or polycentric forms of governance. Other situations may involve Indigenous self-management, or will be managed by the government (e.g., ministerial authority of DFO). Text Box Governance 3 has select examples of relevant policy statements.

This section articulates the logic for the newly unpacked Level 1 Objectives and provides up-to-date guidance and information on the treatment and potential roles/involvement of participants in decision making. As a result, five Level 1 Objectives were reorganized from the previous version of the Framework: (1) Procedural equity is promoted, (2) Appropriate collaborative and inclusive governance structures are in place and inform a consistent, uniform approach to DFO decision making and integrated management and (3) Appropriate structures or mechanisms to address conflicts are in place, (4) Multiple types of knowledge and information and sources are considered and included and (5) Sufficient funding/resource base, to facilitate capacity building and meaningful participation in appropriate governance structures, is available and accessible.

1. Procedural equity is promoted

The EBM Framework adopts the term procedural equity as an important feature that helps ensure that the quality of decision-making structures and processes are fair and reasonable, and that rights holders and stakeholders are included in a meaningful and appropriate way (Morf et al., 2019; Bennett, 2019; Eger et al., 2021a,b). Further, the ability to participate effectively based on the individual capacities of groups, stakeholders and rights holders, is important, as stated in Canada's Impact Assessment Act "Whereas the Government of Canada recognizes the importance of public participation in the impact assessment process, including the planning phase, and is committed to providing Canadians with the opportunity to participate in that process and with the information they need in order to be able to participate in a meaningful way;" (Government of Canada, 2019a).

This Level 1 Objective is further unpacked into five Level 2 Objectives that feature common elements of procedural equity that include effective participation of relevant parties, that there is transparency and accountability within governance structures and processes, and that intergenerational impacts are considered. For instance in the *Policy Framework for the Management of Fisheries on Canada's Atlantic Coast*,

Fisheries management decision-making processes must be, and must be seen to be, fair, transparent and subject to clear and consistent rules and procedures.... Participants will be effectively involved in fisheries management decision-making processes at appropriate levels; they will contribute specialized knowledge and experience, and share in accountability for outcomes. (Fisheries and Oceans Canada, 2004)

Note that Procedural Equity is also an objective in the Social and Cultural Pillar, under C. Ethical and Just Activities, 1. Just and equitable aquatic activities are fostered.

2. Appropriate collaborative and inclusive governance structures are in place and inform a consistent, uniform approach to DFO decision making and integrated management.

DFO functions within a hierarchical polycentric governance system, therefore there is a need to be inclusive of a diversity of structures across various scales and parties. This includes the federal commitment made in the DFO-Coast Guard Reconciliation strategy to “Build Nation-to-nation, government-to-government relationships with Indigenous Peoples (Fisheries and Oceans Canada, 2019). It also includes internal, inter-regional, interdepartmental, intergovernmental and external collaborative governance structures. This is exemplified in the following statement from *the Regional Oceans Plan – Scotian Shelf, Atlantic Coast, Bay of Fundy*, “A ‘whole of DFO’ approach is important to ensure effective and coherent decision making” (Fisheries and Oceans Canada, 2014) as well as the **description** of Integrated management for collaboration from *Canadas Ocean Strategy* (2002, s.11):

- “ocean management decisions based on shared information, on consultation with stakeholders, and on their advisory or management participation in the planning process;
- institutional arrangements that bring together all governments, user groups and other interests also responsible for resource management, conservation and economic development;
- management systems in which governments, user groups and other interests take an active part in designing, implementing and monitoring the effectiveness of coastal and ocean management plans; and
- institutional arrangements in which governments, user groups and other interests enter into agreements on oceans management plans with specific responsibilities, powers and obligations.”

Key aspects of collaboration include sharing knowledge, for example “DFO supports a collaborative approach when addressing oceans and coastal issues in order to share resources and knowledge, seek advice and work together to advance common priorities” (DFO, 2014), and

responsibility and stewardship, “promoting community solidarity and collective and corporate responsibility and the fostering of an environment that promotes collaboration among stakeholders should be encouraged”, and one of the 12 principles in the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (FAO, 2015).

The six Level 2 Objectives in this section acknowledges the diversity of governance arrangements and structures that may potentially be appropriate in the governance and management of aquatic systems, from ministerial discretion to supporting Indigenous self-determination.

3. Appropriate structures or mechanisms to address conflicts are in place

Conflict resolution is a formal or informal feature of current management where two or more parties seek a peaceful solution to their dispute (Shonk, 2021). There is an absence of structure and processes to deal with conflict and tradeoffs among objectives and activities. This is a growing and emerging area of concern that’s being increasingly recognized (Parlee and Wiber, 2018). It is important that processes are available and accessible, that conflicts are addressed in a timely manner and that the mechanisms used are culturally relevant.

For example, the United Nations Declaration of Rights of Indigenous Peoples Action Plan (Government of Canada, 2023a) states:

19. Establish an independent Indigenous rights monitoring, oversight, recourse or remedy mechanism or mechanisms to provide Indigenous Peoples with access to and prompt decision through just and fair procedures for dispute and conflict resolution and effective remedies for infringements/violations of their individual and collective rights.

Three Level 2 Objectives capture the main areas relating to this important concept.

4. Multiple types of knowledge and information and sources are considered and included

The inclusion of diverse types and forms of knowledge in decision making is a growing area and captured in three Level 2 Objectives in this section. For example, in 2019, the Government of Canada passed the Indigenous Knowledge Policy Framework for Project Reviews and Regulatory Decisions (Government of Canada, 2019b) that requires Indigenous knowledge to be considered in project reviews and regulatory decisions relating to the *Impact Assessment Act* (Government of Canada, 2019a), the *Canadian Energy Regulator Act* (Government of Canada, 2019c), the *Fisheries Act* (Government of Canada, 1985a) and the *Canadian Navigable Waters Act* (Government of Canada, 1985b). Increasingly, DFO is recognizing that the best available knowledge needs to come from diverse sources including, but not limited to, social sciences, natural sciences, Indigenous knowledges and other ways of knowing.

Ongoing work by the Government of Canada under the *United Nations Declaration Act* (UNDA) (Government of Canada, 2021) and the *United Nations Declaration on the Rights of Indigenous Peoples Act Action Plan* (Government of Canada, 2023a) will guide how DFO staff collaborate with knowledge-holders.

For example, Bill C-23 (Government of Canada, 2022) acknowledges, “the Board must take into account the best available information in relation to the national historic significance or national interest of the place, person or event, including information from the following sources:

- (a) Indigenous knowledge of the Indigenous Peoples of Canada;
- (b) community knowledge; and (c) scientific and academic knowledge.”

The following examples are various knowledge types as acknowledged in *Canada’s Ocean Strategy: Our Future, Our Oceans* (2002):

“Integrated Management also embodies several other important principles, concepts and approaches, such as:

- integrated data collection, monitoring, research, synthesis, and information sharing, communication and education (the full range of relevant knowledge is applied to the planning process and decision-making process, including scientific studies and local and traditional knowledge) ...

Other key information sources include the federal marine fleets, the fishing industry, community knowledge, and the traditional ecological knowledge shared by Aboriginal peoples... The scientific knowledge required to make oceans management decisions encompasses both natural and social Dimensions.”

It is also important to ensure structures and processes are capable of adapting to changing knowledge and information. Additional considerations such as data sovereignty and/or intellectual property are also critical.

5. Sufficient funding/resource base, to facilitate capacity building and meaningful participation in appropriate governance structures, is available and accessible

Ensuring sufficient resources are available to support the effective participation of Indigenous rights holders and stakeholders in governance structures and processes is an ongoing challenge. Capacity of those who are participating as well as those responsible for carrying out the governance structure and processes is needed. For example, “The federal government is bridging the resource gap for communities of all sizes. Through the delivery of key funding and resources, the Government of Canada provides communities with the tools and resources necessary to lead local-level climate action by building their adaptive capacity and raising readiness for the implementation of long-term adaptation solutions.” (Government of Canada Adaptation Action Plan (Government of Canada, 2023b). Further, the UNDRIP Action plan (see Text Box Governance 3) supports funding for capacity building for Indigenous Peoples.

Two Level 2 Objectives, one related to rights holders and stakeholders and related to internal capacity, speak to various types of capacity building that may include training, skills, space, equipment, finances, etc.,

Text Box Governance 3: Policy Support for Governance Structures and Processes

Oceans Act (Government of Canada, 1996); Section 33(1)(a): "In exercising the powers and performing the duties and functions assigned to the Minister by this Act, the Minister (a) shall cooperate with other ministers, boards and agencies of the Government of Canada, with provincial and territorial governments and with affected aboriginal organizations, coastal communities and other persons and bodies, including those bodies established under land claims agreements"

Species At Risk Act (Government of Canada, 2002); Section 39(3): "To the extent possible, the recovery strategy must be prepared in consultation with any landowners and other persons whom the competent minister considers to be directly affected by the strategy, including the government of any other country in which the species is found." Similar comments can be found in Sections 48(3) and 66 (3).

UNDRIP Action Plan (Government of Canada, 2023a):

- *Section 19*: "Establish an independent Indigenous rights monitoring, oversight, recourse or remedy mechanism or mechanisms to provide Indigenous peoples with access to and prompt decision through just and fair procedures for dispute and conflict resolution and effective remedies for infringements/violations of their individual and collective rights."
- *Section 38*: "Provide predictable and flexible funding that will ensure Indigenous partners have the capacity to provide fisheries, habitat, science, and oceans and marine-related services. Provide predictable and flexible funding to ensure Indigenous nations and organizations have the capacity to meaningfully participate in advisory, co-management, and decision making processes tied to aquatic resources and oceans management."

Canada's Oceans Strategy: Our Oceans, Our Future (Fisheries and Oceans Canada, 2002b): "Canada's Oceans Strategy provides the basis for a new strategic management framework to involve all levels of government and interests to work on achieving common objectives" (p.7)

Canada's Oceans Strategy: Policy and Operational Framework for Integrated Management of Estuarine, Coastal and Marine Environments (Fisheries and Oceans Canada, 2002a); Section 3.1: "At the heart of Integrated Management is a commitment to citizen engagement in the broadest sense; that is governments at all levels, Aboriginal groups, corporate and sectoral interests, community interests, non-governmental organizations..." with the overall objective being "create governance mechanisms that foster greater involvement of the people most affected by decisions"

Federal Marine Protected Areas Strategy (Fisheries and Oceans Canada, 2005a); Objectives: "Integrated Management (IM) is a collaborative, flexible and transparent planning and management process. It recognizes the shared responsibility of governments, Aboriginal groups, coastal communities, industry and others to support the sustainability of our marine resources. Also embedded in the "IM" concept is the continued respect for the legislative mandates of individual departments and agencies."

Cabinet Directive on Regulations (Treasury Board of Canada Secretariat, 2024); 3.0 Guiding principles of federal regulatory policy: "The regulatory process is modern, open, and transparent: Regulations, and their related activities, are accessible and understandable, and are created, maintained, and reviewed in an open, transparent, and inclusive way that meaningfully engages the public and stakeholders, including Indigenous peoples, early on."

C. Governance Outcomes: Appropriate governance structures are in place to enable effective decision making related to aquatic systems

Canada strives to improve the effectiveness of decision structures, processes, and outcomes. Therefore, objectives for Governance Outcomes were developed to assess the effectiveness of the decisions that resulted from the various Governance Structures and Processes. In particular, the Government of Canada recognizes the principles of scientific advice for effective decision making, commonly referred to as the SAGE principles, which include inclusiveness, transparency, and openness (Government of Canada, 2000). DFO manages fisheries and other activities using credible, science-based, affordable and effective practices and aspires to evidence-informed (or evidence-based) generation of decision making and scientific advice. Decisions should be credible, relevant (salient), legitimate, based on the best available information, and transparent (e.g., Soomai, 2017; Fisheries and Oceans, 2022). Additionally, outcomes should reflect key governance principles (e.g., equity, accountability, democratic, collaborative). Another desirable outcome of decision making would be to improve the social license, i.e., to gain people's respect for the decision and decision-making system (Margeson et al., 2023). This Main Objective was previously called 'Effective decision-making processes' (Bundy et al., 2021), but was updated by the Governance task group to more concretely identify the outcomes of the decisions themselves rather than how the decisions were made.

An important aspect of decision making and its outcomes include the rationale for making the decision and the availability of this rationale. It is acknowledged that all parties should be able to access the rationale of a decision, however, this is of course subject to legislation and DFO policy governing DFO policy such as the Access to Information Act (Government of Canada, 1985c) (regarding protection of information and privacy. Other select policy statements are in Text Box Governance 4.

This section further unpacks the key elements of the outcomes of decision making through the following four Level 1 Objectives: (1) Decisions are equitable, fair, and just; (2) Decisions are consistent and transparent; (3) Decisions are evidence-informed; and (4) Decisions serve the public interest.

1. Decisions are equitable, fair, and just

The outcomes of decisions should be free from bias and should reflect the values and interests of all parties involved in the decision-making structures and processes, including Indigenous Peoples. Included in this is the notion that decisions should consider the long-term implications and intergenerational equity. For example, "Whereas Parliament recognizes that historic places are significant sources of pride and enjoyment and that it is in the public interest to protect and present them for present and future generations;" (Bill C-23, Government of Canada, 2022). Further, that Indigenous values and knowledge systems and governing principles should have been part of the decision-making process (UNDRIP Action Plan, see Text Box Governance 4).

These important elements are captured within three Level 2 Objectives in this section. *See also C.1 (Social and Cultural).*

2. Decisions are consistent and transparent - See B. 1 d.

Consistency and transparency are among governance principles that are critical to decision making. For example, SAGE principles include transparency or openness (Principle V, Government of Canada, 2000) and should be adopted/applied in a consistent way (Canada, 2000). Examples of further support for consistent and transparent decision making include:

- “The access and allocation of fisheries resources will be more stable and predictable, and decisions will be made and conflicts resolved through fair, transparent and rules-based processes.” (A Policy Framework for the Management of Fisheries on Canada’s Atlantic Coast, DFO, Government of Canada, 2004)
- “2 (1)(o) apply and enforce this Act in a fair, predictable and consistent manner.” (*Canadian Environmental Protection Act*, Government of Canada, 1999)

Due to the overlap with B. 1. D, there are no current Level 2 Objectives under this Level 1 Objective.

3. Decisions are evidence-informed - See B. 4

Evidence-informed, or evidence-based, decision making is “the process of distilling and disseminating the best available evidence [including knowledge and information] from research, practice and experience and using that evidence to inform and improve public health policy and practice”⁵¹. This important decision-making principle is often referred to in ministerial guidelines and mandate letters and captured here in one Level 2 Objective and has strong connections with B. 4.

Evidence can include multiple types of knowledge and ways of knowing, including but not limited to natural science, social science and humanities, Indigenous knowledge. Evidence may also take different forms such as written documents or oral histories. An important principle when making evidence informed decisions is the precautionary approach that “recognizes that the absence of full scientific certainty shall not be used as a reason for postponing decisions where there is a risk of serious or irreversible harm” (Government of Canada, 2003).

The following policy statements from Canadian and International policy documents support this objective:

Canada:

- “We will work to build that brighter future through continued collaboration, engagement, and the use of science and evidence-based decision-making”. Minister of

⁵¹ National Collaborating Centre for Methods and Tools, Canada - <https://www.nccmt.ca/tools/eiph> -

Fisheries, Oceans and the Canadian Coast Guard Mandate Letter, 202152)

- “The precautionary approach compels more care be taken where knowledge and scientific research has yet to provide sufficient certainty to decision-making.” (Fisheries and Oceans, 2005b)
- “A robust evidence base for adaptation is in place through development, stewarding and sharing of existing and new data, knowledge (including Indigenous Knowledge and local knowledge), environmental and socio-economic analyses, and other ways of knowing” (Canada’s National Adaptation Strategy, ECCC, 2023).

International:

- “The implementation of the framework should be based on scientific evidence and traditional knowledge and practices, recognizing the role of science, technology and innovation”(Kunming-Montreal Global Biodiversity Framework, United Nations, 2022).
- “The coastal State, taking into account the best scientific evidence available to it, shall ensure through proper conservation and management measures that the maintenance of the living resources in the exclusive economic zone is not endangered by over-exploitation.” (UNCLOS, United Nations, 1982, Article 61, Paragraph 2)

4. Decisions uphold the Crown’s fiduciary obligations and responsibilities to Indigenous peoples

Broadly speaking, a “fiduciary relationship” is one in which someone in a position of trust has “rights and powers which he is bound to exercise for the benefit” of another (Hurley, 2002, p. 2). Canadian law recognizes that the Crown has fiduciary responsibilities and obligations to Indigenous Peoples, originating in decisions by the Supreme Court of Canada in key cases beginning with *R. v. Guerin* (1984) and expanded by *R. v. Sparrow* (1990) among others (Morellato, Blake, Cassels & Graydon, 1999; Hurley 2002; Showalter 2025). This is reflected in Principles 3 and 7 of Canada’s “Principles respecting the Government of Canada's relationship with Indigenous peoples”, which speak to the importance of upholding Canada’s Crown’s fiduciary responsibilities to Indigenous peoples:

- Principle 3 includes the following: “The honour of the Crown gives rise to different legal duties in different circumstances, including fiduciary obligations and diligence. The overarching aim is to ensure that Indigenous peoples are treated with respect and as full partners in Confederation”
- Principle 7: “ The Government of Canada recognizes that respecting and implementing rights is essential and that any infringement of section 35 rights must by law meet a high threshold of justification which includes Indigenous perspectives and satisfies the Crown’s fiduciary obligations”

⁵² <https://www.pm.gc.ca/en/mandate-letters/2021/12/16/minister-fisheries-oceans-and-canadian-coast-guard-mandate-letter>

Canada's UNDA Action Plan (Government of Canada, 2023a) states that "Indigenous peoples can expect and trust that the Government of Canada will honourably fulfill all of its legislated (including under the UN Declaration Act), common law, fiduciary and constitutional obligations and responsibilities"(p. 29).

Therefore, governance outcomes should uphold the Crown's fiduciary obligations and responsibilities to Indigenous peoples

5. Decisions serve the public interest

An implicit and overarching duty is to serve the public interest through Canada's democratic decision making (*Values and Ethics Code for the Public Sector, Government of Canada, 2011*), Ministerial responsibilities). Public Interest is defined as "the welfare or well-being of the general public" (Collins Dictionary⁵³), i.e., decisions are made on behalf of everyone who is a member of the general public, including future generations, beyond stakeholders and rights holders who may be a part of governance processes. This responsibility spans current and future generations and therefore the single Level 2 Objective relates to intergenerational equity (Spijkers, 2018; Policy Horizons Canada, 2025).

The following examples are taken from Canadian Legislation:

"Regulations protect and advance the public interest and support good government: Regulations are justified by a clear rationale in terms of protecting the health, safety, security, social and economic well-being of Canadians, and the environment." (Cabinet Directive on Regulation, Treasury Board of Canada Secretariat, 2024)

Further, the *Impact Assessment Act* (Government of Canada, 2019b) has numerous references to 'public interest, including an entire section (s.63) explaining what public interest factors must be considered when making decisions to a designated project:

- a) " the extent to which the designated project contributes to sustainability;
- b) the extent to which the adverse effects within federal jurisdiction and the adverse direct or incidental effects that are indicated in the impact assessment report in respect of the designated project are significant;
- c) the implementation of the mitigation measures that the Minister or the Governor in Council, as the case may be, considers appropriate;
- d) the impact that the designated project may have on any Indigenous group and any adverse impact that the designated project may have on the rights of the Indigenous Peoples of Canada recognized and affirmed by section 35 of the *Constitution Act, 1982*; and
- e) the extent to which the effects of the designated project hinder or contribute to the Government of Canada's ability to meet its environmental obligations and its commitments in respect of climate change." (s. 63)

⁵³ <https://www.collinsdictionary.com/dictionary/english/public-interest> Accessed 13-08-2025

Text Box Governance 4: Policy Support for Governance Outcomes

Cabinet Directive on Regulation (Treasury Board of Canada Secretariat 2024); Section 3.0 Guiding Principles of federal regulatory policy:

1. Regulations protect and advance the public interest and support good government...
2. The regulatory process is modern, open and transparent...
3. Regulatory decision making is evidence based...
4. Regulations support a fair and competitive economy..."

UNDRIP Action Plan (Government of Canada, 2023); *Guiding Principles*, Consultation and cooperation: "The UN Declaration Act mandates the Government of Canada to not only consult with Indigenous peoples, but also cooperate with them. This means that Indigenous peoples have the opportunity, including through their representative organizations, to participate in and to positively influence federal decision-making processes with adequate time and supported by adequate resources."

*Integrated oceans management - Oceans governance approach**: "a flexible and transparent planning process that respects existing divisions of constitutional and departmental authority, and does not abrogate or derogate from any existing Aboriginal or treaty rights"

Fisheries Act (1985a); Section 2.5 (d,e,f): "Except as otherwise provided in this Act, when making a decision under this Act, the Minister may consider, among other things,..."

- (d) Indigenous knowledge of the Indigenous peoples of Canada that has been provided to the Minister;
- (e) community knowledge;
- (f) cooperation with any government of a province, any Indigenous governing body and any body — including a co-management body — established under a land claims agreement"

SARA (2002); Preamble: "Community knowledge and interests, including socio economic interests, should be considered in developing and implementing recovery measures"

An Integrated Aboriginal Policy Framework (Fisheries and Oceans Canada, 2007); Programs: "DFO supports Aboriginal ecological knowledge. SARA calls this "Traditional Aboriginal Knowledge" while the Biodiversity Convention contains language "which encourages governments and Aboriginal people to work together to establish processes for empowering Aboriginal communities." DFO has noted this and continues to work to increase its working relationship with Aboriginal people.

A framework for science and technology advice: Principles and Guidelines for the Effective Use of Science and Technology Advice in Government Decision Making (Government of Canada, 2000); Introduction: "This Framework will ensure that government policy, regulatory and management decisions are informed by sound science and technology (S&T) advice." (p.1)

New Access Framework (Fisheries and Oceans Canada, 2002c); *Section 9.1.3, Equity*: "At a procedural level, the equity principle requires the fair and consistent application of access criteria through a decision-making process that is open, transparent and accountable and that ensures fair treatment for all."

Federal Sustainable Development Act (Government of Canada, 2008); Section 5.c: "the principle of openness and transparency, which is the principle that the release of information should be encouraged to support accountability and public engagement"

* [Integrated oceans management](#)

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Appendix 4 – Ecological Pillar Narrative

Ecological Pillar Narrative

- A. [Productivity](#)
 - 1. [Pressures on ecosystem productivity are managed](#)
 - 2. [Ecosystem structure and functioning are promoted and conserved](#)
 - B. [Biodiversity](#)
 - 1. [Population biodiversity is conserved and promoted or enhanced](#)
 - 2. [Species biodiversity is conserved and protected](#)
 - 3. [Functional biodiversity is conserved and promoted](#)
 - 4. [Ecosystem resilience is conserved and promoted](#)
 - 5. [Diversity of ecosystem and habitat types is conserved and promoted](#) - See C. 2
 - C. [Habitat](#)
 - 1. [Habitat required for all species, particularly priority species, is maintained and protected](#)
 - 2. [Fish habitat that has been degraded is restored](#)
 - 3. [Pollution is prevented and reduced](#)
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Introduction

The ecological aspects of ecosystem-based management (EBM) have received considerable attention since the concept emerged in the 1980s (Grumbine, 1994) and there is international consensus that the scope of ecological considerations includes productivity, biodiversity and habitat (e.g., Jamieson and O’Boyle, 2001; Sinclair and Valdimarsson, 2003). The original Maritimes Region Ecosystem Approach to Management (EAM) framework (Gavaris, 2009, Curran et al., 2012, Daly et al., 2020) focused mainly on these ecological considerations (productivity, biodiversity and habitat), originally from a fisheries perspective. It has informed and has been incorporated into some Integrated Fisheries Management Plans in the Maritimes region and formed the basis of ecological objectives for some MPAs (Daly et al., 2020). The ecological objectives of the EAM framework were thus used as the basis for the further development of the Ecological Pillar of the EBM Framework.

Several legislative developments since the early 2000’s have further promoted and substantiated the need for an ecosystem approach/ecosystem-based management. The *Fisheries Act*, (Government of Canada, 1985) amended in 2019 and the Sustainable Fisheries Framework (SFF⁵⁴) establish a precautionary approach to fisheries management and the basis for an ecosystem approach to fisheries management. The SFF includes conservation and sustainable use policies, including a fishery decision-making framework incorporating the precautionary

⁵⁴ [Sustainable fisheries framework](#)

approach⁵⁵ and four policies: (i) Fishery Monitoring Policy⁵⁶, (ii) Policy on Managing Bycatch⁵⁷, (iii) Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas⁵⁸ and (iv) Policy on New Fisheries for Forage Species⁵⁹. The *Species at Risk Act* (Government of Canada, 2002) and *Oceans Act* (Government of Canada, 1996) also provide solid support for the Ecological Pillar of the EBM Framework (see Text Box Ecology 1).

This updated version of the Ecological Pillar was developed by a task group that included DFO staff from across Aquatic Ecosystems, Fisheries Management and Science and reflects these developments and the expanding mandate of DFO. Discussions from this group lead to some objectives being reframed and new objectives being recommended with an increased focus on ecosystem processes, reflecting the renewed emphasis on the conservation and protection of fish habitat in the *Fisheries Act*.

During the development of the objectives, it became clear that some concepts were cross-cutting, such as connectivity, aquatic invasive species and pollution which can influence all Ecological Pillar objectives. However, they were specifically identified in one place (Habitat) to avoid repetition.

In the three sections below, the rationale and policy links are provided for the development of the objectives for the 3 Main Objectives of the Ecological Pillar, productivity, biodiversity and habitat. Each section included a section on “Policy Guidance”. Text Box Ecology 1 provides example policy statements that support the Ecological Pillar.

⁵⁵ [A fishery decision-making framework incorporating the precautionary approach](#)

⁵⁶ [Fishery Monitoring Policy](#)

⁵⁷ [Policy on Managing Bycatch](#)

⁵⁸ [Policy for managing the impacts of fishing on sensitive benthic areas](#)

⁵⁹ [Policy on New Fisheries for Forage Species](#)

Text Box Ecology 1: Policy Support for the Ecological Pillar includes:

Fisheries Act (Government of Canada, 1985); Section 2.5: (a) the application of the precautionary approach and an ecosystem approach, under Considerations for Decision Making

Oceans Act (Government of Canada, 1996):

- Preamble: WHEREAS Canada holds that conservation, based on an ecosystem approach, is of fundamental importance to maintaining biological diversity and productivity in the marine environment;
- Section 35(1): A marine protected area has been designated under this section or section 35.1 for special protection for one or more of the following reasons: (a) the conservation and protection of commercial and non-commercial fishery resources, including marine mammals, and their habitats; (b) the conservation and protection of endangered or threatened marine species, and their habitats; (c) the conservation and protection of unique habitats; (d) the conservation and protection of marine areas of high biodiversity or biological productivity; (e) the conservation and protection of any other marine resource or habitat as is necessary to fulfil the mandate of the Minister; and (f) the conservation and protection of marine areas for the purpose of maintaining ecological integrity

Species at Risk Act (Government of Canada, 2002).

- Purposes: Section 6. The purposes of this Act are to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity and to manage species of special concern to prevent them from becoming endangered or threatened
- Multi-species or ecosystem approach permissible: Section 41(3): The competent minister may adopt a multi-species or an ecosystem approach when preparing the recovery strategy if he or she considers it appropriate to do so.” (p.23)

Sustainable Fisheries Framework ([Sustainable fisheries framework](#)):

- Policy for Managing Impacts of Fishing on Significant Benthic Areas (Fisheries and Oceans Canada, 2009a): “An ecosystem approach, which considers all of the components of an ecosystem, including benthic populations, communities and habitat, and their linkages, is fundamental to the conservation and sustainable use of Canada’s fisheries.”
- Policy on Managing ByCatch (Fisheries and Oceans Canada, 2013):
 - “An understanding of the cumulative effects of fisheries bycatch and the effective management of those effects are fundamental components of an ecosystem approach to management.” (Section 1)
 - "It is anticipated that the policy objectives will be achieved largely through the incorporation or enhancement of ecosystem considerations in fisheries management and annual science work planning.” (Section 4)

An Integrated Aboriginal Policy Framework (Fisheries and Oceans Canada, 2007): “This framework recognizes that DFO’s core mandate has broadened considerably since earlier SCC decisions such as Sparrow and Marshall and now includes new ecosystem-based management responsibilities under the *Oceans Act*” (p.1)

Maritimes Regional Oceans Plan (Fisheries and Oceans Canada, 2014) - “An ecosystem approach places the ecosystem at the forefront of consideration when managing those activities that affect it. By understanding thresholds and limits beyond which the system would be impacted, the activities are managed to maintain the ecosystem within its natural tolerances.” (p.5)

A. Productivity: Productivity is conserved, protected, maintained, and restored so that components can play their role in the functioning of aquatic ecosystems.

The original EAM Framework had 4 objectives related to productivity, three of which were mostly focused on fisheries productivity:

- Keep fishing mortality moderate
- Allow sufficient escapement from exploitation for spawning
- Limit disturbing activity in important reproductive areas/seasons
- Control alteration of nutrient concentrations affecting primary production.

In accordance with an ecosystem approach (*Oceans Act*, Preamble 1), the concept of productivity was expanded to “ecosystem productivity” and to include several ‘levels’ of productivity: productivity of the ecosystem (overall system productivity), functional groups (including trophic levels, and primary productivity), species productivity (especially fisheries target resources), individual productivity within populations (issues of growth, longevity, etc.).

Two Level 1 Objectives were developed, the first directed at managing pressures on productivity, in-line with original thinking and the second focused on promoting and conserving ecosystem structure and functioning.

1. Pressures on ecosystem productivity are managed

These objectives are focused on managed pressures such as fishing, aquaculture, other works, undertakings and activities that can affect productivity. The wording of the objectives was selected to align with wording in the *Fisheries Act*. For example, with respect to mortality from fishing, Section 6.1(1) states that the “the Minister shall implement measures to maintain major fish stocks at or above the level necessary to promote the sustainability of the stock...”, therefore similar wording was used for the objective 1.a.i related to fishing mortality: “i. Fishing mortality is limited to levels necessary to promote sustainability”. In contrast, the wording of the objectives related to other pressures on ecosystem, such as “Q.1.b.i “Fish mortality from works, undertakings, and activities other than fishing is avoided, mitigated and/or offset” used the language from Section 34.1 of the *Fisheries Act*, i.,e “avoid, mitigate or offset”.

2. Ecosystem structure and functioning is promoted and conserved

Ecosystem productivity is related to ecosystem structure and functioning, so two specific objectives related to the conservation and promotion of ecosystem structure and ecosystem functioning were developed under this Main Objective to capture this.

Text Box Ecology 2: Policy Support for Productivity Objectives includes Fisheries Act (Government of Canada, 1985):

- Section 6.1(1): “In the management of fisheries, the Minister shall implement measures to maintain major fish stocks at or above the level necessary to promote the sustainability of the stock, taking into account the biology of the fish and the environmental conditions affecting the stock”
- Section 34.1(1): “Before recommending to the Governor in Council that a regulation be made in respect of [various sections of the Act regarding fish habitat], the Minister, prescribed person or prescribed entity, as the case may be, shall consider the following factors:
 - (a) the contribution to the productivity of relevant fisheries by the fish or fish habitat that is likely to be affected;
- Section 34.4: No person shall carry on any work, undertaking or activity, other than fishing, that results in the death of fish

Oceans Act (Government of Canada, 1996):

- Preamble [1]: “WHEREAS Canada holds that conservation, based on an ecosystem approach, is of fundamental importance to maintaining biological diversity and productivity in the marine environment”
- Section 35.(1): A marine protected area ...is designated under this section or section 35.1 for special protection for one or more of the following reasons:
 - (d) the conservation and protection of marine areas of high biodiversity or biological productivity
 - (f) the conservation and protection of marine areas for the purpose of maintaining ecological integrity
- Section 35.(1.1): “For the purpose of paragraph (1)(f), ecological integrity means a condition in which (a) the structure, composition and function of ecosystems are undisturbed by any human activity; (b) natural ecological processes are intact and self-sustaining; (c) ecosystems evolve naturally; and (d) an ecosystem’s capacity for self-renewal and its biodiversity are maintained.”

Policy on Managing ByCatch (Fisheries and Oceans Canada, 2013): “to ensure that Canadian fisheries are managed in a manner that supports the sustainable harvesting of aquatic species and that minimizes the risk of fisheries causing serious or irreversible harm to bycatch species” (Objective 1)

Policy on New Fisheries for Forage Species (Fisheries and Oceans Canada, 2009b):

- “Maintenance of target, bycatch, and ecologically dependent species and their ecological relationships within the bounds of natural fluctuations in abundance” (Overall Objective 1)
- “Maintenance of ecological relationships (e.g predator-prey and competition) among species affected directly or indirectly by the fishery within the bounds of natural fluctuations in these relationships” (Overall Objective 2)
- “Minimization of the risk of changes to species’ abundances or relationships which are difficult or impossible to reverse” (Overall Objective 3)
- The principles of the Precautionary Approach should be followed in management of fisheries on forage species. The biomasses of forage species used as limit reference points in management should ensure both that future recruitment of the target species is not impaired, and that food supply for predators is not depleted (Principles)

Text Box Ecology 2 (Cont): Policy Support for Productivity Objectives includes:

An Integrated Aboriginal Policy Framework (Fisheries and Oceans Canada, 2007): “ensure that conservation and sustainable use of the fishery are the top management priorities

Canada’s Ocean Strategy; Policy and Operational Framework for Integrated Management of Estuarine, Coastal and Marine Environments (Fisheries and Oceans Canada, 2002); Section 3.2.1: “Assessment of ecosystem characteristics that must be maintained to ensure the maintenance of the natural functions of the ecosystem”

- Productivity of directly-impacted species
- Productivity of ecologically-dependent species

Aquaculture Policy Framework (Fisheries and Oceans Canada, 2008): “DFO will support aquaculture development in a manner consistent with its commitments to ecosystem-based and integrated management, as set out in departmental legislation, regulations and policies.” (Principles)

Federal Sustainable Development Strategy (ECCC, 2022): “s.14.4: By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics” (Goal 14: Conserve and protect Canada’s oceans).

B. Biodiversity: Biodiversity is conserved, maintained, and restored to preserve the structure and natural resilience of aquatic ecosystems.

Biodiversity, a critical feature of ecosystems and populations, is clearly recognised in the *Oceans Act*, which states that “conservation, based on an ecosystem approach, is of fundamental importance to maintaining biological diversity and productivity in the marine environment” (Preamble, p.1). Biodiversity encompasses functional diversity, population diversity (e.g. spawning components), and individual (or genetic) diversity and includes consideration of fisheries bycatch, and species at risk. There were five biodiversity objectives in the original EAM Framework (Curran et al.,2012; Daly et al.,2020):

- a. Control unintended incidental mortality for all species
- b. Distribute population component mortality in relation to component biomass
- c. Minimize unintended introduction and transmission of invasive species
- d. Control introduction and proliferation of disease/pathogens
- e. Minimize aquaculture escapes

These 5 original objectives were re-framed around five Level 1 Objectives related to (1) population biodiversity, (2) species biodiversity, (3) functional biodiversity, (4) ecosystem resilience and (5) ecosystem and habitat diversity.

1. Population biodiversity is conserved and promoted or enhanced

The intent of this Level 1 Objective, its level 2 objective and four Level 3 Objectives is to conserve genetic population diversity. Two of the original objectives listed above are included, with the addition of two further objectives. The first relates to spatial distribution of protection measures and aims to ensure that species' genetic structure is represented within regional conservation areas. The second is related to minimising the harmful effects of stock enhancement, which is of concern for species at risk such as Atlantic salmon (*Salmo salar*), which speaks to Canada's 2030 Nature Strategy to "do no harm" (Environment and Climate Change Canada, 2024⁶⁰).

2. Species biodiversity is conserved and protected

This Level 1 Objective aims to protect species biodiversity through the control of incidental mortality, aquatic invasive species and disease/pathogens. These are three of the original objectives, slightly re-phrased. A fourth objective was added that specifies that rebuilding plans (*Fisheries Act*) for depleted species are developed, where "depleted species" refers to any species that has been assessed by COSEWIC (Committee on the Status of Endangered Wildlife in Canada⁶¹) or is listed under the *Species at Risk Act*, and can include additional species recognized by DFO Science as depleted– e.g., ocean pout.

3. Functional biodiversity is conserved and promoted

Functional biodiversity, measured by diversity of functional groups in the ecosystem such as piscivorous fish, forage fish, large invertebrates, benthivorous fish, and copepods is an important aspect of biodiversity. Note that this objective is related to the Productivity Level 2 Objective A.2. "Ecosystem structure is promoted and conserved"

4. Ecosystem resilience is conserved and promoted

Ecosystem resilience is essentially the ability to withstand disturbances and continue to maintain critical functions. Factors that promote ecosystem resilience include species biodiversity, functional diversity and redundancy, genetic diversity, connectivity and spatial heterogeneity. Some of these features have already been captured in the other Biodiversity objectives, or in the Habitat objectives (see below). However, four specific objectives were included here related to maintaining long-lived species, genetic diversity, climate refugia and natural areas. Natural areas, characterized by minimal anthropogenic disturbance, may be inherently more resilient to environmental changes (e.g., warming). Therefore, placing priority on protecting and conserving areas that are relatively more intact or natural we will contribute to resiliency.

5. Diversity of ecosystem and habitat types are conserved and promoted

⁶⁰ <https://www.canada.ca/en/environment-climate-change/services/biodiversity/canada-2030-nature-strategy.html>

⁶¹ <https://cosewic.ca/index.php/en/>

Policy support for these objectives comes from a range of sources including the *Fisheries Act*, the Federal Sustainable Development Strategy (FSDS⁶²), the FAO Voluntary Guidelines for Securing Sustainable Small Scale Fisheries (FAO, 2015), This is captured under the Habitat Main Objective, Section C.2.

⁶² <https://www.canada.ca/en/environment-climate-change/services/climate-change/federal-sustainable-development-strategy.html>

Text Box Ecology 3: Policy Support for Biodiversity Objectives includes:

Species at Risk Act (Government of Canada, 2002)

- Purposes: 6. The purposes of this Act are to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity and to manage species of special concern to prevent them from becoming endangered or threatened
- Recovery of Endangered, Threatened and Extirpated Species: 38. In preparing a recovery strategy, action plan or management plan, the competent minister must consider the commitment of the Government of Canada to conserving biological diversity and to the principle that, if there are threats of serious or irreversible damage to the listed wildlife species, cost-effective measures to prevent the reduction or loss of the species should not be postponed for a lack of full scientific certainty.
- Measures to Protect Listed Wildlife Species: 32 (1) No person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species

Policy on New Fisheries for Forage Species (Fisheries and Oceans Canada, 2009b); Overall Objective 4: Maintenance of full reproductive potential of the forage species, including genetic diversity and geographic population structure

Policy for Managing Impacts of Fishing on Significant Benthic Areas (Fisheries and Oceans Canada, 2009a); Guiding Principles: “Conservation of fisheries resources and fish habitat – defined as sustainable use that safeguards ecological processes and genetic diversity for present and future generations – is a key priority of fisheries management decision making”.

Canada’s Wild Atlantic Salmon Policy (Fisheries and Oceans Canada, 2018); Principles Conservation: “The conservation of wild Atlantic salmon populations, their genetic diversity and their habitats must be given the highest priority in management decisions.”

Guidelines for writing rebuilding plans per the Fish Stocks Provisions and A Fishery Decision-making Framework Incorporating the Precautionary Approach (Fisheries and Oceans Canada, 2022a): “Stock conservation objectives could also include restoring a stock to its “normal” or “near normal” life history characteristics (e.g., restoring age structure, size and age-at-maturity, genetic diversity, behavioural traits, distribution) and ecological function (e.g., restoring predator/prey relationships), to the extent possible (Section 3.4b)

Policy on Managing Bycatch (Fisheries and Oceans Canada, 2013):

- “Minimize the capture of bycatch species and specimens that will not be retained, to the extent practicable”
- “An understanding of the cumulative effects of fisheries bycatch and the effective management of those effects are fundamental components of an ecosystem approach to management.” (Section 1)

The National Framework for Canada’s Network of Marine Protected Areas (Fisheries and Oceans Canada, 2011):

- “To provide long-term protection of marine biodiversity, ecosystem function and special natural features.” (Goal 1, p.6)
- “Providing refuge for marine species displaced by habitat change” (section 7.1, p.11)

Text Box Ecology 3 (cont.): Policy Support for Biodiversity Objectives includes:

Canada's Ocean Strategy: Policy and operational framework for integrated management of estuarine, coastal and marine (Fisheries and Oceans Canada, 2002); Section 3.2.1: Assessment of ecosystem characteristics that must be maintained to ensure the maintenance of the natural functions of the ecosystem”:

- The diversity of ecosystem types
- Species diversity
- Genetic variability within species
- Productivity of directly -impacted species
- Productivity of ecologically-dependent species
- Ecosystem structure and function

Kunming-Montreal Global Biodiversity Framework (United Nations, 2022): “Ensure that by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and coastal and marine ecosystems are under effective restoration, in order to enhance biodiversity and ecosystem functions and services, ecological integrity and connectivity (Target 2)

C. Habitat: Habitat and habitat features, including the chemical biological, physical, ecological integrity of aquatic ecosystems, are conserved, protected, maintained, and restored.

Habitat includes diverse considerations including the quality of habitat and the environment, protection from pollution (including noise and light), care of novel and sensitive areas, protection of special or critical habitats. The *Fisheries Act*, the *Oceans Act* and the *Species at Risk Act* all provide clear direction on the importance of protecting habitat. One of the purposes of the *Fisheries Act* is “(b) the conservation and protection of fish and fish habitat, including by preventing pollution”, Section 35 (1) of the *Oceans Act* calls for the “(b) the conservation and protection of endangered or threatened marine species, and their habitats and (c) the conservation and protection of unique habitats and the *Species at Risk Act* requires the identification and protection of Critical Habitat: “No person shall destroy any part of the critical habitat of a listed endangered species or a listed threatened species that is in a province or territory and that is not part of federal lands”. The policy for Managing Impacts of Fishing on Significant Benthic Areas (Fisheries and Oceans Canada, 2009a) clearly states the need for an ecosystem approach to the protection of habitat: “An ecosystem approach, which considers all of the components of an ecosystem, including benthic populations, communities and habitat, and their linkages, is fundamental to the conservation and sustainable use of Canada’s fisheries”, Guiding Principle #1)

The original EAM Framework included 5 objectives for habitat:

- Manage area disturbed of habitat
- Limit introduction of pollutants
- Minimize introduction of debris
- Control noise disturbance

- Control light disturbance

These were re-framed as 3 broad level 1 objectives: (1) Habitat required for all species, particularly priority species, is maintained and protected, (2) Fish habitat that has been degraded is restored and (3) Pollution is prevented and reduced. The importance of habitat is underscored in the DFO's key legislation, including Section 43 and 35 of the *Fisheries Act*, section 35 of the *Oceans Act*, Sections 56-64 of the *Species at Risk Act* and An Integrated Aboriginal Policy Framework (Fisheries and Oceans Canada, 2007), Text Box Ecology 4.

1. Habitat required for all species, particularly priority species, is maintained and protected

The first objective from the original EAM Framework was modified and included here as a Level 2 objective. The 10 other level 2 objectives were developed to represent the breadth of DFO's mandate to conserve habitat. These objectives are derived from the *Fisheries Act*, the *Oceans Act*, the *Species at Risk Act*, Canada's National Adaptation Strategy, the National Framework for Canada's Network of Marine Protected Areas as well as other policies (Text Box Ecology 4). They reflect the importance of protecting early life-history stage habitat, rare, critical habitat for species at risk, unique and vulnerable habitats, biogenic habitats, riparian zones and representative areas. Connectivity between areas and life history stages is explicitly recognized, as is preventing the introduction of Aquatic Invasive Species (AIS), which can cause radical alteration to habitats. Priority species include depleted species (including species at risk), vulnerable species, species of Aboriginal/Cultural importance, ecologically significant species, diadromous species, and commercially and recreationally fished species.

2. Fish habitat that has been degraded is restored

The *Fisheries Act* placed a renewed emphasis on fish habitat and the restoration of degraded fish habitat. Therefore this second Level 1 Objective was developed to specifically address this, with a focus on key areas where restoration would contribute to increasing the productivity of populations and to the recovery and conservation of species listed under the *Species at Risk Act*. Eight level 2 objectives were developed to reflect this policy, with a focus on key areas where restoration would contribute to increasing the productivity of populations and contribute to species recovery.

3. Pollution is prevented and reduced

There is clear direction to prevent pollution in the purpose of the *Fisheries Act* (see Text Box Ecology 4), but pollution is more fully regulated under the Department of Environment and Climate Change Canada through the *Canadian Environmental Protection Act* (CEPA, Government of Canada, 1999), the purpose of which is to "contribute to sustainable development through pollution prevention". Transport Canada and the Environmental Impact Agency. In addition, the

MPA Protection Standard⁶³ restricts or prohibits dumping, pollution and other destructive bottom contact activities in MPAs

Five level 2 objectives were developed for pollution, four of which were included in the original EAM objectives for habitat, see above. The first level 2 objectives relates to vessel sewage, garbage and other debris. This is covered under Canada's *Shipping Act* (Government of Canada, 2001), which includes regulation related to pollution including to ensure that vessels are disposing of sewage and garbage appropriately. In DFO, there is increasing emphasis on prevention and mitigation of marine debris, which is a specific requirement under license conditions.

Ghost gear reduction and recovery was added as a level 2 objective in recognition of Canada's membership in the Global Ghost Gear Initiative⁶⁴ and Goal 5 (Healthy Oceans & Coasts) of the Federal Sustainable Development Strategy (Environment and Climate Change Canada, 2019). In 2022, Canada was one of the first countries to systematically collect data around gear loss from fishers as a mandatory condition of license.

Prevention and reduction of toxic substances largely falls under the *Canadian Environmental Protection Act* (Government of Canada, 1999), implemented by the Department of Environment and Climate Change Canada. However, limiting introduction of pollutants is specified under the *Fisheries Act*, and is also a part of license conditions for commercial fisheries and

The assessment of anthropogenic light and sound added to the marine environment by proposed marine and coastal projects falls under the *Impact Assessment Act* (Government of Canada, 2019). In addition, DFO, as part of its Oceans Protection Plan⁶⁵ is developing a National Ocean Noise strategy⁶⁶ (see Breeze et al., 2022) for a review of the impacts of ocean noise). They have also produced a National Framework For Assessing The Cumulative Effects of Marine Shipping (Transport Canada, 2022), which includes the effect of vessel noise on marine mammals.

There is little evident legislative support for mitigating/preventing light pollution, but there is ample evidence and concern in the scientific literature on its implications on biota (for a review, see Davies et al., 2014). Artificial light pollution is problem that mainly occurs at night time when it is dark. Artificial light can alter colors, cycles, and intensities of light in the marine environment, impacting biological and ecological processes, such as recruitment, predation and species movement.

Therefore the five level 2 objectives developed for pollution were developed recognizing that they do not all fall directly within DFO's mandate and that some objectives may be more anticipatory. For example, there are regulatory amendments coming forward to the *Fisheries Act*

⁶³ [MPA Protection Standard](#)

⁶⁴ [Members — Global Ghost Gear Initiative](#)

⁶⁵ [Canada's Oceans Protection Plan](#)

⁶⁶ [Mitigating the impacts of ocean noise \(dfo-mpo.gc.ca\)](#)

related to pollution and a clause was recently added to licensing conditions with regard to dumping from fishing vessels. DFO is working with ECCC and Transport Canada who currently have legislation to enforce these areas. What is key is that there is Canadian and International legislation to support these objectives that EBM requires multi department cooperation and collaboration. This is already being evidenced by the examples above.

Text Box Ecology 4: Policy Support for Habitat Objectives includes:

Fisheries Act (Government of Canada, 1985)

- “The Minister may establish standards and codes of practice for (a) the avoidance of death to fish and harmful alteration, disruption or destruction of fish habitat; (b) the conservation and protection of fish or fish habitat; and (c) the prevention of pollution” (Section 34.2(1))
- No person shall carry on any work, undertaking or activity that results in the harmful alteration, disruption or destruction of fish habitat (Section 35, (1))
- FISH PASSAGE – There are several provisions that speak to Ministerial authority to ensure the free passage of fish which includes prevention/removal of obstructions and maintaining water flows to ensure fish can migrate (e.g, Section 34.3)
- Throwing overboard of certain substances prohibited (includes ballast, coal ashes, stones or other prejudicial or deleterious substances, see Section 36)
- The Governor in Council may make regulations for carrying out the purposes and provisions of this Act and in particular, but without restricting the generality of the foregoing, may make regulations
 - (b.1) respecting the rebuilding of fish stocks;
 - (b.2) respecting the restoration of fish habitat; (Section 43(1))
- In the management of fisheries, if the Minister is of the opinion that the loss or degradation of the stock’s fish habitat has contributed to the stock’s decline, he or she shall take into account whether there are measures in place aimed at restoring that fish habitat.(Section 6.2 (5))

Species at Risk Act (Government of Canada, 2002)

- Subject to this section, no person shall destroy any part of the critical habitat of any listed endangered species or of any listed threatened species — or of any listed extirpated species if a recovery strategy has recommended the reintroduction of the species into the wild in Canada
- If a wildlife species has been classified as an endangered species or a threatened species by a provincial or territorial minister, no person shall destroy any part of the habitat of that species that the provincial or territorial minister has identified as essential to the survival or recovery of the species and that is on federal lands in the province or territory (Section 60 (1)).

Canada’s Ocean Strategy: Policy and operational framework for integrated management of estuarine, coastal and marine (Fisheries and Oceans Canada, 2002), Section 3.2.1: “Assessment of ecosystem characteristics that must be maintained to ensure the maintenance of the natural functions of the ecosystem” - Water quality

Policy for Managing Impacts of Fishing on Significant Benthic Areas (Fisheries and Oceans Canada, 2009a); Guiding Principles:

- Conservation of fisheries resources and fish habitat – defined as sustainable use that safeguards ecological processes and genetic diversity for present and future generations – is a key priority of fisheries management decision making. (Principle 2)
- [The PA] recognizes that if there is both high scientific uncertainty and a risk of serious or irreversible harm, a lack of adequate scientific information will not be used as a reason for failing to take, or for postponing, cost effective measures for the conservation or protection of fish or fish habitat that are considered proportional to the likely severity of the risk. (Principle 3)

[Oceans Protection Plan](#) (2020): “The key threats [to marine mammals] include contaminants, prey availability and noise in the marine environment.” (OPP, New whale protections, p.8)

Text Box Ecology 4 (cont.): Policy Support for Habitat Objectives includes:

An Integrated Aboriginal Policy Framework (Fisheries and Oceans, 2007): “Given the importance many Aboriginal groups place on fish and other aquatic resources, the protection of the fish habitat on all three coasts as well as in inland provinces assumes a major significance in Aboriginal fisheries management.” (P.23)

National Framework for Identifying, Establishing, and Managing Ecologically Significant Areas (Fisheries and Oceans Canada, 2023); Guiding Principles:

- “ESAs contribute to the protection of biodiversity, the recovery of aquatic species at risk, the restoration of fish habitat, and/or climate change mitigation, resilience, and adaptation”. (p.19)
- ESAs maintain and restore connectivity between habitats and across ecosystems (Guiding Principles)

Policy for Applying Measures to Offset Adverse Effects on Fish and Fish Habitat Under the Fisheries Act (Fisheries and Oceans Canada, 2019); Principle 1: “Measures to offset should support fisheries management objectives and give priority to the restoration of degraded fish habitat”.

Fisheries and Oceans Canada Departmental Plan 2022-2023 (Fisheries and Oceans Canada, 2022b): “Aquatic Ecosystems: Conserve and protect Canada’s oceans and other aquatic ecosystems and species from human impact and invasive species.” (P18)

Federal Sustainable Development Strategy 2019-2022, (ECCC, 2019); Invasive species, species at risk & habitat protection:

- “The introduction and spread of invasive alien species results in a loss of biodiversity leading to major economic costs” p.54
- “freshwater ecosystems will benefit from ballast water regulations to reduce risks from aquatic invasive species” p.58 (Goal 5: Healthy Oceans & Coasts)

*Ghost Gear Action Plan**: “Canada’s Ghost Gear Action Plan is to establish a guiding framework that contains concrete actions to support the country to improve the management of ghost gear in Canada into the future”

National Framework for Canada’s Network of Marine Protected Areas (Fisheries and Oceans, 2011): “Connectivity – ensuring that individual MPAs can benefit from each other, for example by establishing functional linkages between larval production areas and other geographically separate areas required for subsequent life stages”, p.16

Canada’s National Adaptation Strategy (ECCC, 2023); Objectives: “1. Human activities are transformed to halt and reverse biodiversity loss, and enhance ecosystem connectivity and resilience”

Government of Canada Adaptation Action Plan (Government of Canada, 2023); Executive Summary: “restoring ecological connectivity to allow species to move freely and better adapt to a changing climate through the National Program for Ecological Corridors”, p. vii

Kunming - Montreal Global Biodiversity Framework (United Nations, 2022); Global Goals, Goal A: “The integrity, connectivity and resilience of all ecosystems are maintained, enhanced, or restored, substantially increasing the area of natural ecosystems by 2050”, p.8

* <https://www.dfo-mpo.gc.ca/fisheries-peches/management-gestion/ghostgear-equipementfantome/program-programme/program-programme-eng.html>

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Appendix 5 - Economic Pillar Narrative

Economic Narrative

- A. [Economic Efficiency](#)
 - 1. [Economic outputs and benefits are enhanced for all users where possible](#)
 - 2. [Economic opportunities and benefits for communities, industries and other users are enhanced](#)
 - 3. [Other types of values related to economic efficiency are included in decision making](#)
 - B. [Economic Sustainability](#)
 - 1. [Sustainable economic prosperity for all users](#)
 - 2. [Strong, viable and sustainable communities, industries and other uses are achieved](#)
 - 3. [Support sustainable livelihoods](#)
 - C. [Economic Equity](#)
 - 1. [An equitable distribution of opportunities for access and benefits across all individual users and uses is achieved](#)
 - 2. [An equitable distribution of opportunities across communities, industries and other users and uses is achieved](#)
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Introduction

Economic considerations have long been important factors in decision making within the department. In various department related acts, policies, plans and associated guidance documents, 'economic' or 'socio-economic' considerations have been specifically mentioned as important factors in managing activities and resources within the nation's aquatic systems. For example, the *Fisheries Act* (Government of Canada, 1985) states that the Minister may consider social, economic and cultural factors in the management of fisheries; the *Ocean Act* (Government of Canada, 1996) notes that the Minister may consider environmental, economic, social or cultural information when designating a Marine Protected Area; and the *Species At Risk Act* (Government of Canada, 2002) specifically refers to the need to evaluate socio-economic costs and benefits when developing Action plans. From a wider federal government perspective, the Treasury Board has for decades required federal departments to analyze the socio-economic costs and benefits of all proposed federal regulations, including regulations related to the country's aquatic systems. The Treasury Board notably defines the term 'economic' as referring to the benefits and costs that will affect economic welfare and economic growth and the term 'social' when referring to the potential distributional impacts of the regulations being evaluated. The EBM Economic Pillar is a reflection and acknowledgment of the role that economic considerations play in managing the country's aquatic resources.

It is recognized that there are many different viewpoints and perspectives regarding economics with respect to both the concept itself and the appropriate role for such considerations within

the department's decision-making frameworks. In particular, the EBM Economic Pillar acknowledges and respects that Indigenous perspectives, values and approaches may not align with those presented in the pillar.

The development of the EBM Economic Pillar was led by a team of economists from the Department's Maritime Region with input and guidance provided by the larger EBM workgroup. The Economic Pillar is built upon much of the socio-economic work done in the department over the past 20 or more years and reflects aspects of various guidance document and frameworks that have been developed to guide this work within different departmental programs.

To develop the pillar, a review of relevant acts, policies, plans and associated guidance documents was undertaken to identify the economic related priorities of the department. An examination of the results of this review identified broad overarching economic themes that formed the primary objectives of the Economic Pillar:

- A. Economic Efficiency,
- B. Economic Sustainability.
- C. Economic Equity

A further analysis of the relevant acts, policies, plans and associated guidance documents also identified a variety of different potential users of the Region's aquatic resources. These include partners, stakeholders, and other groups and individuals in which the primary economic objectives could be applied. In addition, a variety of ways in which the region's aquatic resources could be used were also identified. These include private and public use, commercial and non-commercial use, and other use and non-use of aquatic resources. These groupings were used to form many of the main sub-objectives (Level 1, Level 2, etc.) under each of the Main Objectives in the Economic pillar.

All Users includes:

- Canadians
- Canadian communities (including Indigenous, regional, provincial, and local communities)
- Industries (large, medium and small)
- GBA+ users
- Other users

All Uses includes:

- Indigenous Treaty based rights fisheries (FSC, moderate livelihood, communal/commercial)
- Recreational Fishing
- Commercial Fishing (small-scale, large-scale and industrial fishing)
- Other fishing
- Aquaculture
- Tourism
- Offshore Wind
- Oil and Gas

– Other Uses and Activities

The EBM Economic Pillar builds upon previous work done by the Canadian Fisheries Research Network (CFRN). The original CFRN Sustainability Framework had 4 objectives under the Economic Pillar : Economic prosperity; distribution of access and benefits; regional economic benefits to communities; and sustainable livelihoods (Stephenson et al., 2018, 2019). The Economic Pillar of the EBM framework was designed to take a broader approach that incorporated these objectives within and across its three primary objectives. Components of each of the CFRN objectives fit under each of the Economic Pillar objectives: economic prosperity largely falls within the efficiency objective, sustainable livelihoods falls within the sustainability objective both the distribution of access and benefits and regional economic benefits largely falls within the equity objective.

As a whole, the Economic Pillar accounts for objectives covering a wide spectrum of Canadian society including rights holders, stakeholders, communities, and all Canadians. Objectives related to ‘users’ can include a wide diversity of users who may be commercial or non-commercial and/or direct or indirect users of the aquatic resource. Objectives related to the different ‘uses’ of the resources can include a variety of consumptive uses such as fish harvesting and non-consumptive uses such as tourism and recreation.

In the development of the Economic Pillar, it became evident that the three Main Objectives were not mutually exclusive nor necessarily complimentary to each other. For example, an action that increases equity may also increase sustainability; or more challenging, an action that increases efficiency may result in a decrease in equity. As a result of these issues, the three objectives within the Economic Pillar should be viewed as three independent and potentially competing objectives that should be pursued and achieved in an appropriate balance. As such, some decisions may assign greater weight to one objective while other decisions may assign different weights and achieve a different balance.

In the three sections below, the rationale for the 3 Main Objectives of the Economic Pillar are provided: A. Economic Efficiency, B. Economic Equity, and C. Economic Sustainability. Each section includes a section on “Policy Guidance” which highlights the primary policy linkages that drove the development.

A. Economic Efficiency: Aquatic activities and resources are governed and managed to enhance economic output and benefits for all Canadians.

Economic efficiency is a state when resources in an economy are used and distributed in a way that produces the most economic output and benefit.

One of the primary considerations for the Government of Canada in decision making is determining which course of action results in the greatest overall benefit to Canadians. This is reflected in the Treasury Board’s Cabinet Directive on Regulation (Treasury Board of Canada Secretariat, 2024) which specifically notes that “It is the duty of the Government of Canada to

ensure that regulations result in the greatest overall benefits to current and future generations of Canadians”, section 3.0. The economic efficiency objective is aimed at helping to achieve these benefits.

There are three Level 1 Objectives developed under the Economic Efficiency Main Objective. The first is directed at all users of the country’s aquatic resource such as communities, individuals and harvesters, and the second is directed at the wide variety of possible uses of the resource such as recreation, fisheries, and a variety of other commercial and non-commercial uses.

1. Economic opportunities, outputs and benefits are enhanced for all users where possible

This Level 1 Objective is focused on growing economic opportunities for the wide variety of users and user groups across the country. Opportunities include improvements in economic measures such as employment, income, output, and livelihoods. The scale of this objective can range from a single individual or single community to all Canadians.

2. Economic opportunities and benefits for communities, industries and other users are enhanced

This Level 1 Objective is focused on growing economic opportunities associated with the many users of the nation’s aquatic resources. Opportunities include improvements in economic measures such as regional development, industrial development, and market development. The scale of this objective can include communities, industries, and other users.

3. Other types of values related to economic efficiency are included in decision making

This Level 1 Objective is focused on ensuring a broad view of economic opportunities and benefits are incorporated into decision making. It is often assumed that economic values used in decision making refer solely to market-based economic values, typically in financial terms. Although market based values are an important component of decision making, non-market economic considerations such as environmental, health, safety and security values also play an important role in the Government of Canada’s decision making. Estimating these types of benefits generally presents challenges because they have no specific identifiable market price since they are not traded.

This objective highlights the importance of non-market measures such as bequest value, Indigenous values, existence values, altruistic values and other cultural values. The scale of this objective is both individual and collective based.

Text Box Economic 1: Policy Support for Economic Efficiency includes:

Fisheries Act (Government of Canada, 1985); Section 2.5: Considerations for decision making – “consider,(g) social, economic and cultural factors in the management of fisheries;”

Oceans Act (Government of Canada, 1996); Preamble - “WHEREAS Canada recognizes that the oceans and their resources offer significant opportunities for economic diversification and the generation of wealth for the benefit for all Canadians, and in particular for coastal communities;”

Species at Risk Act (Government of Canada, 2002); General Prohibitions - “an evaluation of the socio-economic costs of the action plan and the benefits to be derived from its implementation;”

Fisheries and Oceans Canada Departmental Plan, 2019-2020 (Fisheries and Oceans Canada, 2019a): “Economic evidence is integral to the delivery of the Department’s fisheries, aquaculture, and oceans responsibilities, and is achieved by economic and statistical analysis; cost-benefit analysis; and collaborative research” (p.10)

Cabinet Directive on Regulation (Treasury Board of Canada Secretariat, 2024); *section 3.0 Guiding principles*: “It is the duty of the Government of Canada to ensure that regulations result in the greatest overall benefits to current and future generations of Canadians.”

Impact Assessment Act (Government of Canada, 2019); 6 (1): “The purposes of this Act – “(a) to protect the components of the environment, and the health, social and economic conditions that are within the legislative authority of Parliament from adverse effects caused by a designated project”

National Framework for Canada’s Network of Marine Protected Areas (Fisheries and Oceans Canada, 2011); Section 7.1 Benefits: “There are also a number of social and economic benefits which can result from the establishment of a network of MPAs, such as: Sustained fisheries; Enhanced recreation opportunities; Promotion of cultural heritage; Enhanced planning of ocean uses; Increased support for marine conservation/effective outreach and education; Enhanced research and monitoring opportunities” (p.12)

Aquaculture Policy Framework (Fisheries and Oceans Canada, 2008); Vision: “achieving DFO's vision will also require that the department continue to broaden its approach and, where relevant, increase the level of importance it places on the socio-economic benefits of aquaculture development.” (p.19)

B. Economic Sustainability: Aquatic activities and resources are governed and managed to foster long term, viable, prosperous and sustainable opportunities and benefits for all users and uses.

Economic Sustainability is a state when resources in an economy are used and distributed in a way that supports long term economic opportunities and benefits.

The long term health of an economy is dependent on it operating in a sustainable manner. For the Government of Canada, this entails managing its aquatic resource to generate long-term sustainable economic benefits for all Canadians.

There are three Level 1 Objectives under the Economic Sustainability objective. The first is directed at users of the country's aquatic resource such as harvesters and other industrial users, as well as communities and the general public. The second Level 1 Objective is directed at the sustainable uses of the aquatic resources for such users as coastal communities, industries, and other commercial and non-commercial users. The third is directed at supporting sustainable livelihoods.

1. Sustainable economic prosperity for all users

This Level 1 Objective is focused on promoting sustainability for a wide variety of users. Opportunities include promoting long term economic prosperity, intergenerational economic security, and regional economic benefits. The scale of this objective can range from a single individual, to a single community or all individual Canadians.

2. Strong, viable and economically sustainable community, industry and other uses are achieved

This Level 1 Objective is focused on promoting sustainability for the many uses of the resource. Opportunities include promoting Indigenous, rural and coastal community development, supporting sustainable industrial development, and supporting the sustainable growth of aquatic and non-aquatic related business and industries. The scale of this objective can include community, industry, and a variety of other uses.

3. Support sustainable livelihoods

This Level 1 Objective highlights the important role that sustainable livelihoods plays in decision making. This would include components such as supporting employment opportunities, employment diversification, and broader labour market developments. The scale of this objective is both individual and collective based.

Text Box Economic 2: Policy Support for Economic Sustainability includes:

Oceans Act (1996); Preamble: “WHEREAS Canada promotes the understanding of oceans, ocean processes, marine resources and marine ecosystems to foster the sustainable development of the oceans and their resources;”

Fisheries and Oceans Canada International Science Strategy (Fisheries and Oceans Canada, 2009); Priority #2 Science Advice for Fisheries and Oceans Management: “Sustainable fisheries and oceans management is the key to long term economic prosperity resulting from the exploitation of living aquatic resources and other oceans sectors such as renewable and non-renewable energy development.” (p.11)

National Framework for Canada’s Network of Marine Protected Areas (Fisheries and Oceans Canada, 2011); Section 3. Network Goals: “To support the conservation and management of Canada’s living marine resources and their habitats, and the socio-economic values and ecosystem services they provide.” (P. 6)

Canada’s Ocean Strategy: Policy and Operational Framework for Integrated Management of Estuarine, Coastal and Marine Environments in Canada (Fisheries and Oceans Canada, 2002a); Goal for IM: “Integrated Management will support diversified, balanced economic development of oceans and coastal waters by protecting their health, preserving their biodiversity and maintaining their productivity.” (p.5)

New Access Framework (2002b); The Criteria: “Adjacency: “Priority of access should be granted to those who are closest to the fishery resource in question...on the implicit assumption that access based on adjacency will promote values of local stewardship and local economic development.”(p.47)

C. Economic Equity: Aquatic activities and resources are governed and managed to promote an equitable distribution of opportunities across all users and uses (or activities).

Economic equity can be defined as the concept of a fair and balanced distribution of economic opportunities and benefits within a society.

The concept of economic equity has long been an important consideration for the Government of Canada when making decisions affecting Canadians. The Treasury Board’s Cabinet Directive on Regulation (Treasury Board of Canada Secretariat, 2024) specifically states, “Departments and agencies are to examine the potential positive and negative impacts of a proposed regulation and its feasible alternative options on Canadians, business, governments and the environment, and identify how impacts are distributed across the various parties”, (section 5.2.1 Analysis of benefits and costs). Furthermore, there is an increased recognition of the broad and important role of equity, “We must continue to address the profound systemic inequities and disparities that remain present in the core fabric of our society, including our core institutions...we remain committed to ensuring that public policies are informed and developed through an intersectional

lens, including applying frameworks such as Gender-based Analysis Plus (GBA Plus) and the quality of life indicators in decision-making” (Prime Minister of Canada, 2021).

The economic equity Main Objective is aimed at achieving a fair and balanced distribution of economic opportunities and benefits across all of Canadian society.

Two Level 1 Objectives were developed under the economic equity objective. The first is directed at equity across individual users of the nation’s aquatic resource and the second directed at the various types of uses such as by communities and industry.

1. An equitable distribution of opportunities for access and benefits across all individual users and uses is achieved

This objective is focused on promoting equity for individual-based users. Opportunities include equitable access to resources and markets, an equitable distribution of benefits such as income and employment opportunities, and an equitable distribution of the use of aquatic resources; including a balancing of opportunities over time and generations.

2. An equitable distribution of opportunities across communities, industries and other uses is achieved

This objective is focused on promoting equity for the large variety of uses. Opportunities include supporting Indigenous, rural and coastal communities, supporting equitable industrial development, and supporting the equitable distribution of opportunities across all users and uses. The scale of this objective can include communities, industries, and other collective and individual uses.

Text Box Economic 3: Policy Support for Economic Equity includes:

Sustainable Fisheries Framework ([Sustainable fisheries framework](#)): “the Policy is guided by the principle that the fishery is a common property resource to be managed for the benefit of all Canadians, consistent with conservation objectives, the constitutional protection afforded Aboriginal and treaty rights, and the relative contributions that various uses of the resource make to Canadian society, including socio-economic benefits to *communities*.” (*Scope of Application in Precautionary Approach, (2009)* and *Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas (2009)*)

Policy for Preserving the Independence of the Inshore Fleet in Canada’s Atlantic Fisheries, PIIFCAF, (Government of Canada, 2007); Section 1. Policy statement: “Assist fish harvesters to retain control of their enterprises, enhance access to capital from traditional lending institutions and maintain the wealth generated from fish harvesting in coastal communities.”

DFO-CG Reconciliation Strategy (Fisheries and Oceans Canada, 2019b); *Long-term Objectives*: Recognized Self-determination: “Indigenous groups effectively manage their own fisheries and other marine assets in their territories. Indigenous groups share in fisheries, oceans, aquatic habitat, and marine waterways decision-making.”

Fisheries Act (Government of Canada, 1985, Amended 2019) Section 2.5: Considerations for decision making – “consider,(i) the intersection of sex and gender with other identity factors”

New Access Framework (Fisheries and Oceans Canada, 2002b); The Principles; “Equity: Equity has both a procedural and a substantive component:

- Procedural Component: Access criteria must be applied in a fair and consistent manner through a decision-making process that is open, transparent and accountable and that ensures fair treatment for all.
- Substantive Component: The fishery is a common, public resource that should be managed in a way that does not create or exacerbate excessive interpersonal or inter-regional disparities.”

Gender-Based Analysis Plus (Government of Canada. 2025); Canada’s Commitment: “In Canada, GBA Plus is recognized as a key component to support the development of effective policies, programs, and legislation. GBA Plus provides federal officials with the means to continually improve their work and attain better results, by being more responsive to the diverse needs and circumstances of the populations they serve.”

Species at Risk Act (Government of Canada, 2002); Preamble: “community knowledge and interests, including socio economic interests, should be considered in developing and implementing recovery measures”

Economic References

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Appendix 6 – Social and Cultural Pillar Narrative

Social and Cultural Narrative

- A. [Sustainable Communities](#)
 - a. [Community sustainability is enhanced for current and future generations to thrive](#)
 - b. [Community resilience is supported](#)
 - c. [Community wellbeing is enhanced](#)
- D. [Health and Wellbeing](#)
 - a. [Health and physical welfare are fostered](#)
 - b. [The well-being of individuals, households and communities related to aquatic systems is fostered](#)
- E. [Ethical and Just Activities](#)
 - a. [Just and equitable aquatic activities are fostered](#)
 - b. [Ethical treatment of aquatic species is promoted](#)
- F. [Culture](#)
 - a. [History and heritage are recognized and respected](#)
 - b. [Culture is recognized and respected as alive and dynamic](#)
 - c. [Indigenous Peoples' right to practice and revitalize their cultural traditions and customs is recognized and respected](#)

Introduction

Social and cultural dimensions of aquatic resource management have generally not been formally considered in DFO decision making. The Social and Cultural Pillar of the EBM Framework helps to address this gap. It was co-developed by a task group of social scientists, and interdisciplinary researchers, internal and external to DFO, during EBM Workshops 2 and 3 and subsequent meetings as well as through continued engagement with the Maritimes EBM Working Group. The objectives listed within this pillar support an aspirational future for aquatic systems, including how they can contribute to thriving communities.

Social and Cultural objectives were kept broad and flexible so that they can be contextualized depending on the use of the EBM Framework and those involved. For example, to effectively implement objectives, management measures and/or decisions, it is important for them to be grounded in the perspectives and values of the relevant stakeholder and rights holders who are impacted by the decision being made.

The scope of the Social and Cultural Pillar is largely informed by departmental-specific policies and Canada Wide policies, while responding to the limited attention to social and cultural dimensions of aquatic resource management and ecosystem-based management the development of an ecosystem approach in DFO. In fact, there is considerable high-level policy

support for the inclusion of social and cultural considerations in departmental decision making. For example, the *Fisheries Act* (Government of Canada, 1985a), Section 2.5 references social, economic and cultural factors may be considered by the Minister when making a decision under the *Fisheries Act* (See text box Social and Cultural 1). Additionally, the preamble to the *Oceans Act* (Government of Canada, 1996) acknowledges the potential for the oceans and their resources to benefit all Canadians and coastal communities in particular. Further, the *Species at Risk Act* (Government of Canada, 2002) recognizes community knowledge and interests should be considered in recovery measures.

Objectives are also supported and supplemented by international guidance, such as the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (FAO, 2015), the FAO Code of Conduct for Responsible Fisheries (FAO, 1995), United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) as well as current best practices from peer-reviewed literature. For further details see the narrative for the Social/Cultural Pillar.

Core concepts from the original Canadian Fisheries Research Network Framework (Stephenson et al., 2018) were used to inform the selection of the four Main Objectives to be included in the Social and Cultural Pillar. As a whole, this pillar accounts for objectives for both individuals, households, and larger groups. For example, objectives related to individual wellbeing as well as community wellbeing were included.

Previous Main objectives in the updated EBM Framework (Daly et al., 2020), which were based on Stephenson et al., (2018) were: Sustainable Communities; Health and Wellbeing; and, Ethical Fisheries.

The content in this pillar has since been updated to include a Main objective - 'Culture'. The structure of the Social and Cultural Pillar contains four Main Objectives focused on:

- (1) Sustainable Communities,
- (2) Health and Wellbeing,
- (3) Ethical and Just Activities, and
- (4) Culture.

Overarching concepts that span these four areas include: resilience and the ability to thrive.

Text Box Social and Cultural 1: Policy Support for Social-Cultural Pillar includes:

Fisheries Act (Government of Canada, 1985); Section 2.5(g): “Except as otherwise provided in this Act, when making a decision under this Act, the Minister may consider, among other things, (g) social, economic and cultural factors in the management of fisheries”

Oceans Act (Government of Canada, 1996): “WHEREAS Canada recognizes that the oceans and their resources offer significant opportunities for economic diversification and the generation of wealth for the benefit for all Canadians, and in particular for coastal communities”

Departmental Sustainable Development Strategy 2020 to 2023 (Government of Canada, 2020);Section 2: Sustainable Development Vision and Context in Fisheries and Oceans Canada: “DFO is working with federal, provincial, territorial, and Indigenous partners to establish marine spatial plans in five key areas to better coordinate how we use and manage marine spaces to achieve ecological, economic and social objectives by 2024.”

Species at Risk Act (Government of Canada, 2002); Preamble: “community knowledge and interests, including socio economic interests, should be considered in developing and implementing recovery measures”.

Federal Sustainable Development Act (Government of Canada, 2008, updated 2019), s.7: “(b) the principle of intergenerational equity, which is the principle that it is important to meet the needs of the present generation without compromising the ability of future generations to meet their own needs”

Guidance: Gender-based Analysis Plus in Impact Assessment (Government of Canada, 2021b):

“Determinants of health are the broad range of personal, social, economic and environmental factors that determine individual and population health. These include (among others):

- Employment and working conditions
- Education and literacy
- Social supports and coping skills
- Healthy behaviours
- Access to health services
- Gender
- Culture
- Race / Racism”

Principles respecting the Government of Canada’s relationship with Indigenous Peoples Truth and Reconciliation Principles (Government of Canada, 2018); Guiding Principles 1: “This principle reflects the UN Declaration’s call to respect and promote the inherent rights of Indigenous peoples. This includes the rights that derive from their political, economic, and social structures and from their cultures, spiritual traditions, histories, laws, and philosophies, especially their rights to their lands, territories and resources.” (p. 5)

Canada Shipping Act (Government of Canada, 2001): “The objectives of this Act are to: a) protect the health and well-being of individuals, including the crews of vessels, who participate in marine transportation and commerce; b) promote safety in marine transportation and recreational boating; ...” (Part 1, Section 6)

International

Charlevoix Blueprint for Healthy Oceans, Seas and Resilient Coastal Communities (2018): “lays out the fundamental role the oceans and seas play “in the global climate system and in supporting communities, jobs and livelihoods, food security, human health, biodiversity, economic prosperity and way of life.” (p.2)

A. Sustainable Communities: Thriving communities are supported over the long term through the governance and management of aquatic activities.

Social and Cultural dimensions of communities such as relationships, quality of life and activities in play important roles in aquatic systems. In the absence of a DFO definition of community (Hamelin et al., 2024), community is defined here as social units, groupings or a network that capture aspects of life as they are lived and experienced together, including common values, interests and goals, based on Sirgy et al. (2010) and Sirgy (2018). Communities can be diverse and may change over time (Carlsson 2000 in Berkes, 2004). Examples of the breadth of communities that this Framework may include are those that are adjacent to, or in close proximity to, coastal, marine, or freshwater resources or impacted by activities in aquatic systems. Such communities may include Indigenous (both on and off reserves) and non-Indigenous communities with diverse interests, livelihoods, cultures and values (Sterling et al., 2020). In the context of this pillar, objectives related to sustainable communities focus on taking long-term perspectives to safeguard the interests of future generations so that social and cultural relationships, quality of life and activities can help manifest positive outcomes for community members (DFO ESSIM Plan, 2007). For example, communities use resources to meet their current needs while ensuring that adequate resources are available for future generations. Additionally, they seek a better quality of life for their residents while maintaining nature's ability to function over time (Qin et al., 2020).

Using the definition of sustainable communities above and drawing from the literature and policy statements relating to 'Sustainable communities', the Social and Cultural Pillar task group developed three level one objectives: (1) Community sustainability is enhanced for current and future generations to thrive, (2) Community resilience is supported and (3) Community wellbeing is enhanced. According to the literature, resilience, wellbeing and the ability to thrive can be considered interconnected elements of sustainable communities as their individual definitions overlap in the academic literature (Folke, 2016; Wiseman and Brasher, 2008; Loring et al., 2016; Brueckner-Irwin et al., 2019). The degree to which these objectives are desired and how and why these objectives apply can vary from community to community. Therefore, the objectives being developed here are intended to be general enough to apply to many contexts. Objectives may relate to different conceptualizations of communities, including socio-political units, geographically-bound communities, or groups of people who share aspects of life in common (Berkes, 2004; Sirgy, 2011). For example, there may also exist communities within communities such as Indigenous and non-Indigenous fishers, or fishers who use different gear types.

Importantly, there is policy support for the Main objectives of Sustainable Communities. For more policy support, see Text Box Social and Cultural 2.

1. Community sustainability is enhanced for current and future generations to thrive

Sustainability means meeting the needs of the present population without compromising the ability of future generations to meet their own needs and reflects the capacity to thrive over the long term (Prime Minister of Canada, 2018; United Nations Secretary-General, 1987). ‘Thriving’ is an important and emerging concept that relates closely to sustainability. For the purposes of the objectives in this section, thriving acknowledges that communities are in a constant state of change, but also captures the goal that they can be changing to more positive and aspirational directions (as recently described in Bennett et al., 2019). In general, thriving also refers to a community-wide sense of living a well and meaningful life that improves over time. Using the literature, it was theorized that thriving represents meeting all sub-candidate objectives for sustainability, community wellbeing, and resilience. Often in an upward trajectory, thriving connects closely with equity and moves beyond implications of ‘just surviving’. The concept of thriving is often juxtaposed against characterizations of communities that are surviving or even declining. Thriving includes meeting economic goals for communities such as financial success as well as non-monetary values and therefore which creates cross-references with the Economic Pillar objectives. These features are captured in five Level 2 Objectives.

Examples of policy statements that support community sustainability across generations include: “By taking action to adapt to the changing climate along with reaching net-zero emissions, we can build communities and economies that are able to thrive for generations to come (Canada’s National Adaptation Strategy, ECCC, 2023) and “Advance Bill C-68, the proposed reforms to the *Fisheries Act*, which seeks to restore lost protections, and incorporate modern safeguards so that fish and fish habitat are protected for future generations and so that Canada’s fisheries can continue to grow Canada’s economy and sustain coastal communities” (Prime Minister of Canada, 2018).

2. Community resilience is supported

Resilient communities are those that continue to thrive under pressure from either societal or environmental stresses arising either internal or external to those communities. Resilience can come from adapting to changes in ways that maintain the ways of life desired by those communities (Folke, 2016). Resilience is intentionally defined in a positive way to demonstrate the connection with the concept of thriving (see Thriving above). Community resilience is similar to ecological resilience referred to elsewhere in the framework, the capacity of a system to absorb disturbance and still retain/sustain its basic function and structure, but is more so about communities having the resources and capacities to respond to, withstand, and recover from adverse situations (Walker and Salt, 2012). Community resilience can be broad, from infrastructure considerations to sharing community knowledge and fostering stewardship (Magis, 2010).

Example policy statements include, “Further systematic integration of adaptation measures in infrastructure, health, environmental protection, economic development and emergency management services, are needed to support resilient and sustainable Indigenous communities”

(Government of Canada Adaptation Action Plan (GOCAAP) (2023) and “policies, strategies, plans and actions for improving small-scale fisheries governance and development are socially and economically sound and rational. They should be informed by existing conditions, implementable and adaptable to changing circumstances, and should support community resilience.” (FAO, 2015). Canada is also committed to a series of objectives related to “ Resilient Coasts and Coastal Communities” as part of the G7 Charlevoix Blueprint for Healthy Oceans, Seas and Resilient Coastal Communities (G7 Charlevoix Blueprint, 2018).

The following key considerations for community resilience are included in four Level 2 Objectives: demographic attributes such as population growth and age range, social cohesiveness obtained through networks and collaborative community organizations, the availability of alternative livelihoods, and the presence and maintenance of key infrastructure

3. Community wellbeing is enhanced

Community wellbeing is an important attribute of sustainable communities. Wellbeing at the community scale, is also known as ‘community wellbeing’. Community wellbeing is an important attribute of sustainable communities and is also included under "B Health and Wellbeing" below. Greater detail is provided under B2 "The wellbeing of individuals, households and communities related to aquatic systems is fostered".

Text Box Social and Cultural 2: Policy Support for Sustainable Communities includes:

Maritimes Regional Oceans Plan (Fisheries and Oceans Canada, 2014); Vision: “Healthy marine and coastal ecosystems, sustainable communities and responsible use supported by effective management processes” (p.7)

First-generation Marine Spatial Plan: Scotian Shelf and Bay of Fundy (Fisheries and Oceans Canada, 2024); Vision: “Healthy marine and coastal ecosystems and sustainable communities are supported through effective participation, management, and decision making processes.” (p.6)

Policy for Managing Impacts of Fishing on Sensitive Benthic Areas (Fisheries and Oceans Canada, 2009); Section 2.2 Scope: “The fishery is a common property resource to be managed for the benefit of all Canadians, consistent with conservation objectives, the constitutional protection afforded Aboriginal and treaty rights, and the relative contributions that various uses of the resource make to Canadian society, including socio-economic benefits to communities.”

Integrated Aboriginal Framework (Fisheries and Oceans Canada, 2007); Executive Summary: “The fundamental theme of DFO’s Integrated Aboriginal Policy Framework is on fostering a respectful and mutually beneficial relationship with Aboriginal groups who are seeking a greater share of the fisheries resource, on contributing to the growth and well-being of their communities, and on providing them with a greater role in integrated aquatic resource and oceans management.”

Fisheries Act (Government of Canada, 1985); s. 2.5 (e, f, g, h): “Except as otherwise provided in this Act, when making a decision under this Act, the Minister may consider, among other things, (e) community knowledge; (f) cooperation with any government of a province, and Indigenous governing body and any body – including a co-management body – established under a land claims agreement; (g) social, economic and cultural factors in the management of fisheries; (h) the preservation or promotion of the independence of license holders in commercial inshore fisheries”

Oceans Act (Government of Canada, 1996); Preamble: WHEREAS Canada recognizes that the oceans and their resources offer significant opportunities for economic diversification and the generation of wealth for the benefit for all Canadians, and in particular for coastal communities;”

Species At Risk Act (Government of Canada, 2002); Preamble: "community knowledge and interests, including socio economic interests, should be considered in developing and implementing recovery measures"

Marine Protected Areas Policy (Fisheries and Oceans Canada, 1999); Goals: “To contribute to the social and economic sustainability of coastal communities by providing for uses which are compatible with the reasons for designation”

International

FAO Code of Conduct for Responsible Fisheries (FAO, 1995): “Recognizing the important contributions of artisanal and small-scale fisheries to employment, income and food security, States should appropriately protect the rights of fishers and fishworkers, particularly those engaged in subsistence, small-scale and artisanal fisheries, to a secure and just livelihood, as well as preferential access, where appropriate, to traditional fishing grounds and resources in the waters under their national jurisdiction.”

B. Health and wellbeing: The health and wellbeing of individuals, households and communities are fostered through the governance and management of aquatic activities

There are two core overarching elements captured in two Level 1 Objectives: health and physical welfare and the wellbeing of individuals, households and communities.

Health is defined by the World Health Organization as “a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity”⁶⁷. Good health is a broad concept that includes quality of life and public health has foundations in social justice and health equity (Canadian Public Health Association, 2020). Further, health is a process as well as a status for people that constitute the complex and constantly evolving ecological, social, economic conditions of a community (Canadian Institute of Planners, 2024). Wellbeing “is the combination of social, economic, environmental, cultural, and political conditions identified by individuals and their communities as essential for them to flourish and fulfil their potential (Wiseman and Brasher, 2008, p.358). Additionally, well-being is when “human needs are met [and] one can act meaningfully to pursue one’s goals, and one enjoys a satisfactory quality of life” (Brueckner-Irwin et al.,2019, P. 6).

The concept of wellbeing is well-suited to a more holistic understanding of the relationships among people and nature. For instance, wellbeing goes beyond economic measures such as GDP to enhance decision making for sustainability and resilience (Loring et al., 2016; Brueckner-Irwin et al., 2019). Wellbeing in the EBM framework encompasses individual, household and community wellbeing addressing three dimensions: subjective, material and relational wellbeing (Weeratunge et al., 2014; Breslow et al., 2016; OECD⁶⁸, 2013).

Health and wellbeing in the context of aquatic activities are relevant because marine activities can be inherently dangerous, occurring in unpredictable contexts and at times in remote locations which have a number of potential direct and indirect impacts on individuals and communities. Therefore, substantial components of health and wellbeing as it relates to sustainable use of ocean resources are decent employment and decent working conditions. The International Labour Organization (ILO) defines decent work as productive work with a fair income, with a secure workplace, with social protection, with equal opportunity and treatment of men and women, that allows for personal and professional development, that allows for social integration, and promotes freedom for employees to express their concerns⁶⁹.

1. Health and Physical Welfare are fostered

Relevant dimensions of human health may include physical, mental, and spiritual health and overall holistic welfare (Hjelm, 2010). This objective is informed by labour and occupational health and safety goals as well as secure access both physical and economic) to affordable food to meet dietary needs (i.e., nutrition) for a productive and healthy life (e.g., FAO, 1995). For

⁶⁷ <https://www.who.int/about/governance/constitution>

⁶⁸ [Measuring well-being and progress | OECD](https://www.oecd.org/measuring-well-being-and-progress/)

⁶⁹ <https://www.ilo.org/topics-and-sectors/decent-work>

example, “Promote the contribution of fisheries to food security and food quality, giving priority to the nutritional needs of local communities” (Code of Conduct for Responsible Fisheries, FAO, 1995). Another key aspect of this objective is distinguishing the difference between employment (i.e., having a job) and working conditions (e.g., the physical conditions and mental demands of a person's employment).

There are also number of regulations and programs that directly impact and mediate occupational health and safety outcomes such as the Diving Safety Program⁷⁰, Occupational Health & Safety Awareness⁷¹, and the Small Craft Harbours’ Abandoned and Wrecked Vessels Removal Program⁷². There are also additional, related challenges that can influence working conditions and retention, such as access to training, income, employment alternatives, crew turnover (FAO, 2016) and industrial structure (e.g., patterns of ownership and control) (Windle et. al., 2008). DFO-CCG is responsible for search and rescue as well as marine communications and traffic services as per the *Oceans Act* (1996) and Transport Canada is leading policies on marine transportation including Fishing Vessel Safety Regulations (2017).

As fishing is one of the most dangerous livelihoods worldwide⁷³ (ILO, 2007), the FAO Code of Conduct for Responsible Fisheries (FAO, 1995) contains a number of relevant objectives including “States should ensure that health and safety standards are adopted for everyone employed in fishing operations. Such standards should be not less than the minimum requirements of relevant international agreements on conditions of work and service” (Section 8.1.5)” and that “States should ensure that fishing facilities and equipment as well as all fisheries activities allow for safe, healthy and fair working and living conditions” (section 6.17).

Three Level 2 Objectives are directed specifically to human health, occupational health, and safety. As they specifically relate to food security and nutrition, Level 3 Objectives speak to access to local seafood, good nutrition, and food quality.

2. The wellbeing of individuals, households and communities related to aquatic systems is fostered

Wellbeing considers diverse factors essential to “flourish and fulfill their potential” (Wiseman and Brasher, 2008, p.358). Following these dimensions, wellbeing is recognized as a way to assist in assessing and anticipating social goals related to marine resources, including and beyond economic returns. It is also a useful concept for understanding diverse elements, such as human values, that impact the ability of individuals and communities to be well, to thrive and to be resilient, as they pursue a good life related to aquatic resources and activities (Brueckner-Irwin et al., 2019, P. 6). For example, capacities, goals, preferences, and behaviours of people. In Canada, the Canadian index for Wellbeing is a tool to explore and assess dimensions of wellbeing beyond GDP (Canada Index of Wellbeing, 2016). Nationally, there are a number of community

⁷⁰ <https://www.dfo-mpo.gc.ca/science/data-donnees/diving-plongee/index-eng.html>

⁷¹ <https://waves-vagues.dfo-mpo.gc.ca/Library/280529.pdf>

⁷² <https://www.dfo-mpo.gc.ca/sch-ppb/vessels-bateaux/index-eng.html>

⁷³ <https://news.un.org/en/story/2019/11/1051941>

wellbeing objectives featured within the United Nations Declaration of Indigenous Peoples Action Plan (Government of Canada, 2023), e.g., “81. Improve health equity through access to culturally-appropriate health and wellness services and support for holistic approaches to healing, including community-based, land-based, culturally relevant and trauma informed mental health services addressing – among other things – suicide and addictions crises”. Internationally, the FAO Technical Guidelines for Indicators of sustainable development of marine fisheries (FAO, 1999) states: “...sustainability of activities that provide for human well-being depends on the maintenance of environmental functions which themselves, directly and indirectly, contribute to human welfare” p9.

White (2008) developed a three-dimensional theory of wellbeing that is commonly referenced in fisheries and ocean settings and used here to structure the wellbeing objectives:

- Material (e.g., often related to economic possessions such as obtaining goods, income, wealth, assets),
- Subjective (e.g., aligned with values such as enjoyment, perceptions of self and positive relationships associated to access of aquatic systems) and
- Relational (connected to quality of relationships and associations with others such as trust, lack of violence and discrimination)

Wellbeing can also be studied at different scales, ranging from the individual to the global (Weeratunge et al., 2014; Wiseman and Brasher, 2008). Individual wellbeing focuses on the ‘micro-scale’ to understand how and why individuals make decisions in the context of aquatic systems in pursuit of a meaningful life (Weeratunge et al., 2014). Investigating household wellbeing, another micro-scale lens, focuses on the capacities, assets, experiences, and relationships of individuals that share a household, highlighting the household as an important place where dynamics among individuals come together to shape wellbeing (Wiseman and Brasher, 2008, p.358). Community wellbeing is more than aggregating individual or household wellbeing as it considers a range of dimensions that shape the collective experience of wellbeing (Atkinson et al., 2017). Further, the role of intergenerational knowledge transfer is a defining characteristic of community wellbeing as it holds the fabric of communities together by teaching concepts of equity and how to improve health and wellbeing. It is important to distinguish between individual, household and community wellbeing as there can be situations in which communities may be considered well, but individuals may not, and vice versa. Community wellbeing is also distinct from sustainable and resilient communities, although they are interrelated. There are situations in which communities can be sustainable and resilient, but wellbeing may be low. Conversely, wellbeing may be supported, but in unsustainable ways. These contrasts help demonstrate the connections and the concept of ‘thriving’.

Assessing and measuring wellbeing across scale and across White’s 3 dimensions is ideal, since it can reveal diverse experiences and drivers of different aspects of wellbeing among individuals and households within a community (Weeratunge et al., 2014). Although the EBM framework acknowledges these multiple scales of wellbeing, all scales are grouped together in the three Level 2 objectives, but are intended to be parsed out as these objectives are further unpacked.

Text box Social and Cultural 3: Policy support for Health and Wellbeing includes:

*Canada's Ocean Protection Plan** (2016); The Plan: Summary: "This plan will engage communities, first responders, and governing authorities to work together effectively to respond to emergencies"

An Integrated Aboriginal Policy Framework (Fisheries and Oceans Canada, 2007); Executive Summary: "The fundamental theme of DFO's Integrated Aboriginal Policy Framework is on fostering a respectful and mutually beneficial relationship with Aboriginal groups who are seeking a greater share of the fisheries resource, on contributing to the growth and well-being of their communities, and on providing them with a greater role in integrated aquatic resource and oceans management."

*Fisheries and Oceans Canada Departmental Plan*** (2024-2025); Quality of life impacts: "Canada's Quality of Life Framework contains five domains, which were selected based on evidence of the determinants of well-being to reflect what matters most for quality of life in Canada."

Memorandum of Understanding between Fisheries and Oceans Canada (DFO) and Transport Canada (TC) regarding safety at Sea of Commercial Fish Harvesters (2014); s. 2. Objective: "Establish principles that take into account the promotion of a safety culture among commercial fish harvesters"

Federal Sustainable Development Strategy 2022-2026 (ECCC, 2022): "The [Federal Sustainable Development] Act's purpose now goes beyond transparency and accountability to include advancing sustainable development in Canada with a view to improving Canadians' quality of life" (p.9)

International

FAO Code of Conduct for Responsible Fisheries (FAO, 1995):

Objectives: (f) "Promote the contribution of fisheries to food security and food quality, giving priority to the nutritional needs of local communities"

5.13: "States and all those engaged in fisheries management should adopt measures for the long-term conservation and sustainable use of fisheries resources and to secure the ecological foundation for food production."

6.16: "All parties should recognize the complexity that surrounds safety-at-sea issues (in inland and marine fisheries) and the multiple causes behind deficient safety. This applies to all fishing activities."

FAO Technical Guidelines for the ecosystem approach to fisheries (FAO, 2003); Annex 2, Improving human well-being and equity: "With a view to improving human well-being, governance should endeavour to 'establish and preserve inter-generational, intra-generational, cross-sectoral, cross-boundary and cross-cultural equity."

Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (FAO, 2015); s6.16: "All parties should recognize the complexity that surrounds safety-at-sea issues (in inland and marine fisheries) and the multiple causes behind deficient safety. This applies to all fishing activities." (p.10)

* https://tc.canada.ca/sites/default/files/migrated/oceans_protection_plan.pdf

** <https://www.dfo-mpo.gc.ca/dp-pm/2024-25/index-eng.html>

C. Ethical and Just Activities: Historic inequities and injustices are acknowledged, and all aquatic activities are undertaken in a respectful, ethical and just manner, including the consideration of Reconciliation with Indigenous Peoples and Gender Based Analysis (GBA)

Ethics, or equity, and justice are interrelated concepts that can capture similar goals, however there are key differences. “Ethics refers to well-based standards of right and wrong that prescribe what humans ought to do, usually in terms of duties, principles, specific virtues, or benefits to society” (Svara, 2015). As such, ethical processes and decision making are intended to lead to equitable and fair outcomes. Equity is sometimes understood as fairness among people or groups and over time. For example, all peoples have equal access to the justice system, including equitable protection of rights. Equality is closely linked with social equity the assurance that people are treated the same (Bennett et al., 2021), for example as it relates to distribution of benefits. Justice is the removal of barriers to equity resulting in fair and reasonable outcomes.

As it relates to DFO, a number of policies exist that echo the responsibility for decision processes and outcomes to be equitable (this Main Objective also relates to Governance Structures and Processes, and Outcomes). The *Constitution Act* (Government of Canada, 1982) states that Federal and Provincial governments “are committed to (a) promoting equal opportunities for the well-being of Canadians” (s.36(1)(a)). Recently the 2023-2024 Departmental Plan committed “to foster diversity and inclusion among its employees.” (Fisheries and Oceans, Canada, 2023, p.3). Further, a high-level statement from the Treasury Board Values and Ethics Code asserts that “Public servants shall use resources responsibly by: Considering the present and long-term effects that their actions have on people and the environment” (Government of Canada, 2011, s.4.2, p5). Additionally, from an international perspective, the FAO Code of Conduct for Responsible Fisheries (FAO, 1995) recognizes the importance of artisanal and small-scale contributions:

“to employment, income and food security, States should appropriately protect the rights of fishers and fishworkers, particularly those engaged in subsistence, small-scale and artisanal fisheries, to a secure and just livelihood, as well as preferential access, where appropriate, to traditional fishing grounds and resources in the waters under their national jurisdiction.” (s6.18)

Lastly, the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (FAO, 2015) include guiding principles on non-discrimination and gender equality: Guiding Principle 3. “Non-discrimination: promoting in the small- scale fisheries the elimination of all kinds of discrimination in policies and in practice” and Guiding Principle 4. “Gender equality and equity is fundamental to any development. Recognizing the vital role of women in small-scale fisheries, equal rights and opportunities should be promoted.”

In two Level 1 Objectives of ethical and just activities relevant to DFO are unpacked: core dimensions of just and equitable activities and ethical treatment of aquatic species. These objectives relate to principles/concepts of Ethical and Just Activities that direct how people from diverse groups should be included in marine activities and provide considerations for redressing

historical injustices, guiding ethical treatment, and recognising intersectionality (e.g., Gender Based Analysis+). Further policy support can be found in Text Box Social and Cultural 3.

1. Just and equitable aquatic activities are fostered

This objective strongly overlaps with fairness and is outlined as an aspirational outcome that encompasses a number of considerations. For example, one of the goals of the Canadian Governments Gender Results Framework⁷⁴ is “Promoting gender equality to build a more peaceful, inclusive, rules-based and prosperous world” and Guiding Principle 5 of the FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries “Equity and equality: promoting justice and fair treatment – both legally and in practice – of all people and peoples, including equal rights to the enjoyment of all human rights” (FAO, 2015; p.2). Three core dimensions of just activities were used to structure sub-objectives: 1) recognition; 2) distribution; and, 3) procedure.

Recognitional equity refers to acknowledging and incorporating the legitimacy of rights, values, interests, priorities, and human dignity into aquatic management.

Distributional equity is about the ‘fairness’ of the distribution of costs of marine management and how the benefits are shared among rights holders and stakeholders. This concept also overlaps with the Economic Pillar.

Procedural equity describes the inclusion and effective participation of all relevant actors in processes of decision making for marine management, including decisions related to ocean management, access to justice and resolving disputes, or identifying and assessing the costs and benefits associated with marine management. This concept is also included in the Governance Pillar under B. Governance Structures and Processes.

Academics and practitioners have developed criteria for the three core dimensions, according to Franks and Schreckenburg (2016), Zafra-Calvo et al., (2017), which frame the three Level 2 Objectives in this section.

2. Ethical treatment of aquatic species is promoted

The ethical treatment of aquatic species can be direct, through interactions and research, as well as indirect, as in decisions. For instance, examples from the Marine Mammal Regulations (Government of Canada, 1993) include : “treatment of aquatic species is to be guided by compassion and in a way that does not cause undue harm to the animal; No person shall attempt to kill a marine mammal except in a manner that is designed to kill it quickly (S.7[8]); No person shall fish for a marine mammal without having on hand the equipment that is necessary to retrieve it (S.7[9]); and “No person who kills a cetacean or walrus shall waste any edible part of it” (S.7[10.2]).

⁷⁴ [Gender Results Framework placemat - Canada.ca](https://www150.comma.ca/gender-results-framework-placemat)

There is no federal legislation in Canada that governs animal-based research. Sections 444-447 of the Criminal Code of Conduct (Government of Canada, 1985b) is the closest, however is primarily animal treatment for the purposes of food but excludes fish and chicken. Non-legislative guidance in Canada is governed by the Canadian Council on Animal Care who uphold “internationally recognized standards of animal care and use in research, teaching, and testing” and have a number of policies to outline acceptable behaviour in the case that the use of or interactions with animals, such as teaching, research and testing is deemed acceptable (CCAC, 2023). Two Level 2 Objectives encompass these elements.

Text Box Social and Cultural 4: Policy Support for Ethical and Just Activities includes:

New Access Framework (Fisheries and Oceans Canada, 2002); The Principles; “9.1.3 Equity: At a substantive level, the equity criterion is premised on the concept of the fishery as a common, public resource that should be managed in a way that does not create or exacerbate excessive interpersonal or inter-regional disparities.”

*Fisheries and Oceans Canada Departmental plan (2025-26)**; Related government priorities: “The Department will continue to use gender-based analysis plus (GBA Plus) to understand who is impacted by the issues or opportunities being addressed by the Department’s initiatives, identify how the initiative could be tailored to meet diverse needs of the people most impacted, and anticipate and mitigate any barriers to accessing or benefitting from this initiative”

*Canadian Council on Animal Care Policies** (CCAC Certificate of GAP – Good Animal Practice®)* (Accessed 2023): The Canadian Council on Animal Care (CCAC) assesses and certifies animal ethics and care programs of organizations conducting animal-based work in research, teaching and testing

Federal Sustainable Development Act (Government of Canada, 2008); Basic Principle: “5(b) the principle of intergenerational equity, which is the principle that it is important to meet the needs of the present generation without compromising the ability of future generations to meet their own needs”

United Nations Declaration of Indigenous Peoples (UNDRIP) Act (Government of Canada, 2021): (2) The action plan must include (a) measures to:

- (i) address injustices, combat prejudice and eliminate all forms of violence, racism and discrimination, including systemic racism and discrimination, against Indigenous peoples and Indigenous elders, youth, children, women, men, persons with disabilities and gender-diverse persons and two-spirit persons, and
- (ii) promote mutual respect and understanding as well as good relations, including through human rights education; and

International

FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries (FAO, 2015):

Objectives 1.1: “d) to promote the contribution of small-scale fisheries to an economically, socially and environmentally sustainable future for the planet and its people, “

FAO Technical Guidelines for the ecosystem approach to fisheries (FAO, 2003); Annex 2, Improving human well-being and equity: “With a view to improving human well-being, governance should endeavour to ‘establish and preserve inter-generational, intra-generational, cross-sectoral, cross-boundary and cross-cultural equity.”

* <https://www.dfo-mpo.gc.ca/dp-pm/2025-26/index-eng.html>

** <https://ccac.ca/en/guidelines-and-policies/the-guidelines/>

D. Culture: Significant, diverse, historical and living aspects of heritage and culture related to aquatic systems are recognised and considered in governance and management.

Culture is a fluid concept, including in relation to natural resource systems. According to UNESCO (2002) culture can be defined as a "set of distinctive spiritual, material, intellectual, and emotional features of society or a social group that goes beyond art and literature to include lifestyles, ways of living together, value systems, traditions, and beliefs". Culture reflects material and non-material aspects of natural resource systems imbued with meaning by social groups over time.

Therefore, both tangible (e.g., a valuable commodity such as an artifact or something that offers material benefits) and intangible (e.g., non-material benefits such as spiritual benefits, a set of relationships, a place, an event or practice,) cultural elements and aspects have been recognized to play an important role in the environmental, historical, or cultural life of a given community (i.e., values and identities) (Waterton and Watson, 2015). While cultural elements and aspects hold meaning over time, this meaning evolves and is influenced by social-ecological changes in aquatic systems. Such aspects can reveal the distinctiveness of a society as well as have overwhelming value to certain communities (UNESCO, 2014).

Culture informs personal identities and how we see and experience nature. Nature can also shape our culture and heritage. Culture can be an agent and process of communication and relationship building in addition to external things and activities that may need to be preserved and protected. For the purposes of the Maritimes EBM framework, we acknowledge the various understandings and experiences of culture (e.g., ways of being, worldviews, relationships, identities, practices) that are significant to communities, stakeholders and rights holders. Both the history and heritage (i.e., the past) and the living and evolving nature of culture (i.e., present and future) are recognized in the objectives. Culture can also be conceptualized within ecosystem services as cultural services, and objectives and actions that support cultural wellbeing (Millennium Ecosystem Assessment, 2005).

Objectives relating to culture and cultural traditions/practices associated with aquatic systems, such as fishing and other activities, have in some cases endured for generations and are relevant for informing decision making. Cultural considerations should be recognized in planning and protected in practice, but thus far have been largely absent. However, related discussions are currently prevalent within national and international discourses as 'cultural heritage' (UNESCO, 2002, UNDRIP (United Nations, 2007), UNDA (Government of Canada, 2021a), Bill C-23 (Government of Canada, 2022a⁷⁵). References to culture in current DFO and Canadian policy tend to be general, therefore the high-level objectives have been developed based on additional guiding literature and expertise. For example, Canada's National Framework for a Network of Marine Protected Areas states the following "To enhance public awareness and appreciation of

⁷⁵ Note that the Historic Places of Canada Act was tabled as Bill C-23, in Parliament on June 7, 2022: [Historic Places of Canada Act - Summary of Legislation - Canada.ca](#); [Bill C-23: Historic Places of Canada Act](#)

Canada’s marine environments and rich maritime history and culture”, Fisheries and Oceans Canada, 2011, p.6). The DFO-CG Maritimes Reconciliation Strategy (Fisheries and Oceans Canada, 2019) has the following guiding principle: “Adjust approaches based on geographic, cultural, social, economic, and capacity needs and differences “. Therefore, specificity was added in the level one objectives through expert knowledge and reference to current literature, including the living and ever-changing dimension of culture (UNESCO, 2014; Waterton and Watson, 2015).

Efforts supporting the spirit of this section includes the Official Languages Act (Government of Canada 1985c as well as a number of recent Bills relating to Indigenous Languages. For instance, the Government of Nova Scotia Bill – 148 Mi’kmaw Language Act (Government of Nova Scotia, 2022) and Bill C- 91, Indigenous Languages Act⁷⁶ (tabled in 2019) as well as others in Text Box Social and Cultural 4.

Therefore, the following three Level 1 Objectives are focused on for the purposes of this framework: (1) History and heritage; (2) culture is alive and dynamic, and (3) Indigenous Peoples rights to cultural traditions and customs.

1. History and heritage are recognized and respected

This objective reflects the idea that history and heritage are past aspects of culture that give rise to people’s present-day sense of personal identity (Smith, 2006). This includes coastal and maritime heritage (Ounanian et al., 2021). It is a version of the past received through the tangible and intangible things (e.g., objects and artefacts) and practices (e.g., events, commemorations, certain places) that people attach meaning to (Waterton and Watson, 2015, p.1). However, this does not mean that all historical and present day cultural practices should be preserved. For example, expressions that include or display violence, racism, gender segregation (e.g., no females allowed on boats), etc.

Language, for example, can represent intangible history and heritage as it is developed and shared over time. Examples of policy statements that support language include:

“Whereas Parliament recognizes that historic places encompass tangible and intangible features and may be cultural landscapes that represent the combined works of nature and humankind and that illustrate the relationship between peoples and lands” (Bill C-23, [Bill C-23: Historic Places of Canada Act](#), Government of Canada, 2022a)

“English and French are the official languages of Canada and have equality of status and equal rights and privileges as to their use in all institutions of the Parliament and government of Canada (Official Languages Act, Government of Canada, 1985c)

“Whereas Indigenous peoples have played a significant role in the development of Canada and Indigenous languages contribute to the diversity and richness of the linguistic

⁷⁶ <https://www.justice.gc.ca/eng/csj-sjc/pl/charter-charte/c91.html>

and cultural heritage of Canada; (Indigenous Languages Act, Government of Canada, 2019)

The distinction of tangible and intangible elements of history and heritage frame two Level 2 Objectives.

2. Culture is recognized and respected as alive and dynamic

As culture can continuously evolve, this objective recognizes that past and present cultural aspects (i.e., tangible and intangible) are dynamic and may continue to change into the future. Both the history and heritage (i.e., the past) and the living and evolving nature of culture (i.e., present and future) are recognized. A statement in Canada's National Adaptation Strategy (ECCC, 2023) acknowledges that "the environment also supports our recreational, health, and spiritual needs. Many of our cultural identities are closely tied to our connection with the natural environment, where the intrinsic value of nature shapes our sense of self and connection to the land" (p.7)

The United Nations Declaration on the Rights of Indigenous Peoples (United Nations, 2007, Article 31) also recognizes that cultural expressions and activities can evolve: "Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions". The three Level 2 Objectives here include diverse intangible and tangible forms of current culture are connected to values and identity, activities and relationships.

3. Indigenous Peoples' right to practice and revitalize their cultural traditions and customs is recognized and respected

Many Aboriginal communities and organizations have a strong interest in conserving marine resources for cultural, subsistence and economic reasons" (National Framework for Establishing and Managing Marine Protected Areas, 1999). Indigenous considerations relating to culture are distinct and thus placed in a separate level one objective with six areas:

- a. Languages and dialects;
- b. Food, social and ceremonial (FSC) fisheries;
- c. Spirituality and values associated with interconnections with flora and fauna, such as culturally significant species and sacred land;
- d. Ceremonies and rituals, such as powwows and smudging;
- e. Traditional medicines and Indigenous health practices; and
- f. Fundamental treaty education.

Many of these elements are in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) (2007), which is referenced and supported through various Canadian policies including the UNDRIP Act (2019), the UNDRIP Action Plan (2023), DFO- Coast Guard Reconciliation Strategy (2019) and DFO - Coast Guard (Maritimes) Reconciliation Strategy (2019). In particular, this objective acknowledges and embraces different value systems and

manifestations of culture, including how nature is reflected in Indigenous Ways of Being through “sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, sports and traditional games and visual and performing arts” as well as “They also have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions.” (UNDRIP, United Nations, 2007, Article 31).

Further, the Kunming-Montreal Global Biodiversity Framework (United Nations, 2022) recognizes different values systems: “Nature embodies different concepts for different people, including biodiversity, ecosystems, Mother Earth, and systems of life. Nature’s contributions to people also embody different concepts, such as ecosystem goods and services and nature’s gifts. Both nature and nature’s contributions to people are vital for human existence and good quality of life, including human well-being, living in harmony with nature, living well in balance and harmony with Mother Earth. The framework recognizes and considers these diverse value systems and concepts, including, for those countries that recognize them, rights of nature and rights of Mother Earth, as being an integral part of its successful implementation” (Section C.7(b)).

For example, an ‘intangible’ Mi’kmaq cultural view is that all of life is related and that non-human animal should be honored as siblings and persons (Robinson, 2014).

Currently, the six Level 2 Objectives listed here were informed by existing Provincial, National and International legal structures and initiatives with the intention of taking action towards reconciliation. These have also been informed by and reviewed through the on-going collaborative project with the Atlantic Policy Congress⁷⁷.

⁷⁷ All reports from the APC project will be available on the APC website: <https://www.apcfn.ca/>

Text Box Social and Cultural 5: Policy Support for Culture includes:

Fisheries Act (Government of Canada, 1985), C. F-14, S. 2.5: “Except as otherwise provided in this Act, when making a decision under this Act, the Minister may consider, among other things, g) social, economic and cultural factors in the management of fisheries”

DFO-CG Reconciliation Strategy (Fisheries and Oceans Canada, 2019); Long-term objectives, Reduced Socio-Economic Gaps: “Indigenous groups have appropriate food, social, ceremonial (FSC) and commercial fish access. Indigenous groups participate in a variety of economic development opportunities (e.g., fish harvesting, aquaculture, marine infrastructure).”

National Framework for Identifying, Establishing, and Managing Ecologically Significant Areas (Fisheries and Oceans Canada, 2023a); Guiding Principle 7: “DFO recognizes and considers ecological, social, cultural, and economic values and interests potentially affected by ESA implementation.”

Fisheries and Oceans Canada Departmental Plan (2023-2024), Fisheries and Oceans Canada, 2023b): “We recognize that fisheries, oceans, aquatic habitat, and marine waterways hold tremendous social, cultural, spiritual, and economic importance, and we are committed to building renewed Nation-to-Nation, Inuit-Crown, and government-to-government relationships with First Nations, Inuit, and Métis Peoples”

United Nations Declaration on the Rights of Indigenous Peoples Action Plan (Government of Canada, 2023a): *Article 25*: “Indigenous Peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard”(p.86)

United Nations Declaration of Indigenous Peoples (UNDRIP) Act (Government of Canada, 2021a); Preamble: “And whereas measures to implement the Declaration in Canada must take into account the diversity of Indigenous peoples and, in particular, the diversity of the identities, cultures, languages, customs, practices, rights and legal traditions of First Nations, Inuit and the Métis and of their institutions and governance structures, their relationships to the land and Indigenous knowledge”

National Framework for Canada’s Network of Marine Protected Areas (Fisheries and Oceans Canada, 2011): “To enhance public awareness and appreciation of Canada’s marine environments and rich maritime history and culture” (p.6).

Bill C-23: Historic places of Canada Act (Government of Canada, 2022)*: “An Act respecting places, persons and events of natural historic significance or national interest, archaeological resources and cultural and natural heritage”... “is a legislative project to ensure the continued stewardship of historic places in Canada”. NB: this Bill C-23 did not become law.

Achieving a Sustainable Future: A Federal Sustainable Development Strategy for Canada from 2022 to 2026 (ECCC, 2022): 11.4 “Strengthen efforts to protect and safeguard the world’s cultural and natural heritage”

An Integrated Aboriginal Policy Framework (Fisheries and Oceans Canada, 2007); a) Guiding Principles: “Be respectful of Aboriginal peoples and their communities, their rights, values and aspirations”

* <https://www.parl.ca/documentviewer/en/44-1/bill/C-23/first-reading>

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Appendix 7 - Report of the 3rd DFO Ecosystem Based Management
Workshop – Reuniting the 4 Pillars

DFO Ecosystem Based Management Workshop –
Reuniting the 4 Pillars

25th - 26th Jan, 8th Feb, 2022

Alida Bundy, Sondra Eger, Max Westhead

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DFO Ecosystem Based Management Workshop – Reuniting the 4 Pillars

OVERALL OBJECTIVE: To re-unite the 4 pillars of the Maritimes EBM Framework to develop a comprehensive tool to support sustainable, holistic decision making

PARTICIPANTS: DFO EBM Working Group and members of the EBM Task Groups working on the 4 Pillars

FORMAT: Online

DATES: Tuesday January 25th (1 pm-4:30 pm), Wednesday 26 Jan, 8:30 am – 12:00 pm, Tuesday 8 Feb, 8:30 am– 12:00 pm 2022. Please note that All times are Atlantic Standard Time (AST)

Introduction

The DFO Ecosystem Based Management (EBM) WG was formed in January 2020 and is developing an holistic EBM Framework that encompasses ecological, social (including cultural), economic and governance objectives, that is, full spectrum sustainability Figure 1, (Stephenson et al., 2019, Foley et al., 2020). The EBM Framework is being designed to be relevant and useful for sustainable, holistic decision making across the Department. It is grounded in DFO and Canadian government policy and legislation, ensuring that it reflects current policy and Sector needs. Two previous EBM workshops have been held, the first in 2019 (Daly et al., 2020) and the second in January 2021 (Bundy et al., 2021). Since the second workshop, collaborative task groups for each of the 4 Pillars of the EBM Framework have been meeting to further develop and unpack objectives. The objectives of this workshop were to review progress on 4 Pillars of the EBM Framework, to ensure consistency across the 4 pillars, to identify gaps or concerns, to reunite the 4 Pillars in one framework, and to discuss use and applications of the EBM Framework. The overarching goal of the workshop was to achieve a *“common vision for the EBM Framework, agreed upon objectives and next steps.”*

Workshop participants were task group members from the EBM WG, DFO Sectors and external social science colleagues from academia (see Appendix 3A for attendee list). The workshop took place virtually over three days (Tuesday January 25th (1 pm-4:30 pm), Wednesday 26 Jan, 8:30 am – 12:00 pm, Tuesday 8 Feb, 8:30 am– 12:00 pm 2022). See Appendix 3B for the Agenda.

The workshop began with an overview of the scope and objectives of the workshop, followed by presentations of the 4 EBM Pillars and discussion (Days 1 -2). The third day of the workshop took place 12 days later, during which the edits and suggested changes were incorporated into the four pillars for further discussion. The report below provides a summary of the workshop.

Pillars	Candidate Objectives
Ecological	Productivity Biodiversity Habitat
Economic	Prosperity Sustainability Equity
Social & Cultural	Sustainable Communities Health & Wellbeing Ethical & Just Activities Indigenous & other Cultures
Governance	Legal Obligations, including to Indigenous Peoples Governance Structures Decision-Making

Figure 1. The scope of the draft Maritimes Region EBM Framework

Day 1: Tuesday 25th January, 1:00 – 4:00 PM AST

Chairs: Alida Bundy, Max Westhead

Notes: Catherine Thompson, Sondra Eger

DFO EBM Workshop Scope and Objectives

Presenter: Dr. Alida Bundy, Ocean and Ecosystem Sciences Division, Science Branch, Bedford Institute of Oceanography

Presentation Summary:

Following an outline of the purpose and goals of the workshop, workshop participants were reminded of the 4 Pillars of the EBM Framework (Ecological, Economic, Social and Cultural, and Governance) and the corresponding task groups and teams that have been developing them. A summary of Indigenous engagement that has occurred to date on the framework was provided, including an EBM Framework Information Session for Indigenous organizations, held in July 2021. The five broad ways that the framework could be applied were highlighted: 1) As a checklist of core elements of objectives; 2) as a basis for identifying alternate management

objectives; 3) as a framework for scenario comparison; 4) as a report card for fisheries plans; and 5) as a practical framework for implementation of EAM/IM. Lastly, the workshop agenda was presented.

The EBM planning committee developed the following guiding questions for Day 1 of the workshop:

- Does the range of objectives across the 4 pillars form a comprehensive framework?
- Is there good balance across the pillars and objectives?
- What are the linkages/interconnections between pillars (e.g., cross-cutting concepts/objectives)?
- Is there duplication of objectives across pillars?
- Is the scope of the framework sufficient (i.e., are there any gaps)?

Pillar Presentation 1 – Ecological Pillar

Presenter: Dr. Alida Bundy, Ocean and Ecosystem Sciences Division, Science Branch, Bedford Institute of Oceanography

Summary of Discussion:

Workshop participants acknowledged the progress that has been made with the Ecological Pillar. In the past, productivity was the primary ecological objective considered in DFO decision making. The spectrum of ecological considerations has now broadened to include objectives related to biodiversity, and habitat. There was a recognition among some participants that there will be inherent conflict among and within pillars and that some form of evaluation of tradeoffs or of prioritization of objectives is inevitable. Participants **noted the importance of considering** the role of Indigenous Traditional Knowledge (ITK) in the Ecological Pillar. For example, they asked how ITK can inform ecological objectives? It was noted that clarity is needed on how aquatic invasive species (AIS) are considered within this pillar.

Pillar Presentation 2 – Economic Pillar

Presenter: Cory Large, Economic Research Division, Policy & Economics Branch, Bedford Institute of Oceanography

Summary of Discussion:

Participants expressed appreciation of the progress made on the Economic Pillar. There was a general concern about balance and prioritization language in the economic objectives that were presented. In particular, language around maximizing economic benefits was thought to sacrifice ecological considerations and therefore caveats to the term “maximize” must be communicated clearly in the framework. There was a general acknowledgement from participants that the Economic Pillar has been largely developed separately from the other pillars and that moving forwards, development of the pillar would benefit from greater interaction with the other pillar task groups. Specific objectives were flagged where language needs to be altered to be more positive and aspirational. Lastly, participants discussed the use of the term “values” in the

Economic Pillar versus the other pillars. Specifically, it was noted that the term must be clear and consistent throughout the framework.

Pillar Presentation 3 – Social and Cultural Pillar

Presenter: Dr. Evan Andrews, Department of Geography, Memorial University of Newfoundland

Summary of Discussion:

Participants congratulated the Social and Cultural Task Group on the progress made. As at the previous EBM workshop in 2021, participants expressed concern around the lack of inclusion of Indigenous considerations in the framework and how to proceed. Two suggestions for moving forward were made. The first suggestion was for the broader framework to include, in more detail, Indigenous policy. The second suggestion was to initiate a separate process for considering Indigenous perspectives in the development of objectives. Participants agreed that the longer this issue is left partial, the greater the risk for alienating Indigenous voices from the EBM Framework. Participants discussed the need to clarify the wording around DFO's responsibilities versus those of other departments and organizations.

Participants were reminded that freshwater should be captured in all aspects of the framework, as it is often neglected. Participants were also reminded of the many dimensions to cultures that must be included in the framework (i.e., fishing culture).

Pillar Presentation 4 – Governance Pillar

Presenter: Dr. Sondra Eger, Ocean and Ecosystem Sciences Division, Science Branch, Bedford Institute of Oceanography

Summary of Discussion:

Participants revisited the discussion on how to approach elements of the framework that are potentially not within DFO's purview and scope. Participants acknowledged the need to understand and distinguish between internal (within DFO) and external (outside of DFO) decision-making authorities and framing the language of the framework accordingly. Additional concepts were suggested for inclusion in the Governance Pillar including adjacency, transparency, anticipatory/proactive, relevancy, and appraisal and evaluation. DFO's processes for formal consultation and engagement was referenced and participants acknowledged that staff and decision makers need to determine what type of interaction is appropriate for their purposes. The conversation on tradeoffs was revisited as participants questioned how the framework can consider conflicting objectives across pillars and land on an outcome. Concepts such as weighting, equitable benefits, and maximization of economic benefits were referenced.

Day 1 Next Steps

- Need to address common concerns about tradeoffs, balance, and prioritization language in objectives
- Need to determine the role of ITK/IK in the EBM Framework (overarching workshop next step)

- Clarity is needed on how Aquatic Invasive Species (AIS) are considered within the Ecological Pillar
- Need to determine how to proceed when referencing issues/decisions that are outside of DFO’s jurisdiction and scope
- Need to better include freshwater in the EBM Framework
- Suggestion to include additional concepts such as adjacency, transparency, anticipatory/proactive, relevancy, and appraisal and evaluation in the Governance Pillar.

Day 2: Wednesday 26th January, 8:30 – 12:00 PM AST

Chairs: Alida Bundy, Max Westhead

Notes: Catherine Thompson, Sondra Eger

4 Pillar Plenary Discussion

Chair: Alida Bundy & Rob Stephenson

Summary of Discussion:

Objectives Beyond DFO’s Mandate

Participants revisited the discussion from Day 1 on objectives that are beyond DFO’s mandate and scope. The group agreed that DFO cannot use the term “ensure” in objectives where responsibilities fall, wholly or partially, within other departments (i.e., Health Canada, ECCC, TC). Therefore, it was suggested to use terms such as facilitate, support, enable, and consider instead.

Ends vs. Means

It was suggested that means objectives are an important element of the Governance Pillar and need to be thought of in addition to the ends objectives. Capacity (financial, personnel etc.) can be used as an example of this. If we don’t have the objective for supporting and increasing capacity as a means towards an end then we lose sight of the enabling impact of getting to the end. It was suggested to add wording around capacity building to the governance section to provide another means objective.

Duplication of Objectives

Participants discussed duplication of objectives across pillars, particularly between the social and economic pillars. It was reasoned that may be because historically, social elements have been considered alongside economic elements (socio-economics) in the DFO Economics Branch and attention to cultural considerations is an emerging issue.

Conflict Among Pillars and Objectives

The framework exposes the difference in values and priorities, which can cause inherent conflict among objectives. The concept of moralistic fallacy, which is the idea that everything that we think is good and desirable can occur together, was also discussed. Participants acknowledged that not all objectives will be relevant for every context. Furthermore, we are not intending to resolve conflict, but simply explicitly stating two different perspectives. The scope of the framework was favourably compared to global initiatives, such as the Australian Health Check and the evolution of thinking in Europe. In Canada, Large Ocean Management Areas (LOMAs) and the Eastern Scotian Shelf Integrated Management (ESSIM) Plan had similar scope.

Inclusion of Indigenous Knowledge

The topic of Indigenous considerations for the framework continued from Day 1. It was noted that the longer we leave the “placeholders” in, the longer we risk alienating Indigenous voices. Different worldviews, epistemologies and ontologies perhaps suggest a parallel process to ensure the Indigenous relevance and considerations are adequately woven throughout. One participant suggested working with an Indigenous scholar on this. Options for moving forward discussed included (i) creating a separate pillar for Indigenous perspectives, (ii) having Indigenous perspectives exist throughout each pillar, or (iii) having Indigenous perspectives exist outside of the EBM Framework. Participants decided to form a smaller task group, with expertise in the topic, to discuss engaging Indigenous Peoples further, recognizing that Indigenous participation would be necessary to determine the best approach.

It was suggested that a focus on connecting the framework development/participation directly with an issue/activity with which an Indigenous organization is already involved would increase the relevance and utility of the EBM Framework. For example, determining where the framework feeds into places where Indigenous Peoples are already recognized as a legitimate decision maker and have authority. The following sources were mentioned: Cultural Impact Assessment in New Zealand, local expert Chris Milley.

Break Out Sessions

Workshop participants were divided into two Break Out Groups. Each group was tasked with discussing the following topics and reporting back to the larger group:

- a) Potential uses of the EBM Framework: discuss and develop a few examples of how the EBM Framework may be used
- b) Recommendation for intersessional work to bring to Day 3

Break Out Group 1

Chair: Cory Large; Note-Taker: Sondra Eger

Summary of Discussion:

Participants acknowledged the challenge of incorporating all relevant objectives when navigating the process of planning, forming management objectives, and engaging stakeholders and rights holders. Participants discussed the variety of decisions the framework is relevant to, including

micro-decisions (day-to-day decisions), decisions on advice, ministerial decisions, management decisions (how to carry out specific visions, goals, objectives, mandates as identified through other governance structures/processes), and major decisions on policies and programs. The group proposed that the framework can help guide and tailor the development of advice, support day-to-day operations, and inform specific decisions. The group brainstormed examples, both big and small, for the application of the framework.

Potential uses of EBM Framework:

- MSP and Blue Economy: both overlap in theory/concept and in practical implementation
- Ecologically Significant Areas (ESA): a national framework is in development. EBM Framework can be useful in the future.
- Aquaculture Management: framework can support Aquaculture Management advice. This program already takes into consideration a broad set of objectives, what would be the value added of the EBM Framework?
- Integrated Fisheries Management Plans (IFMP)

Break Out Group 2

Chair: Tana Worcester; Note-Taker: Catherine Thompson

Summary of Discussion:

Participants reiterated the importance of including Indigenous Peoples, organizations, First Nations etc. in DFO decision-making processes, including fisheries management decisions (access and allocation decisions), decisions on the prioritization of science work, Aquatic Ecosystems decisions (e.g., MPAs). It was proposed that the EBM Framework could facilitate this inclusion. Participants discussed other potential uses of the EBM Framework, including:

- Considerations in Environmental Assessments
 - Examples included offshore wind power, tidal power, and offshore oil and gas. The EBM Framework can help DFO provide more holistic advice during Assessments.
- Fisheries Management Objectives
 - The EBM Framework can support decisions around access and allocation, emerging fisheries, and declining fisheries., eg.,
 - The south west Nova Scotia herring fishery - a management strategy evaluation (MSE) approach, which began in 2019 and is still underway, is being used to assess this fishery. The EBM Framework could support the development of holistic management procedures.
 - Potential contribution of the EBM Framework to the planning of small-scale fisheries.
- Marine Spatial Planning (MSP)

- MSP is a major DFO initiative that is being developed in parallel with EBM and Blue Economy. Under MSP, decision-support tools are being developed, which are overlapping with elements of the EBM Framework. Since MSP (regionally and nationally) and the framework are both in the early stages of development, discussions on how these initiatives can complement each other are needed.

The Break Out Session ended with a discussion of how the EBM Framework could address the needs of fishing and Indigenous communities. One primary consideration is how efficiently DFO responds to issues and concern was expressed about the slow response of DFO to the concerns of fishing and Indigenous communities. The goal is for the EBM Framework to support efficiency, but also transparency, legitimacy, and the scope required to address communities needs in the context of DFO’s mandate and jurisdiction. Balancing timely decisions (efficiency) with well-considered decisions (full scope) while increasing the transparency and legitimacy of the process is a challenge.

Day 2 Next Steps

- Suggestion to explore case study examples that require a combination of all pillars to:
 - Help further develop and refine the framework
 - Help people further understand what the framework can do
 - Lead to next steps and other examples of how to apply the framework
- Develop indicators through exploration of specific examples
- Explore duplication across pillars with a focus on equity
- Crosswalk all current objectives while applying them to a specific context or decision
 - Can ask participants to integrate the framework with their current work and to a specific area of expertise/sector/department/decision

Day 3: Tuesday 8th February, 8:30 – 12:00 PM AST

Guests: Paul Macnab, Catherine Schram and Tanya Pelrine

Chairs: Alida Bundy, Max Westhead

Notes: Catherine Thompson, Sondra Eger

Revised EBM Framework based on feedback from Days 1 and 2

Presenter: Alida Bundy, Ocean and Ecosystem Sciences Division, Science Branch, Bedford Institute of Oceanography

Presentation Summary:

Outcomes of activities undertaken between Days 2 and 3 of the workshop were presented and discussed. A small sub-group met to ensure consistency in language and structure across the 4 pillars. Language throughout the framework was reframed to reflect the scope of DFO decision making. In particular, the term “ensure” was replaced with verbs such as “foster,” “promote” and “contribute” where appropriate. Also, a working glossary document has been updated and circulated along with the updated pillar objectives. A number of other supplementary materials

will also accompany the EBM Framework including a narratives for each pillar connecting objectives to policy statements and a Framework guide.

Summary of Discussion:

Tradeoffs

Different perspectives on “tradeoffs” were discussed. One participant suggested the term “tradeoffs” (or refer to balancing them) should not be used and that weighting across pillars strives for desired, beneficial outcomes (i.e., positively framed) be considered. However, there is also an understanding that tradeoffs are inherent within the framework (e.g., among and between pillars) and the work that we do. It is also important to acknowledge that decision makers (senior management, fisheries management staff etc.) are “balancing”, compromising, weighing these factors all the time and essentially making trade-offs, whether transparent or not.

The social dimension can be considered through both social science research as well as stakeholder and rightsholder engagement.

Health and Wellbeing Objective

An objective on violence, racism or other forms of discrimination was added under Health and Wellbeing. Note that it is acknowledged that this objective is framed negatively and is an exception to the positive framing used in other objectives.

Data sharing

The EBM Framework can help us understand when and where sharing information with partner organizations and across Government of Canada departments is possible. For example, there is an Memorandum of Understanding (MOU) in place between DFO and Transport Canada. It is suggested that because the EBM Framework strives to be implemented as a “whole of government” approach, perhaps more MOUs and inter/cross-agency collaborations may benefit from establishing such structures and arrangements to facilitate effective implementation.

Climate change

Climate change was added as a separate sub-objective under the Governance Pillar to reflect DFO-CGS Sustainable Development Strategy, which has the goal to take “Effective action on climate change”. Climate change is an overarching issue spanning all 4 Pillars and therefore, it was decided that an sub-objective is best suited to the Governance Pillar. There remain many barriers to addressing climate change and general acknowledgement across government is needed.

Discussion of the following terms: Parties vs. actors vs. stakeholders and rights holders

There was general agreement from group that when referring to Indigenous Peoples, appropriate language and terms should be used. It was suggested that a broad grouping of terms

may not distinguish the various types of Indigenous participation. For example there are Indigenous authorities and governments as well as Indigenous organizations and peoples with specific rights that need to be distinguished from stakeholders.

- When a general term is required, the group agreed to use the inclusive term “Parties” to refer to government and Indigenous authorities, stakeholders and rights holders
- Agreement to consult subject matter experts (SMEs) for advice when referring specifically to Indigenous Peoples
- Several other terms were also suggested, such as “Indigenous authorities” and “stakeholders and rights holders”
- Suggestion to also consult DFO policy documents (e.g., DFO Reconciliation Strategy) for guidance?
- Note: the decision of this language needs to be consistent throughout EBM Framework

Public interest

Discussion about the term “public interest”, whether it should be included in the EBM Framework and how. The term is used widely in government documents and the intent of this objective was to remind Public servants decisions must be made based on the public interest. However, the term “public interest” is hard to define and there are questions concerning who defines what is in the public interest and according to whom. The extent to which the public interest is decided upon by public servants versus the elected government is also open for discussion. The following reference were provided subsequent to the meeting:

- Assessing the Public Interest in the 21st Century: A Framework by Leslie A. Pal Judith Maxwell:
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.582.613&rep=rep1&type=pdf>
- Ethics in the Public Sector: Who Determines the Public Interest? “Public Servants or Elected Officials”? ©Samueltola Akinkunmi, 2018
https://ruor.uottawa.ca/bitstream/10393/38322/1/Samuel_Akinkunmi_2018.pdf
- Study on public interest determination: [Policy Context: Public Interest Determination under the Impact Assessment Act - Canada.ca](https://www2.gov.bc.ca/gov2/policy/context/public_interest_determination_under_the_impact_assessment_act_-_canada.ca)

The connection of public interest and the principle of Adjacency was also discussed. Adjacency is included in the academic literature documenting stakeholder interactions about policy. However, it is only included in two DFO policies, the New Access Framework (Thibault 2002; Fisheries and Oceans Canada, 2002) and Commercial Fisheries Licensing Policy for Eastern Canada (DFO 1996). Further consideration of “Adjacency” in the EBM Framework was recommended.

Equity as a common theme across pillars

In preparation for Day 3 of the workshop, a small interdisciplinary group met to discuss the cross cutting theme of equity that occurred across three pillars, Economic, Social and Cultural and Governance. Equity was considered one of the 3 Main Objectives in the Economic Pillar,

Procedural Equity was a 2nd level sub-objective under “Ethical Activities” in the Social and Culture Pillar and in one of the wording on the Main Objective, C. Decision Making in the Governance Pillar.

Note that in DFO, equity is about being fair and impartial, not necessarily equal.

The group recommended that the objectives addressing equity be kept in each of the three pillars since they are addressing different aspects of equity. The caveat is the Economic TG indicated that they will be revisiting the Economic Pillar, and may revise some objectives given what they have learned from the other pillars at this workshop, including the discussion around equity. For example, “community equity” may be better placed in the Social and Culture Pillar. It was further suggested that the Economics TG may want to reconsider the including “Equity” as a separate pillar.

Potential uses of the EBM Framework

Presenter: Rob Stephenson, Ocean and Ecosystem Sciences Division, Science Branch, St. Andrews Biological Station (SABS)

Presentation Summary:

The presentation pulled together previous uses and different iterations of the EBM regional framework to help contextualize possible applications and case studies. The different ways that the EBM Framework could be used were summarized as:

1. Checklist
2. Evaluating and implementing policies and management approaches
3. Scenario comparison
4. Management report card
5. Basis for Integrated Management, MSP and BE

The applications of the EBM Framework proposed by the breakout groups on Day two were then mapped to these five categories. The purpose of this was to assist workshop participants to “see themselves” in this framework and to discuss where time and effort should be spent in demonstrating “proof of concept” with future activities.

Summary of Discussion:

The pros and cons of focusing on case studies that will test the full scope of the EBM Framework across multiple activities, such as offshore wind or MSP (forthcoming) or a more straight forward case study on licensing conditions were discussed. It was suggested that when selecting case studies, resource requirements should be considered. Greater resources will be required for the larger scale applications of the EBM Framework discussed. In addition, case studies would be more tractable if examples were chosen that focus on DFO making decisions around its own activities, rather than areas where external organizations make decisions and DFO provides advice. Based on these discussions, the group agreed that for proof of concept purposes, examples be chosen that focus on DFO making decisions around its own activities.

Possible implementation bottlenecks

The EBM Framework provides an holistic approach to advice for decision making that broadens the range and scope of considerations. However, this type of thinking also needs to be reflected in the National policy context, that is, at higher levels of policy direction, under blue economy and marine spatial planning, for example. It was acknowledged that currently, progress maybe challenged by the lack of an integrated vision across DFO's policies and by regulatory silos.

Applying the Regional EBM Framework: St. Anns Bank (SAB) Marine Protected Area

Presenter: Sondra Eger, Ecosystems and Oceans Science, Bedford Institute of Oceanography

Presentation Summary:

Max Westhead introduced the St. Anns Bank (SAB) EBM Framework case study, which explored the St Anns Bank draft management plan through the lens of the EBM Framework. Max Westhead noted that a long process is involved in the establishment of Oceans Act MPAs and that the draft management plan was developed toward the end of this process. She noted that the temporal, stepwise process of MPA establishment and developing the final management plan may not include all the discussions and materials that were considered in the first four steps of the process leading up to the plan. For example, economic objectives and implications related to boundaries and fishing activities are not reflected in the draft plan objectives but were key considerations earlier in the MPA design process.

The aim of the exercise was to determine the extent to which objectives from the regional EBM Framework are represented in the SAB draft management plan . Each management plan objective was first coded to determine which, if any, of the primary objectives of the 4 EBM pillars they addressed (Figure 1). The extent to which the EBM Framework objectives were addressed by the SAB draft management plan objectives was then scored based on the criteria shown in Figure 2. Table 1 provides an overall summary of the degree to which the SAB draft plan sections aligned with those in the EBM Framework.

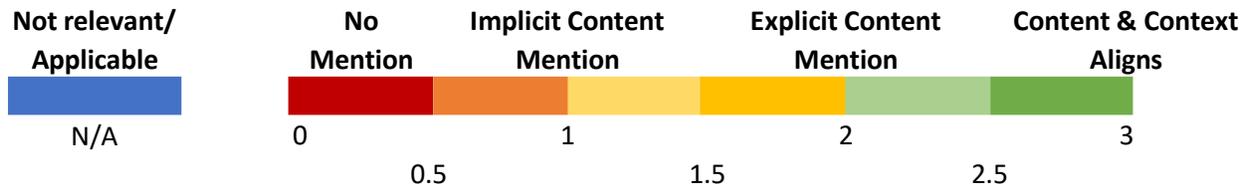


Figure 2: Scoring scale for the degree to which SAB draft plan objectives align with regional EBM Framework

Table 1: Snapshot of analysis summary thus far. Blank cells are yet to be determined as either blue (N/A) or Red (No mention).

Pillar	Ecological			Economic				Social & Cultural				Governance		
	Productivity	Biodiversity	Habitat	Sustainability	Prosperity	Equity	Indigenous TBD	Sustainable Communities	Health and Wellbeing	Ethical & Just Activities	Indigenous and other cultures	Legal and other Obligations, including to Indigenous Peoples	Governance Structures	Decision-Making
Objective														
Vision (Average)	1.5	1.5	1.5	1	1	1		2.33	1		1	1.5	2	1
MPA Goals (Average)	3	3	3									3	2.5	2
Management Stewardship Objectives (Average)												3	2.8	2
Research and Monitoring (Average)												0	1.67	3

Summary of insights thus far

The draft management plan itself does not strongly or explicitly consider all aspects of the 4 EBM Framework Pillars. However, conversations with the SAB team revealed that some pillars may have been applied in previous steps of MPA designation process. The SAB draft management plan explicitly covered the Ecological and Governance Pillar objectives across one or more of the sections. But, the coverage is weak and potentially absent for the Economic Pillar, and most Social and Cultural Pillar objectives. This may be because economic factors were heavily considered earlier in the site design process, but were not included in the management plan.

Next Steps for application of EBM Framework to SAB case study

- Identify N/A & Absent sections of the framework with the SAB team
- Update analysis with a more recent iteration of SAB draft management plan

- Code further down the EBM Framework hierarchy (moving towards secondary and tertiary objectives)

Summary of Discussion:

Comments from SAB Team (Paul Macnab and Catherine Schram)

The SAB team thought it relevant exercise as it relates to what we can do with an *Oceans Act* MPA. They also thought that the EBM Framework provides useful food for thought as they continue to develop the management plan and provided a starting point for conversations with partners, stakeholders and rights holders for consultation, engagement, etc. The SAB team also suggested to look at the implementation strategies nested within the SAB draft management plan to compare it to the EBM Framework objectives. This would show the temporal aspect of how and whether certain objectives would be addressed in the pre-plan stage, within the management plan itself, and/or during plan implementation.

The SAB team also suggested that the EBM Framework could be used to inform future scenarios, from ecological, economic, Social and Cultural and governance perspectives, to explore the impacts of different MPA decisions and boundaries for MSP or MPA plan development.

Question to SAB team

The SAB team was asked, “if you'd had this framework at the beginning of the development of the initiative, would it have helped you?” The team’s response was that the framework could have sparked conversations earlier on in the process, serving as a checklist of potential objectives to consider. It could have been helpful for initial meetings with stakeholders and rights holders. The team reflects that they did not go looking for a set of ready-made objectives at the start of this process, but perhaps this is where the EBM Framework could be useful moving forward.

Indigenous Engagement in EBM Framework

Presenter: Maxine Westhead, Marine Planning and Conservation, Aquatic Ecosystems, Bedford Institute of Oceanography

Presentation Summary:

At the EBM Framework Workshop II, held in January 2021, a greater need for the inclusion of Indigenous Peoples and perspectives was clearly identified (Bundy et al., 2021). A first step was a follow up meeting with representatives of the Wolastoqey Nation in New Brunswick (WNNB), where the need for a separate process in parallel with advancing the EBM Framework was suggested. To initiate this separate process, DFO held an information session for Indigenous Peoples about the EBM Framework in July 2021. Several participants asked questions and showed interest in the EBM Framework. However, one key point that emerged from the meeting was that in order to be able to meaningfully participate in this process, dedicated funding was needed, which unfortunately, DFO does not have at this time. A summary of the meeting was

send to all participants, but there has been no direct interest expressed since then. A follow up contact email is planned shortly.

In the interim there have been DFO internal discussions concerning how best to proceed (hampered by lack of funding and resources) and a sub-group from this meeting met prior to Day 3 to further discuss this issue. Noting concerns about overwhelming Indigenous organizations with another DFO initiative, some next steps for engaging with Indigenous Peoples to help enhance those dimensions of the framework are clearly needed.

Summary of Discussion:

The following next steps were suggested:

- Send email to reengage with the information Session participants
- Form an Indigenous Task Group to focus on this issue
- Recognize and be open to the possible outcome that the EBM Framework may not align with Indigenous values/ways of knowing
- Demonstrate the use of EBM Framework in test application
- Explore possibilities to work directly with one organization, such as WNNB
- Explore options for funding

Two parallel approaches are suggested:

- Include Indigenous considerations to the extent that is possible in the EBM Framework, based on existing and explicit guidance from Policy (e.g., DFO-CGC Reconciliation Strategy (<https://waves-vagues.dfo-mpo.gc.ca/Library/40947208.pdf>)). If possible, involve Indigenous staff and staff that have Indigenous policy experience from DFO and other Federal government departments in the EBM initiative.
- Continue to engage with Indigenous Peoples to obtain feedback and support a separate process. As well, identify if there are concrete examples to which the EBM Framework could be applied that would provide a more tangible understanding of the EBM Framework and its scope.

It was also suggested that we need to consider and ask how Indigenous Peoples engagement with the EBM Framework will help support self-determination in a real tangible way in the near term. We anticipate that a concrete benefit of an engagement process/co-application process will need to be clear before committing capacity and resources into the approaches.

Further considerations moving forward:

- There has not been a formal consult/engagement process thus far nor a process that has sought representation from various groups and bands. It is well recognized that working with one First Nations group, for example the Wolastoqey, will not accurately represent the views of all Mi'kmaq Nations throughout Nova Scotia and New Brunswick.
- Moving forward, we propose to seek agreement on high level objectives, just as with various departments who will be implementing EBM Framework, as we recognize that

not every element and objective of the EBM Framework will be relevant to every department, First Nation, or case study context within which it is applied.

- When discussing the potential value of the EBM Framework with First Nations or Indigenous organizations, recognize and acknowledge that the EBM Framework may not align well with indigenous values or indigenous ways of knowing.
- The group reflected that when DFO initially reached out, it was through more of an academic lens and that perhaps now that the framework is more evolved, a formalized engagement process should be considered.
 - This sentiment was not shared by all. Co-developing a case study together is possible, but there remains uncertainty around whether or not there is a need for formal engagement.
- The Lobster Project, led by Adam Cook and Courtenay Parlee, is using the EBM Framework to guide engagement with Indigenous Peoples and with the commercial fishing industry to identify what is important for various communities. For example, she is using it as an organizational tool to develop social science research questions to bring back to the groups to revise and discuss
 - Could this work help inform the Indigenous engagement component of the EBM Framework?
 - The group agreed that it would be helpful to know, from a methodological point of view, how Courtenay and Jill Campbell-Miller are approaching the use of the EBM Framework in their work
- The question arose about when it will be appropriate to engage industry and ENGOs in this framework. The suggestion was made that it may be time to begin initiating these conversations.

Day 3 Next Steps:

- Continue with Indigenous Task Group
 - Create approach for engaging on Indigenous components of the framework moving forwards
 - Include existing policies directing Indigenous objectives into framework
- Create overarching EBM task group moving forwards
- Revisions to Economic Pillar
 - Comments and suggestions from group that there would be a benefit to a broader group looking at the Economic Pillar revisions moving forwards
- Set up meeting with Jill Campbell-Miller and Courtenay Parlee to go through their use of EBM Framework to inform their engagement process
- Look at and incorporate existing policy direction into framework (national level)
- Next steps for SAB case study:
 - use supplementary documents that informed the development of the plan and assess them holistically
 - Update draft plan objectives and analysis

- compare to the objectives that showed up in the final [draft] management plan.

Main Conclusions from DFO Ecosystem Based Management Workshop – Reuniting the 4 Pillars

Action Items

- Consider contacting a national policy expert to delve further into navigating challenges with implementing and scaling up the framework so high level policies support what the framework is doing and won't hit bottlenecks.
- Determine the appropriate way to refer to Indigenous authorities, rights holders, organizations and/or peoples in the framework:
- Draft a comprehensive narrative for each pillar connecting objectives to policy statements and to provide context.
- Consider including transparency explicitly in objective that speaks directly to public interest
- Form overarching task group to:
 - Continue development of the EBM Framework across all 4 pillars. This will be an iterative process and include applying lessons learned from case studies and furthering developing and unpacking objectives.
 - Continue working to achieve consistency in language across pillars
 - Making language DFO specific
 - Streamline action verbs within objectives across pillars
- Create an Indigenous Task group to create an appropriate approach moving forwards to incorporate Indigenous elements into the EBM Framework
- Meet with Tana to go over feedback from MCT science team (e.g., incorporate connectivity and climate change into Ecological Pillar)
- Look at and incorporate existing policy direction for Indigenous considerations into framework

Main Outcomes

- Learned from each individual pillar how they worked towards objectives gained insight and made decisions on how to proceed with creation of objectives moving forwards
 - The transition from 4 x individual pillar task groups to an overarching task group and Indigenous task group has begun. The intent is to work in interdisciplinary teams moving forwards.
 - A draft narrative for each pillar as well as a draft glossary was produced to accompany the final framework
 - Gained initial evidence of how the framework can and may be used
 - General agreement with draft framework thus far as well as interest in applying it moving forwards
 - Compiled a list of examples of possible case studies to apply FWK in moving forwards
- Renewed engagement plan for Indigenous component

Appendix 3A List of Participants who attended any session(s) in the 3 days of the workshop

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Appendix 3B – Workshop Agenda

Day 1 Agenda: Review each pillar and discuss links between pillars

1. Opening: Workshop Scope and Objectives (5 minutes) – CHAIR: Alida
2. Presentations: each pillar to present progress (30 - 40 minutes each, including questions) – CHAIR: Max
 - a. Ecological – Alida Bundy
 - b. Economics – Corey Large
 - c. Social and Cultural – Evan Andrews
 - d. Governance – Sondra Eger

There will be some time for discussion after each presentation. Questions should focus on each pillar e.g.: Clarification, anything missing, do we have the right objectives?, How do you recognise your Sector in this Framework?

3. 4 Pillar Discussion – CHAIR: Alida & Rob
 - a. Guiding Questions to consider:
 - a. Does the range of objectives across the 4 pillars form a comprehensive framework?
 - b. Is there good balance across the pillars and objectives?
 - c. What are the linkages/ interconnections between pillars (e.g., cross-cutting concepts/objectives)
 - d. Is there duplication of objectives across pillars?
 - e. Is the scope of the framework sufficient (I,e, are there any gaps?)?

Day 2 Agenda: Continue discussion of each pillar and the overall Framework

1. Summary of Day 1 – CHAIR: Alida & Rob
2. 4 Pillar Plenary Discussion (continued) - CHAIR: Alida & Rob
3. Break Out Groups: Leads: Cory and Tana Notes: Sondra/Catherine
 - a. Formatting of EBM Framework
 - b. Communication of EBM Framework
 - c. Potential Uses of the Framework: discuss and develop a few examples of how the EBM Framework may be used
 - d. Recommendations for intersessional work to bring to Day 3
4. Break Out Group report back - CHAIR: Alida & Rob

Day 3 Agenda: Revised EBM Framework and Next Steps

CHAIR: Max Westhead

1. Summary of Days 1 & 2 – Alida Bundy
2. Present revised EBM Framework based on feedback from Days 1 and 2 – Alida Bundy
3. Discussion
 - Does the range of objectives across the 4 pillars form a comprehensive framework?

- Is the scope of the framework sufficient (i.e, are there any gaps?)?
- Consistency in language and structure
- Further suggestions?

BREAK

CHAIR: Alida Bundy

4. Potential uses of the EBM Framework – Rob Stephenson
5. Example applications of EBM Framework – St Anns Bank – Sondra Eger
6. Discussion
 - a. Relevancy of EBM Framework to your program?
 - b. Additional applications/case studies?
7. Next Steps
 - a. Indigenous Engagement - Max
 - b. Task Groups
 - i. Form Overarching TG
 - c. Applications/case studies
 - d. Other?
8. End of workshop @ 12 pm