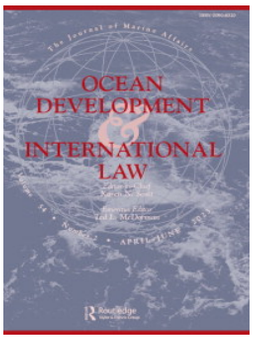

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# Designing Law and Policy for the Health and Resilience of Marine and Coastal Ecosystems—Lessons From (and for) Aotearoa New Zealand

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**ABSTRACT**

Ecosystem-based approaches to marine management, which integrate marine law and policy across sectors, communities, and scales, are increasingly advocated for in international policy debates and scholarly literature. We highlight critical and timely opportunities in Aotearoa New Zealand's evolving legal context to support an ecosystem-based approach across fisheries regulation, biodiversity conservation, environmental effects management, and Indigenous or customary rights. Given the scale of proposed law reform affecting the ocean in Aotearoa New Zealand, there are important global lessons to be elucidated from (and for) the Aotearoa New Zealand experience, revealing the potential for law to center the health of ocean ecosystems and related people in integrated marine decision making.

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Ecosystem-based management; environmental law; marine governance; marine law and policy; New Zealand; oceans

## Introduction

As the ecological health of the ocean deteriorates owing to human mismanagement, and pressures on marine and coastal environments from climate change and cumulative effects proliferate,[1] the imperative for law to support the well-being of ocean ecosystems has never been more critical.[2] However, governments continue to grapple with the complexity and adversity of multiscale and multisector marine management, where sectoral fragmentation and conflicting uses and interests are widespread.

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[1] Simon F. Thrush, Judi E. Hewitt, Rebecca V. Gladstone-Gallagher et al., "Cumulative Stressors Reduce the Self-regulating Capacity of Coastal Ecosystems" (2021) 31(1) *Ecological Applications* available at: https://doi.org/10.1002/eap.2223; Vera Rullens, Fabrice Stephenson, Judi E. Hewitt et al., "The Impact of Cumulative Stressor Effects on Uncertainty and Ecological Risk" (2022) 842 *Science of the Total Environment* 156877.

[2] "5 Things You Should Know about the UN Ocean Conference, a Chance to Save the Planet's Largest Ecosystem" 27 May 2022 *UN News* at: https://news.un.org/en/story/2022/05/1119192 (accessed 1 September 2022).

Despite the United Nations promoting integrated oceans management for more than 30 years,[3] modern laws and policies that seek to regulate human relationships with the ocean are typically sector-based, with poor integration in marine governance processes.[4] However, ecosystem-based approaches to marine management are now well accepted in legal and policy circles as a "better way" to regulate and protect marine environments.[5] Holistic approaches to marine management, based on ecosystem connectedness within and between people and marine places, require integration (or at least consistency) in marine law and policy across sectors and scales, especially in fisheries regulation, biodiversity conservation, environmental effects management, and Indigenous or customary rights.[6] The idea that marine environments should be managed using an ecosystem-based approach is reflected in international law, especially the Convention on Biological Diversity,[7] and is increasingly recognized in the laws and policies of domestic governments. These include Aotearoa New Zealand (Aotearoa NZ), where a ministerial portfolio of "oceans and fisheries" has recently been created (albeit without a discrete oceans ministry) to drive coordination across government departments, providing a more integrated and holistic approach to ocean governance for the "long term health and resilience of oceans and coastal ecosystems."[8]

In recent years, the New Zealand government has committed to reforming a suite of laws and policies affecting marine environments and resources, including laws affecting marine biodiversity conservation, coastal planning and environmental effects assessment, fisheries, and aquaculture regulation.[9] This legal and policy reform responds to multisector and multiscale concerns about marine health, use and management, in which multiple interest groups have different views about the use and protection of the ocean.[10] It is progressing alongside recent case law developments that have emphasized the need to take an ecosystem-based approach to marine regulation, including with reference to international law standards.[11] The reform is evolving in the context of the Labour Government's wide-ranging environmental reform project, including changes to laws on environmental planning, conservation, land use, fresh water, and climate change. It is also being navigated in the context

[3] United Nations Sustainable Development, *United Nations Conference on Environment & Development Rio de Janeiro, Brazil* (UNCED, 3 June 1992) 17 available at: https://sustainabledevelopment.un.org/outcomedocuments/agenda21 ["Agenda 21"] (accessed 4 June 2023).

[4] Elizabeth Macpherson, Stephen C. Ulrich, Hamish G. Rennie et al., "'Hooks' and 'Anchors' for Relational Ecosystem-Based Marine Management" (2021) 130 *Marine Policy* 104561.

[5] Maila Guilhon, Francesc Montserrat and Alexander Turra, "Recognition of Ecosystem-Based Management Principles in Key Documents of the Seabed Mining Regime: Implications and Further Recommendations" (2021) 78(3) *ICES Journal of Marine Science* 884 ("Recognition of Ecosystem-Based Management Principles in Key Documents of the Seabed Mining Regime").

[6] Macpherson et al., note 4.

[7] Convention on Biological Diversity, adopted on 5 June 1992, entered into force 29 December 1993, 1760 UNTS 143.

[8] Oceans and Fisheries," 6 November 2020, *Department of the Prime Minister and Cabinet* available at: https://dpmc.govt.nz/cabinet/portfolios/oceans-and-fisheries (accessed 4 June 2023).

[9] Greg Severinsen, Raewyn Peart, Bella Rollinson, et al., *The Breaking Wave: Oceans Reform in Aotearoa New Zealand* (Environmental Defence Society, 2022) available at: https://eds.org.nz/resources/documents/reports/the-breaking-wave-oceans-reform-in-aotearoa-new-zealand/(accessed 4 June 2023).

[10] Department of Conservation, *Biodiversity in Aotearoa—an Overview of State, Trends and Pressures* (2020) 166 available at: https://www.doc.govt.nz/globalassets/documents/conservation/biodiversity/anzbs-2020-biodiversity-report.pdf (accessed 4 June 2023).

[11] *Trans-Tasman Resources v Taranaki Whanganui Conservation Board* [2021] NZSC 127.

of Māori rights in and to marine areas and resources recognized by *Te Tiriti o Waitangi* (and the English version, the Treaty of Waitangi)[12] the founding constitutional document with modern-day constitutional-law implications[13] and the concomitant partnership between the New Zealand government and Māori *iwi* and *hapū* (tribes and subtribes). The complexity of regulatory reform and legal rights and interests in marine areas and environments, in this settler-colonial context, presents serious challenges for governments seeking to move marine management toward an ecosystem-based approach. Given the scale and impact of proposed law reforms affecting the ocean in Aotearoa NZ, there are important global lessons to be elucidated from (and for) the Aotearoa NZ experience.

Discussions about marine law and policy reform have been historically plagued by "[p]olarized views and locked-in debates that compromise shared goals," which "are common, but often unnecessary."[14] There are even "vast disagreements" between those in favor of ecosystem thinking as to the definitions of ecosystem-based management, ecosystem-based approach, or ecosystem-approach (including whether they are related, overlapping, or different), which have practical implications for policymakers and implementers.[15] However, as Le Tissier points out, strict "adherence to terminology rather than end goals can blur the emphasis and principles of processes needed to address environmental challenges in coastal and marine areas," obfuscating the end goals of improved marine management in a way that reflects social and ecological realities. The starting point for this article is, as suggested by Norberg et al., that better awareness of differences of perspectives and the consequences of unavoidable uncertainty would improve researcher interactions and scientific impact in environmental policymaking.[16] In this article, while at times for convenience we use the shorthand of "EBM," we take a deliberately broad, flexible, and nonprescriptive approach to our concern that law and policy should apply in a way that better reflects and supports the ecological and social functioning of living marine places and related peoples.

In the following pages we highlight critical opportunities for Aotearoa NZ's marine reform project to support ecosystem-based management, as it is currently framed in

[12] "Indigenous rights" with respect to Aotearoa NZ relate to the Indigenous peoples of Aotearoa NZ, who are *iwi* and *hapū Māori* (Māori tribes and subtribes). *Te Tiriti o Waitangi* is the legal framework or jurisprudence that informs protection of the legal rights of the Indigenous peoples of Aotearoa NZ. These are discussed further below.

[13] The Independent Working Group on Constitutional Transformation, *He Whakaaro Here Whakaumu Mō Aotearoa: The Report of Matike Mai Aotearoa* (2016)) available at: https://nwo.org.nz/resources/report-of-matike-mai-aotearoa-the-independent-working-group-on-constitutional-transformation/(accessed 4 June 2023); Claire Charters, Kayla Kingdon-Bebb, Tamati Olsen et al., *He Puapua: Report of the Working Group on a Plan to Realise the UN Declaration on the Rights of Indigenous Peoples in Aotearoa/New Zealand* (Technical working group on a plan for the UN Declaration on the Rights of Indigenous Peoples (DWG), [Te Puni Kokiri], 2019) available at: https://go.exlibris.link/bDpGKKJv (accessed 4 June 2023). We note that although Te Tiriti o Waitangi was originally signed in *Te Reo Māori* (the Māori language), there is also an English language version, which varies in important respects from the *Reo Māori* version, and there is ongoing contestation around its meaning, which cannot be covered here. See generally Te Rarawa Margaret Mutu (Ngāti Kahu and Ngāti Whātua nations), "'To Honour the Treaty, We Must First Settle Colonisation" (Moana Jackson 2015): The Long Road from Colonial Devastation to Balance, Peace and Harmony" (2019) 49 *Journal of the Royal Society of New Zealand* 4. In this article when discussing this context we refer primarily to the version in *Te Reo Māori* (*Te Tiriti*).

[14] Jon Norberg, Thorsten Blenckner, Sarah E. Cornell et al., "Failures to Disagree Are Essential for Environmental Science to Effectively Influence Policy Development" (2022) 25(5) *Ecology Letters* 1075.

[15] Trine Skovgaard Kirkfeldt, "An Ocean of Concepts: Why Choosing between Ecosystem-Based Management, Ecosystem-Based Approach and Ecosystem Approach Makes a Difference" (2019) 106 *Marine Policy* 103541.

[16] Norberg, Blenckner, Cornell et al., note 14.

international scholarly literature. Our analysis is underpinned by in-depth archival and empirical investigations carried out by our interdisciplinary and intercultural team of researchers across law, governance, planning, ecology, social–ecological systems, geography, organizational management, political economy, and Indigenous studies. Our findings were tested in a series of interactive workshops with key actors across a range of government regulatory and policy institutions, industry, community, and Māori working on marine and coastal issues.[17] These included place-based engagement with a Māori *hapū* (subtribe) with long-standing marine rights and relationships, which enabled deep insights into relational worldviews and experiences between ocean peoples and ocean places. The understandings gained through this place-based engagement are set out in Box 1—Motiti Island Spotlight and were co-developed with the *hapū*, to shine a spotlight tribal priorities, concerns, and conceptual framing under *mātauranga* Māori (Māori knowledge).[18] Recognizing the breadth of marine laws and institutions, our study focused on four key areas of law and policy impacting on marine areas at different scales: fisheries regulation, biodiversity conservation, environmental effects management, and Māori/*Tiriti* rights. These four areas of focus are shown in Figure 1 together with other important parameters for the research method, including the impact of scale, the "hooks" and "anchors" approach adopted from Macpherson et al.,[19] and from Hewitt et al. seven principles of EBM (explained further below).[20]

We argue in this article that there are key, time-sensitive opportunities in each of these key policy areas (where significant legislative and judicial developments are already underway) to better align law and policy to the relational processes of marine ecosystems (including people), in a way that meaningfully intersects with the others. In order for each of these areas to "hook" into each other, we argue that Aotearoa NZ needs an overarching EBM "anchor," including "fundamental marine principles" for the management of ocean ecosystems and respect for Māori rights and authority, to apply across and bind sectoral frameworks as they affect marine environments.[21] Our findings have broad relevance for transnational marine law and policy debates, as a range of countries attempt to reform marine laws and policies in a way that represents ecosystem functioning and supports the health and resilience of marine ecosystems and related people.

[17] These workshops were undertaken under approval of the Human Ethics Committee of the University of Canterbury and were intended to assist the authors to understand the range of perspectives and aspirations for marine management in Aotearoa NZ, and we thank the participants for their engagement. No individual participants are identified or have specific views accredited as part of this process.

[18] This *hapū,* known as Te Patuwai, has *mana moana* (authority and responsibility for) marine places (including islands, reefs, ocean, bays, and land) in the Bay of Plenty in the East Coast of the North Island of Aotearoa NZ. See Motiti spotlight, below, for further detail.

[19] Macpherson et al., note 4.

[20] Judi Hewitt, "Proposed Ecosystem-Based Management Principles for New Zealand" [2018] 11 *Resource Management Journal* 10.

[21] Karen Fisher, Leane Makey, Elizabeth Macpherson et al., "Broadening Environmental Governance Ontologies to Enhance Ecosystem-Based Management in Aotearoa New Zealand" [2022] *Maritime Studies* available at: https://doi.org/10.1007/s40152-022-00278-x (accessed 4 June 2023); Macpherson et al., note 4.

## Box 1. Motiti Island Spotlight.

***"Ko au Motiti, ko Motiti ko au* [I am Motiti. Motiti is me]."**[22]

Motiti Island (Motiti) is a small island 21 km northeast of Tauranga.[23] Motiti is a low-lying volcanic plateau around 10 $km^2$ in area, inclusive of open plains (with a water springs system) that drop off into cliffs, surrounded by coastline.[24]

The surrounding marine area of Motiti has a scattered ecological network of islets and reefs, inclusive of islets Okarapu, Te Māmangi, Motu Haku, Motu Nau, and Tokoroa and Ōtāiti reef.[25] This ecological network includes an ecosystem of *taonga species* (of special cultural significance and importance to Māori),[26] and *tangata whenua* (people of the land) have a deep entrenched relationship with Motiti and its surrounding marine environment.

Motiti is unique because it is one of the few permanently inhabited islands in Aotearoa NZ. Historically, Motiti was occupied and farmed for many years. Today, people of Te Patuwai hapū,[27] Ngāti Maumoana, and Te Whānau a Tauwhao maintain their relationship to Motiti supported by *Te Tiriti o Waitangi* and *Tikanga* Māori (Māori customary law) practices.[28] The southern end of Motiti is held in general land and privately owned.[29]

The territorial authority administering Motiti is the Department of Internal Affairs (DIA) through the Minister of Local Government.[30] Additionally, the Bay of Plenty Regional Council's role is to assist with implementing the proposed new rules (under the Regional Coastal Environment Plan) for protecting three reef systems near Motiti, and providing scientific monitoring informing future marine management practices.[31] A positive move forward is the Regional Council acknowledging existing and potential issues for Motiti *hapū* (subtribes), in order to find workable solutions to social, environmental, and economic challenges on Motiti.

Challenges for managing Motiti marine relationships:

- **Navigating a complex legal framework—**relating to Motiti marine area, e.g., resource consenting.
- **Achieving and maintaining *Te Tiriti* partnership—**for co-managing Motiti marine area—between Motiti *tangata whenua*, other relevant *iwi* Māori (tribes), DIA, Regional Council, other relevant government agencies.
- **Achieving and maintaining representative mandate—**for DIA, Regional Council, other government agencies, Motiti *tangata whenua*, and other relevant *iwi* Māori.
- **Maintaining and practicing *Tikanga* Māori—**for Motiti *tangata whenua* and other relevant *iwi* Māori, and recognition and support of this from government agencies.
- **Securing adequate resourcing—**e.g., the cost of securing resource consent approval on Motiti may outweigh the cost of building a home.

Opportunities for managing Motiti marine relationships:

- ***Te Tiriti* partnership commitment from DIA, Regional Council, other government agencies—**of Motiti *tangata whenua* and *Tikanga* Māori practices of marine management.
- **Government to resource educational workshops on Tikanga Māori process**—for DIA, Regional Council, other government agencies by Motiti *tangata whenua* on managing the marine area of Motiti.
- **Government to resource educational workshops**—on complex legal framework for Motiti *tangata whenua* and other relevant *iwi* Māori.
- **Collaborative engagement and co-design**—between DIA, Regional Council, other government agencies on resourcing and marine co-management issues.

[22] *Umuhuri Matehaere 'Statement of Evidence of Umuhuri Matehaere on Behalf of Motiti Rohe Moana Trust'* [2017] Environment Court, Auckland 0000134, [9]–[15].

[23] Waitangi Tribunal, *MOTITI Report on the Te Moutere o Motiti Inquiry* (No Wai 2521, 2022) 2.

[24] Ibid; *Hoete v Minister of Local Government* [2012] NZEnvC 282, 4.

[25] Waitangi Tribunal, note 379, 2.

[26] *Attorney-General v Trustees of the Motiti Rohe Moana Trust* [2019] NZCA 532; *Trustees of the Motiti Rohe Moana Trust v Bay of Plenty Regional Council* [2016] NZEnvC 240, [13]; Kura Paul-Burke, *Cultural Monitoring Report* (The Astrolabe Community Trust, 22 December 2020) xii.

[27] *Hoete v Minister of Local Government,* note 380, 4.

[28] *Hoete v Minister of Local Government,* note 380.

[29] Waitangi Tribunal, note 379, 2.

[30] "Administration of Motiti Island" *Te Rai Taiwhenua The Department of Internal Affairs* at: https://www.dia.govt.nz/Services-Other-Services-Administration-of-Motiti-Island (accessed 1 September 2022).

[31] "Environment Court Approves Motiti Protection Areas" 29 April 2020, *Bay of Plenty Regional Council | Toi Moana* at: https://www.boprc.govt.nz/your-council/news/news-and-media-releases/media-releases-2020/april-2020/environment-court-approves-motiti-protection-areas (accessed 1 September 2022).

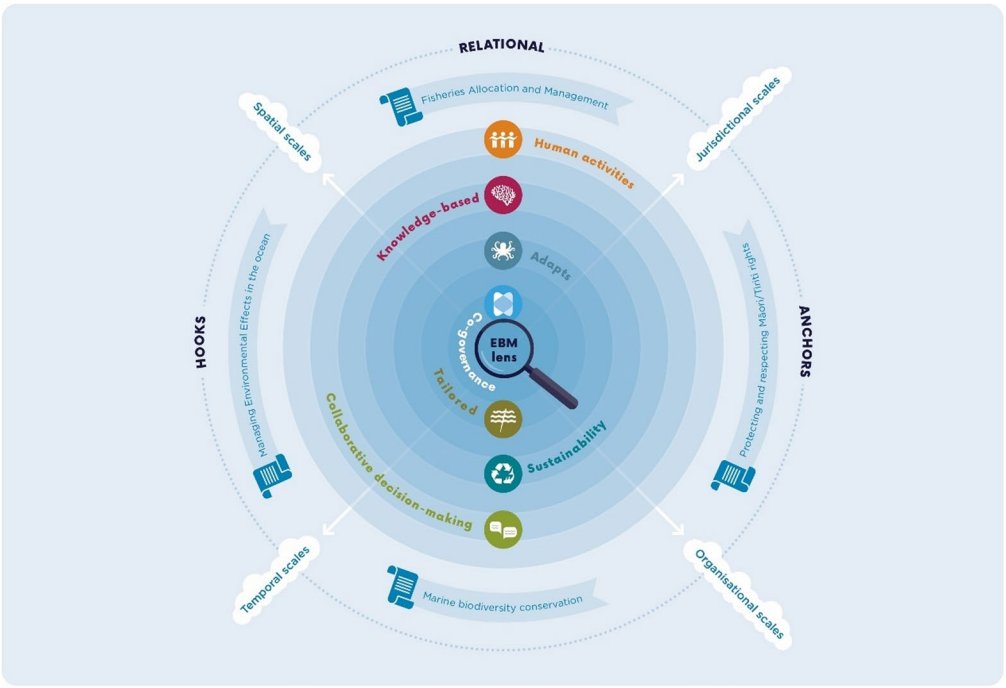


**Figure 1.** This model summarizes the method and approach to this research to uncover opportunities for EBM in Aotearoa NZ. The model explains the parameters for the study, including: 1. We restricted the scope of the study as shown in the scrolls to law and policy centered on (a) fishing allocation and management, (b) marine biodiversity and conservation, (c) managing environmental effects in the ocean, and (d) protecting and respecting Māori/*Tiriti* rights. 2. As shown in the clouds, we sought to understand the complex interaction of law and policy across multiple scales; spatial, temporal, organizational, and jurisdictional scales. 3. We looked for opportunities to introduce options that align/meet with the seven principles of EBM developed by Hewitt et al.,[32] as represented by the concentric circles. 4. We sought to build upon the "hooks" and "anchors" approach to "relational EBM" developed by Macpherson et al., as shown in the border panes.

The article proceeds as follows: We first provide an overview of ecosystem-based management in international policy and theory. In the next part we evaluate the extent to which marine law and policy in Aotearoa NZ could support an ecosystem-based approach, focusing on the four key areas of law and policy identified in Figure 1. In the final part we bring together our findings on opportunities across fisheries regulation, biodiversity conservation, environmental effects management, and Māori/*Tiriti* rights, identifying a framework of legal and policy mechanisms to center the health of ocean ecosystems and related people in integrated marine decision making.

## Marine Law and Policy and Ecosystem Thinking

The idea that law and policy affecting marine environments should be structured in a way that integrates sectors and jurisdictions to better reflect and support ecosystem

[32] Hewitt, note 20.

function and interactions is increasingly prominent in international scholarly and policy circles.[33] Ecosystem-based approaches to marine management are more "holistic"[34] and acknowledge "links among living and non-living resources, involving the management of species, other natural commodities/services, and humans as components of the ecosystem … including the interactions among ecosystem components, humans and the cumulative impacts of multiple activities, promoting conservation and sustainable use of resources."[35] They move away from a single-sector or single-species approach to consider the cumulative effects of multiple human activities on multiple ecosystem components.[36] Ecosystem-based marine management is often associated with flexible and adaptive management; tailored, place-based decision making that recognizes the connectedness of ecological complexes and their components[37]: and co-governance approaches that implement intergenerational community values and Indigenous knowledge systems.[38]

International oceans law, including under the 1982 United Nations Convention on the Law of the Sea,[39] is characteristically anthropocentric, rights-based, and fragmented across spatial jurisdictions. However, ecosystem thinking is increasingly reflected in international environmental law and policy. The Convention on Biological Diversity requires states to "promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings,"[40] and recognizes traditional knowledge and benefit sharing with Indigenous peoples (among other things).[41] As part of this, the international community is increasingly recognizing diverse ways of valuing ecosystems and the importance of Indigenous rights and belief-systems in environmental management. The recent *Values Assessment* published by the Intergovernmental Panel on Biodiversity and Ecosystem Services found that the global biodiversity crisis has been augmented by decisions based on a narrow set of market values for nature and instead recommended a new decision-making typology grounded in "living from, with, in and as nature"[42]:

[33] David C. Smith, Elizabeth A. Fulton, Petrina Apfel et al., "Implementing Marine Ecosystem-Based Management: Lessons from Australia" (2017) 74(7) *ICES Journal of Marine Science* 1990, 1998; Guilhon, Montserrat and Turra, note 6; Timothy G. O'Higgins, Manual Lago, and Theodore H. DeWitt, *Ecosystem-Based Management, Ecosystem Services and Aquatic Biodiversity: Theory, Tools and Applications* (Springer International Publishing, 2020).

[34] Hewitt, note 20.

[35] Stefan Gelcich, Francisca Reyes-Mendy, Rodrigo Arriagada et al., "Assessing the Implementation of Marine Ecosystem Based Management into National Policies: Insights from Agenda Setting and Policy Responses" (2018) 92 *Marine Policy* 40, 40.

[36] Dana E. Clark, Rebecca V. Gladstone-Gallagher, Judi E. Hewitt et al., "Risk Assessment for Marine Ecosystem-Based Management (EBM)" *Conservation Science and Practice* e12636; Thrush, Hewitt, Gladstone-Gallagher et al., note 1.

[37] Karen McLeod and Heather Leslie, *Ecosystem-Based Management for the Oceans* (Island Press, 2009).

[38] Hewitt, note 20.

[39] United Nations Convention on the Law of the Sea, adopted 10 December 1982, entered**into force 16 November 1994, 1833 UNTS 397**; see Vanessa Burns, "Analysis of Ocean Ontologies in Three Frameworks: A Study of Law of the Sea Discourse" [2022] *Environment and Planning E: Nature and Space* 25148486221110436.

[40] Convention on Biological Diversity, Art 8(d).

[41] Ibid, Art 8(J).

[42] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, *Summary for Policymakers of the Methodological Assessment of the Diverse Values and Valuation of Nature of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (Version 1),* IPBES 9 (2022) available at: https://ipbes.net/media_release/Values_Assessment_Published (accessed 4 June 2203).

> Living from nature emphasizes nature's capacity to provide resources for sustaining livelihoods, needs and wants of people, such as food and material goods. Living with nature has a focus on life "other than human" such as the intrinsic right of fish in a river to thrive independently of human needs. Living in nature refers to the importance of nature as the setting for people's sense of place and identity. Living as nature sees the natural world as a physical, mental and spiritual part of oneself.

At the international level, there is increasing convergence in debates around biodiversity conservation and climate mitigation, adaptation, and resilience via an "ecosystem approach."[43] This means valuing ecosystems, biodiversity, and related peoples in the design of law and policy in the context of increased risk and uncertainty, and disproportionately distributive harms, posed by a changing climate. The Intergovernmental Panel on Climate Change (IPCC) sixth assessment found that climate governance is "most effective when it integrates across multiple policy domains, helps realize synergies and minimize trade-offs, and connects national and sub-national policy-making levels," and that "effective and equitable climate governance builds on engagement with civil society actors, political actors, businesses, youth, labour, media, Indigenous Peoples and local communities."[44]

The evolution of international environmental law reflects a trend toward system-based thinking in environmental law generally, which demands transformation of traditionally siloed, sectoral legal frameworks toward governance based on a "holistic understanding of the earth system as a single intertwined social-ecological system."[45] As Kotze explains, "Earth system law has emerged as an alternative innovative legal imaginary that is rooted in the Anthropocene's planetary context and its perceived social-ecological challenges."[46] Some have highlighted the bias toward terrestrial environments in planetary-level systems-thinking, while 70 percent of Earth's surface is covered in ocean.[47] Others warn against the perils of abstract or homogenizing Earth-level thinking, which might obscure place-based and differentiated relationships and experiences, including those of Indigenous peoples.[48] Yet ecosystem thinking is a challenge for environmental law, because of the need to align sectoral legislation regulating human interactions with the environment and resources—at least for the aims, values, and objectives of sectoral legislation to be consistent across sectors and scales, if not

[43] United Nations Environment Programme, *Harnessing Nature to Build Climate Resilience: Scaling Up the Use of Ecosystem-Based Adaptation* (2022) available at: https://wedocs.unep.org/handle/20.500.11822/40313 (accessed 4 June 2023).

[44] Working Group III Intergovernmental Panel on Climate Change. Intergovernmental Panel on Climate Change, *AR6 Climate Change 2022: Mitigation of Climate Change* (2022) 64 available at: https://www.ipcc.ch/report/sixth-assessment-report-working-group-3 (accessed 4 June 2023).

[45] Louis J. Kotzé, Rakhyun E. Kim, Catherine Blancard et al., "Earth System Law: Exploring New Frontiers in Legal Science" (2022) 11 *Earth System Governance* 100126. In the marine context, see Stefan Gelcich, Francisca Reyes-Mendy, and Monica A. Rios, "Early Assessments of Marine Governance Transformations: Insights and Recommendations for Implementing New Fisheries Management Regimes" (2019) 24(1) *Ecology and Society* 2.

[46] Louis J. Kotzé, Rakhyun E. Kim, Catherine Blancard et al., ibid.

[47] Quoting Arthur C. Clarke, "How Inappropriate to Call this Planet 'Earth', When Clearly It Is 'Ocean'." See: "Planet 'Earth': We Should Have Called It 'Sea'—Quote Investigator" at: https://quoteinvestigator.com/2017/01/25/water-planet (accessed 1 September 2022) ("Planet 'Earth'").

[48] Mihnea Tanasescu, *Understanding the Rights of Nature: A Critical Introduction* (Transcript Publishing, 2022); Kathleen Birrell and Julia Dehm, "International Law & the Humanities in the 'Anthropocene'" in Shane Chalmers and Sundhya Pahuja (eds), *Routledge Handbook of International Law and the Humanities* (Routledge, 2021) 407.

integrated.[49] In the marine context this means, for example, that the key values and objectives of fisheries management legislation or coastal planning laws should be aligned (or at least not inconsistent) with the key values and objectives underpinning marine biodiversity conservation legislation.[50]

While ecosystem-based management requires careful scientific information gathering, risk assessment, and planning,[51] there is growing acceptance that the challenge of EBM is fundamentally a challenge for people,[52] governance, and organizations.[53] There is no one agency or organization with the complete knowledge needed to properly manage complex social–ecological systems.[54] Delacāmera et al. warn that "We need to better understand the complexity of the social, behavioral side of social-ecological systems, to match our understanding of the ecological side." But how can diverse sets of people from government, industry, and community, with different interests in different places and scales, work together to manage marine areas and resources? How can the knowledge and information of each be brought together in order to make decisions? This is no easy task because of the practical difficulties, cost, and time involved in integrating multiple diverse sectors,[55] actors, interest groups, and governments at multiple scales, many of which are not accustomed to working together.[56] For example, an ecosystem-based approach that recognizes the impact of coastal land use on fisheries management may require the coordination of land-based planning and fisheries management. How exactly this should be required, arranged, and resourced is often not clear, and appears to be an intransigent issue. Recently, Alexander and Haward have suggested that there are at least four ways in which some of these challenges/tensions could be addressed[57]:

- Create coordinating structures which operate across sectors;
- Foster means of intersectoral communication and data sharing;
- Design participation processes to facilitate broad-scale participation; and
- Clarify mandates and precedence between decision-making agencies.[58]

[49] Kathryn K. Davies, Karen T. Fisher, Gemma Couzens et al., "Trans-Tasman Cumulative Effects Management: A Comparative Study" (2020) 7 *Frontiers in Marine Science* 2.

[50] Macpherson, Ulrich, Rennie et al., note 4.

[51] Clark, Gladstone-Gallagher, Hewitt et al., note 26; Christian Riisager-Simonsen, Olivia Rendon, Anders Galatius et al., "Using Ecosystem-Services Assessments to Determine Trade-Offs in Ecosystem-Based Management of Marine Mammals" (2020) 34(5) *Conservation Biology* 1152; Mark E. Monaco, E. Spooner, S. A. Oakes et al., "Introduction to the NOAA Integrated Ecosystem Assessment Program: Advancing Ecosystem Based Management" (2021) 49(1) *Coastal Management* 1.

[52] K. A. Alexander and M. Haward, "The Human Side of Marine Ecosystem-Based Management (EBM): "Sectoral Interplay" as a Challenge to Implementing EBM" (2019) 101 *Marine Policy* 33; Erena Le Heron, Richard Le Heron, Lara Taylor et al., "Remaking Ocean Governance in Aotearoa New Zealand through Boundary-Crossing Narratives about Ecosystem-Based Management" (2020) 122 *Marine Policy* 104222.

[53] Stefan Gelcich, "Towards Polycentric Governance of Small-Scale Fisheries: Insights from the New "Management Plans" Policy in Chile" (2014) 24(5) *Aquatic Conservation: Marine and Freshwater Ecosystems* 575, 575; Smith, Fulton, Apfel et al., note 23, 1998.

[54] See, generally, Fikret Berkes, "Implementing Ecosystem-Based Management: Evolution or Revolution?" (2012) 13(4) *Fish and Fisheries* 465; Gelcich, Reyes-Mendy, and Rios, note 35.

[55] Anthony Charles, Serge M. Garcia, and Jake Rice, *Governance of Marine Fisheries and Biodiversity Conservation: Interaction and Coevolution* (Wiley-Blackwell, 2014) 111.

[56] Joanna Vince, "The Twenty Year Anniversary of Australia's Oceans Policy: Achievements, Challenges and Lessons for the Future" (2018) 10(3) *Australian Journal of Maritime & Ocean Affairs* 182, 184.

[57] Alexander and Haward, note 42.

[58] See also Jason S. Link, Mark Dickey-Collas, Murray Rudd et al., "Clarifying Mandates for Marine Ecosystem-Based Management" (2019) 76(1) *ICES Journal of Marine Science* 41; see also ibid.

Institutional theorists have long argued for governance approaches to respond to the challenge of managing complex social–ecological systems, including multilevel, "polycentric" forms of governance,[59] characterized by multiple governing authorities at different scales.[60] In the marine context, attempts at integrating law and policy across scales and sectors have sometimes been provided for through integrated coastal management,[61] marine zoning,[62] and marine spatial planning initiatives,[63] all of which attempt to influence the spatial and temporal distribution of human activities in the marine and coastal area, and which have also been associated with ecosystem-based approaches.[64]

It is essential, in devising governance approaches for marine management in settler-colonial contexts, that environmental policy embraces the opportunities of working together (sharing knowledge systems and understandings), rather than creating new injustices against Indigenous peoples,[65] including through new environmental protections or conservation arrangements that override long-standing Indigenous rights and authority.[66] Severinsen has argued for a "just transition" for the ocean that does not cause new injustices to Indigenous and local peoples and their livelihoods.[67] This requires, at least, that Indigenous peoples are respected partners in marine governance,[68] and that Indigenous knowledge informs marine decision making.[69]

In Aotearoa NZ, Maxwell et al. have argued for a new cross-cultural framework for facilitating collaboration in the marine context, called "*Waka-Taurua*," which recognizes Indigenous worldviews, tools, and approaches equitably with EBM.[70] Parsons, Fisher, and Crease (in their work on decolonizing blue spaces) refer to needing "such new

[59] Elinor Ostrom, "Polycentric Systems for Coping with Collective Action and Global Environmental Change" (2010) 20 *Global Environmental Change* 550; "Elinor Ostrom, Governing the Commons (1990)" in Naazneen Barma and Steven K. Vogel (eds) *The Political Economy Reader: Contending Perspectives and Contemporary Debates* (Routledge, 2021) 177.

[60] Gelcich, note 43, 575.

[61] O'Higgins, Lago, and DeWitt, note 23, 403.

[62] Jon C. Day, Richard A. Kenchington, John M. Tanzer et al., "Marine Zoning Revisited: How Decades of Zoning the Great Barrier Reef Has Evolved as an Effective Spatial Planning Approach for Marine Ecosystem-based Management" (2019) 29(S2) *Aquatic Conservation: Marine and Freshwater Ecosystems* 9; Paulo H. Mattos, Jean Espinoza, Raphael Mathias Pinotti et al., "Ecosystem-Based Marine Spatial Planning: An Approach to Marine and Coastal Area Management in Southernmost Brazil" (2021) 9 *Natural Resources and Conservation* 9.

[63] Sue Kidd, Helena Calado, Kira Gee et al., "Marine Spatial Planning and Sustainability: Examining the Roles of Integration—Scale, Policies, Stakeholders and Knowledge" (2020) 191 *Ocean & Coastal Management* 105182.

[64] Joanna Vince, "Oceans Governance and Marine Spatial Planning in Australia" (2014) 6(1) *Australian Journal of Maritime & Ocean Affairs* 5, 7.

[65] Robert Joseph, Mylene Rakena, Mary Te Kuini Jones et al., *Stemming the Colonial Environmental Tide: Shared Māori Governance Jurisdiction and Ecosystem-Based Management over the Marine and Coastal Seascape in Aotearoa New Zealand: Possible Ways Forward* (National Science Challenge, Sustainable Seas, 2020) at: https://go.exlibris.link/Xx8SMfWT (accessed 1 September 2022).

[66] Joanne Clapcott, Jamie Ataria, Chris Hepburn et al., "Mātauranga Māori: Shaping Marine and Freshwater Futures" (2018) 52(4) *New Zealand Journal of Marine and Freshwater Research* 457; Meg Parsons, Lara Taylor, and Roa Crease, "Indigenous Environmental Justice within Marine Ecosystems: A Systematic Review of the Literature on Indigenous Peoples' Involvement in Marine Governance and Management" (2021) 13(8) *Sustainability* 4217; John Reid and Matthew Rout, "The Implementation of Ecosystem-Based Management in New Zealand—A Māori Perspective" (2020) 117 *Marine Policy* 103889.

[67] Greg Severinsen, "Oceans Reform in Aotearoa New Zealand: A Just Transition?" (2021) 17(3) *Policy Quarterly* 45.

[68] Reid and Rout, note 56.

[69] Parsons, Taylor and Crease, note 56; Hēmi Whaanga, Priscilla Wehi, Murray Cox et al., "Māori Oral Traditions Record and Convey Indigenous Knowledge of Marine and Freshwater Resources" (2018) 52(4) *New Zealand Journal of Marine and Freshwater Research* 487.

[70] Kimberley H. Maxwell, Kelly Ratana, Kathryn K. Davies et al., "Navigating Towards Marine Co-Management With Indigenous Communities On-Board the Waka-Taurua" (2020) 111 *Marine Policy* 103722.

(or some would say old) ways of thinking about and enacting respectful inter-being relationality."[71] As a caution, although there are a number of similarities between ecosystem thinking and Māori approaches to the environment in terms of system-based and holistic approaches, "there are issues as well,"[72] and care should be taken to fairly "balance interactions between worldviews."[73] In a recent paper on broadening environmental governance ontologies to enhance ecosystem-based management in Aotearoa NZ, Fisher et al. propose four *pou* (or enabling conditions) that generate alternatives to governance models underpinned by a "modernist" (dualistic, technocratic) ontology: (i) enacting interactive administrative arrangements; (ii) diversifying knowledge production; (iii) prioritizing equity, justice, and social difference; and (iv) recognizing interconnections and interconnectedness.[74]

An emphasis on "relationality" has also made its way into environmental law theory,[75] emphasizing the interdependency of people and place, and taking seriously the contribution of Indigenous rights and knowledge in environmental governance.[76] Relational models for environmental or resource governance depart from static notions of law to a focus on the relational processes of dialogue and negotiation between humans and nonhumans in plural, multicultural, and dynamic legal settings.[77] The "ontological turn" has not been as prominent in oceans law and governance as in the terrestrial context,[78] with oceans being typically positioned as either "a resource basin to be exploited," "a system to be studied," or "a wilderness to be protected."[79] However, increasingly critical scholarship highlights alternative ontologies and "rethinks conventional enclosures as a division of ocean space, but rather as connections between spaces that are relational and event-based."[80] These emerging ontologies recognize the agency of nonhuman actors and seek to place the ocean (in relationship with people) at the center of concern.[81]

[71] Meg Parsons, Karen Fisher, and Roa Petra Crease, *Decolonising Blue Spaces in the Anthropocene: Freshwater Management in Aotearoa New Zealand* (Palgrave Macmillan, 2021) 477.

[72] M. Rout, J. Reid, H. Bodwitch et al., *Māori Marine Economy: A Literature Review* (SustainableSeas National Science Challenge, 2019) 48.

[73] Robert Joseph, Mylene Rakena, Mary Te Kuini Jones, Dr Rogena Sterling, and Celeste Rakena, "The Treaty, Tikanga Māori, Ecosystem-Based Management, Mainstream Law and Power Sharing for Environmental Integrity in Aotearoa New Zealand—Possible Ways Forward" (Report prepared for the Sustainable Seas National Science Challenge, 2018) 205 at: https://www.sustainableseaschallenge.co.nz/assets/dms/Reports/The-Treaty-tikanga-Maori-ecosystem-based-management-mainstream-law-and-power-sharing-for-environmental-integrity-in-Aotearoa-New-Zealand-possible-ways-forward/MAIN20TuhonohonoSSeas20Final20Report20Nov202019.pdf (accessed 6 June 2022).

[74] Fisher, Makey, Macpherson et al., note 21.

[75] Macpherson, Ulrich, Rennie et al., note 4; Elizabeth Macpherson, "Ecosystem Rights and the Anthropocene in Australia and Aotearoa New Zealand" in Domenico Amirante and Silvia Bagni (eds), *Environmental Constitutionalism in the Anthropocene: Values, Principles, Actions* (Routledge, 2022) 168; Anna Arstein-Kerslake, Erin O'Donnell, Rosemary Kayess et al., "Relational Personhood: A Conception of Legal Personhood with Insights from Disability Rights and Environmental Law" [2021] *Griffith Law Review* 1.

[76] Annie Milgin, Linda Nardea, Hilda Grey et al., "Sustainability Crises Are Crises of Relationship: Learning From Nyikina Ecology and Ethics" (2020) 2(4) *People and Nature* 1210, 1211; Joseph, Rakena, Te Kuini Jones et al., note 55; Joseph and Rakena, note 64; Anne Salmond, Gary Brierley, Dan Hikuroa et al., "Tai Timu, Tai Pari, the Ebb and Flow of the Tides: Working With the Waimatā from the Mountains to the Sea" [2022] *New Zealand Journal of Marine and Freshwater Research* 1.

[77] Kirsty Gover, *Legal Pluralism and State-Indigenous Relations in Western Settler Societies* (International Council on Human Rights Policy, 2009).

[78] Fisher, Makey, Macpherson et al., note 21.

[79] Burns, note 29.

[80] Ibid.

[81] Ibid; Fisher, Makey, Macpherson et al., note 21.

A recent study of attempts to implement EBM in comparative laws by Macpherson et al. emphasized that policymakers should move away from framing EBM as a static end point but rather as an "ongoing and relational, human-driven process of iteration, adaptation, reflection and reform."[82] The authors suggested that a relational approach to implementing ecosystem-based management would require effective "hooks" (combinations of rules, tools, and processes that reinforce and enable a coordinated approach to EBM across sectors and scales supported by effective governance institutions and community participation) and "anchors" (overarching or constitution-level legal and policy objectives that set a "mandate" for EBM).[83]

The "hooks and anchors" approach, explored in more detail in the following, aligns with developing international best practice around environmental governance in the context of climate change, with the IPCC recommending a combination of high-level framework laws to set an overarching legal basis, targeted implementation, and sectoral mainstreaming, with effective national institutions to "address coordination across sectors, scales and actors, build consensus for action among diverse interests, and inform strategy setting" and "complementary sub-national institutions" to tailor actions to local context and enable experimentation, noting that these can be limited by "inequities and resource and capacity constraints."[84] In terms of local institutions and process (or "hooks") to support tailored or place-based governance and community participation, there is increasing focus in the international literature on participatory, cross-sectoral, ecosystem-based planning processes.[85]

## Ecosystem-Based Management in Aotearoa NZ

Aotearoa NZ has a large and beautiful coastal marine environment,[86] which is of immense economic,[87] cultural, social,[88] and intrinsic value.[89] However, recent reports detail serious environmental challenges facing, and declining biodiversity in, marine and coastal resources, environments, species, and communities.[90] These include serious threats to marine species and habitats, as a result of cumulative and cross-boundary

[82] Macpherson, Ulrich, Rennie et al., note 4.

[83] See also Julia M. Wondolleck and Steven L. Yaffee, *Marine Ecosystem-Based Management in Practice: Different Pathways, Common Lessons* (Island Press/Center for Resource Economics, 2017) 153. Wondolleck and Yafee use a similar analogy of "bricks" and "mortar" to characterize the sorts of laws, institutions and processes that best support EBM 153.

[84] Intergovernmental Panel on Climate Change, note 34, E.3.2.

[85] Kristin N. Marshall, Phillip S. Levin, Timothy E. Essington et al., "Ecosystem-Based Fisheries Management for Social–Ecological Systems: Renewing the Focus in the United States with Next Generation Fishery Ecosystem Plans" (2018) 11(1) *Conservation Letters* 1.

[86] IILSS, "Exclusive Economic Zone(EEZ) Map of the World," *IILSS-International institute for Law of the Sea Studies* (23 May 2021) available at: http://iilss.net/exclusive-economic-zoneeez-map-of-the-world/(accessed 4 June 2023).

[87] "Why Our Marine Environment Matters," *Ministry for the Environment* (27 April 2021) at: https://environment.govt.nz/facts-and-science/marine/why-oceans-and-coasts-matter/ (accessed 1 September 2022).

[88] "Our Marine Environment 2019" *Ministry for the Environment* at: https://www.mfe.govt.nz/publications/environmental-reporting/our-marine-environment-2019 (accessed 1 September 2022).

[89] Robert A. Makgill and Hamish G. Rennie, "A Model for Integrated Coastal Management Legislation: A Principled Analysis of New Zealand's Resource Management Act 1991" (2012) 27(1) *International Journal of Marine and Coastal Law* 135.

[90] Ministry for the Environment & Stats NZ (2022). *New Zealand's Environmental Reporting Series: Our marine environment 2022*; Ministry for the Environment and Stats NZ "Summary" *Our Marine Environment 2019* (Ministry for the Environment & Stats NZ, 2019); OECD, *OECD Environmental Performance Reviews: New Zealand 2017* (OECD Publishing, 2017); Department of Conservation, note 10.

impacts from land use in receiving coastal and marine environments,[91] extractive and other recreational marine uses,[92] and the impacts of climate change and ocean warming on species range and distribution.[93]

Aotearoa NZ was settled by the British after the signing of *Te Tiriti o Waitangi* and the Treaty of Waitangi between the Crown and Māori chiefs in 1840, forming New Zealand as a constitutional monarchy.[94] Prior to the British acquisition of sovereignty, Māori *iwi* and *hapū* occupied and exercised sovereignty over all of Aotearoa NZ pursuant to an intricate system of traditional laws and customs (*tikanga* Māori).[95] *Te Tiriti* is the founding constitutional document in Aotearoa NZ,[96] and protects Māori rights to their lands, forests, fisheries, and estates (including waters).[97] Aotearoa NZ is a common-law country with a national, parliamentary system of government and an unwritten constitution involving multiple pieces of legislation, rules of the common law, and conventions.[98] There is no general constitutional protection of environmental rights in Aotearoa NZ. The Crown increasingly recognizes its constitutional obligation to partner with Māori in resource management, including the oceans,[99] although the Crown routinely attempts to unilaterally exercise sovereignty and control of marine rights and management.[100] Meaningful partnership and collaboration with Māori, and due respect for Māori rights and interests in the oceans (as required by an ecosystem-based approach), are complicated by the fragmentation of settler marine laws and central and local government institutions.

The territorial sea to 12 NM has the status of "common marine and coastal area," which (as a consequence of Crown attempts to resolve Māori claims to rights in the

[91] Ministry for the Environment and Stats NZ *New Zealand's Environmental Reporting Series: Our Land 2021* (2021) 35, 52 available at: https://environment.govt.nz/assets/Publications/our-land-2021.pdf (accessed 4 June 2023); Parliamentary Commissioner for the Environment, *Managing Our Estuaries* (August 2020) available at: https://pce.parliament.nz/publications/managing-our-estuaries (acessed 6 June 2023).

[92] Office of the Prime Minister's Chief Science Advisor, *The Future of Commercial Fishing in Aotearoa New Zealand: A Report from the Office of the Prime Minister's Chief Science Advisor, Kaitohutohu Mātanga Pūtaiao Matua Ki Te Pirimia* (February 2021) available at: https://www.pmcsa.ac.nz/topics/fish/(accessed 4 June 2023); Bjørn Hersoug, "After All These Years—New Zealand's Quota Management System at the Crossroads" (2018) 92 *Marine Policy* 101; Robert A. Makgill, James D. Gardner-Hopkins, and Natalie R. Coates, "*Trans-Tasman Resources Limited v. Taranaki-Whanganui Conservation Board*" (2020) 35(4) *International Journal of Marine and Coastal Law* 835.

[93] Paul G. Harris, *Climate Change and Ocean Governance: Politics and Policy for Threatened Seas* (Cambridge University Press, 2019); New Zealand and Climate Change Adaptation Technical Working Group, *Adapting to Climate Change in New Zealand* (2017) available at: https://environment.govt.nz/what-government-is-doing/areas-of-work/climate-change/adapting-to-climate-change/climate-change-adaptation-technical-working-group.

[94] New Zealand is a constitutional monarchy and part of the British Commonwealth. See generally Philip A. Joseph, *Constitutional and Administrative Law in New Zealand* (Brookers, 4th ed, 2014) 1.

[95] For an explanation of *tikanga Māori* (Māori law and custom) see Carwyn Jones, *New Treaty, New Tradition: Reconciling New Zealand and Māori Law* (New Zealand Victoria University Press, 2016); see also Clapcott, Ataria, Hepburn et al., note 56.

[96] See Hemopereki Hoani Simon, "Te Arewhana Kei Roto I Te Rūma : An Indigenous Neo-Disputatio on Settler Society, Nullifying Te Tiriti, 'Natural Resources' and Our Collective Future in Aotearoa New Zealand" (2016) 9(1) *Te Kaharoa the E-Journal of Indigenous Pacific Issues* 54, who makes a persuasive case against the Treaty as a foundation of New Zealand as a nation, on the basis of many chiefs/tribes refusing to sign the Treaty and that it has led to a racist, white, patriarchal basis for Crown/*iwi* relationships.

[97] Jones, note 85.

[98] Department of the Prime Minister and Cabinet and Cabinet Office, *Cabinet Manual 2017* (Cabinet Office, Department of the Prime Minister and Cabinet, 2017) available at: https://dpmc.govt.nz/sites/default/files/2017-06/cabinet-manual-2017.pdf (accessed 4 June 2023).

[99] See Jones, note 85; Carwyn Jones, "Māori and State Visions of Law and Peace" in *Indigenous Peoples and the State: International Perspectives on the Treaty of Waitangi* (Routledge, 2018) 16. See, e.g., *Trans-Tasman Resources v Taranaki-Whanganui Conservation Board* (2021) NZSC (2021) 127.

[100] Parsons, Taylor, and Crease, note 56.

territorial sea, including marine tenure) is "incapable of ownership."[101] New Zealand is a state party to a number of international treaties and agreements (including the Convention on the Law of the Sea and Convention on Biological Diversity),[102] which include standards and protections applying to the ocean,[103] and multilateral agreements for the High Seas,[104] and the area beyond the continental shelf.[105]

In recent years, there have been a number of research reports recommending changes to oceans and fisheries law, policy and implementation.[106] These include the work of the Sustainable Seas National Science Challenge, which developed seven principles for EBM: co-governance (governance structures that provide for Treaty of Waitangi partnership, *tikanga* and *mātauranga* Māori); human activities (humans, along with their multiple uses and values for the marine environment, are part of the ecosystem); collaborative decision making (collaborative, co-designed, and participatory decision-making processes involving all interested parties); knowledge-based (based on science and *mātauranga* Māori, and informed by community values and priorities); sustainability (marine environments, and their values and uses, are safeguarded for future generations); adapts (flexible, adaptive management, promoting appropriate monitoring, and acknowledging uncertainty); and tailored (place and time specific, recognizing all ecological complexities and connectedness, and addressing cumulative and multiple stressors).[107]

In 2021, the Prime Minister's Chief Science Advisor released a report on Commercial Fisheries, which recommended that the government develop a "bold Oceans Strategic Action Plan for 2040" to achieve sustainable management,[108] co-designed with Māori and built on respect for *Te Tiriti o Waitangi*, Māori fisheries rights and settlements. The report specifically recommends the adoption of an ecosystem-based approach, to "embed Te Ao Māori [Māori worldview] and an interconnected worldview, taking a long-term, holistic approach which considers future generations, manages connected ecosystem stressors (including plastic pollution, climate change, land-use impacts such as sediment)."[109] The report is optimistic about the opportunities for holistic management of the marine domain and productive, sustainable fisheries, but states that[110]

[101] *Marine and Coastal Area (Takutai Moana) Act 2011* (NZ), section 11.

[102] New Zealand has also ratified the 1973 International Convention for the Prevention of Pollution from Ships (MARPOL) as modified by the Protocol of 1978 and has signed the 1996 United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

[103] Karen N. Scott, "Does Aotearoa New Zealand Need an Oceans Policy for Modern Oceans Governance?" (2021) 35 *Ocean Yearbook* 271.

[104] Fisheries Act 1996 (NZ), Part 6A.

[105] United Nations Convention on the Law of the Sea Act 1996 (NZ). See generally Karen Scott, "Aotearoa New Zealand" in Seokwoo Lee (ed) *Encyclopedia of Ocean Law and Policy in Asia-Pacific* (Brill, 2022), 614.

[106] Ministry for the Environment *Environment Aotearoa 2019* (Statistics New Zealand, 2019) available at: https://natlib-primo.hosted.exlibrisgroup.com/permalink/f/1s57t7d/NLNZ_ALMA21326602500002836 (accessed 4 June 2023); Office of the Prime Minister's Chief Science Advisor, note 82; New Zealand and Office of the Auditor-General, *Using Different Processes to Protect Marine Environments* (2019); Parliamentary Commissioner for the Environment, note 81.

[107] Hewitt, note 20; "Why EBM?," *Sustainable Seas National Science Challenge* at: https://www.sustainableseaschallenge.co.nz/about-us/why-do-we-need-ebm (accessed 1 September 2022).

[108] The PMCSA drew on Scott's work recommending an "Oceans Policy" for New Zealand. Scott, note 93.

[109] Office of the Prime Minister's Chief Science Advisor, note 82.

[110] Ibid, 46.

> Perhaps the fundamental challenge faced by all those focused on the goal of sustainable fishing is to translate an incomplete but increasingly sophisticated understanding of the complex interactions and cumulative pressures on our ecosystems into effective and actionable policies and regulations, along with robust indicators to monitor progress. This ambitious goal is likely to take some time to achieve and demands strong leadership by the fisheries management agency, and a connected community of stakeholders with a shared vision of the future. However, it offers an opportunity for Aotearoa New Zealand to be world leaders in managing commercial fisheries.

Following the 2020 national election, the New Zealand government established the new Ministerial portfolio of Oceans and Fisheries. In 2021, the Minister for Oceans and Fisheries released a "bold new vision" for the portfolio of "ensuring the long-term health and resilience of ocean and coastal ecosystems, including the role of fisheries."[111] The objectives of the portfolio include promoting an ecosystem-based approach to research, monitoring, and management, and its principles are[112]

- Precautionary approach and adaptive management;
- Equitable allocation of costs and benefits;
- Give effect to the principles of Te Tiriti o Waitangi/Treaty of Waitangi, including through fisheries and aquaculture settlements and other legislation;
- Decision making based on sound science and traditional knowledge;
- Consistency with international commitments;
- Transparent, inclusive, and effective public participation processes.

The "initial" Oceans and Fisheries work program checks off a number of conservation, environment, and fisheries reforms that the government had already committed to, while further, long-term work was projected to be announced in June 2022 but is yet to be realized.[113]

Reconciling marine management to this vision will not be easy, given the many intersecting laws and organizations managing human relationships with marine environments and resources in Aotearoa NZ.[114] Local government authorities are primarily responsible for planning and decision making about the use of the coastal and marine environment within Aotearoa NZ's 12 NM territorial sea[115] in accordance with the Resource Management Act 1991 (RMA)[116] and the *New Zealand Coastal Policy Statement*

[111] David Parker, "Oceans and Fisheries: Our Vision for Healthy and Productive Oceans" 26 June 2022, *The Beehive* at: https://www.beehive.govt.nz/speech/oceans-and-fisheries-our-vision-healthy-and-productive-oceans (accessed 1 September 2022).

[112] David Parker "Government Adopts Oceans Vision" 26 June 2021 *The Beehive* at: https://www.beehive.govt.nz/release/government-adopts-oceans-vision (accessed 1 September 2022).

[113] Office of the Minister for Oceans and Fisheries and Chair, Cabinet Environment, Energy and Climate Committee, *Oceans and Fisheries Portfolio—Ensuring Healthy Ocean Ecosystems* (Cabinet Paper) available at: https://www.mpi.govt.nz/dmsdocument/45754-Oceans-and-Fisheries-portfolio-ensuring-healthy-ocean-ecosystems-Cabinet-paper (accessed 4 June 2023). This includes a Fisheries Act amendment, cameras on fishing boats, open ocean aquaculture, marine protected areas reform, marine spatial planning initiatives in the Hauraki Gulf, the *Rangitāhua*/Kermadec Ocean Sanctuary, a proposed network of marine protected areas in the southeastern South Island coastal marine area, and Hector's and Māui dolphin threat management plan.

[114] Macpherson, Ulrich, Rennie et al., note 4, schedule.

[115] The coastal environment extends landward beyond the territorial sea—but the maximum extent of local government boundaries is the 12 NM boundary of the territorial sea.

[116] Resource Management Act 1991 (NZ), sections 30, 31, 60, 64, 65, 73.

*2010* (NZCPS) prepared by the Minister of Conservation.[117] Recreational, customary, and commercial fisheries are primarily regulated by the Ministry of Primary Industries to provide for their utilization while ensuring sustainability.[118] However, indigenous, rare, or endangered species and rare or representative ecosystems may be protected (through the establishment of reserves, sanctuaries or parks) or managed in accordance with endangered species plans prepared by the Department of Conservation.[119] The various statutes require consultation between these decision makers and require regard to the relevant plans policies and strategies each has completed. The Environmental Protection Authority is responsible for the assessment and approval of activities that affect the seabed (specifically, structures on, disturbance of, depositing on, or extracting from) with adverse environmental effects in the exclusive economic zone (EEZ) (from 12 NM to 200 NM) and the continental shelf.[120] However, this does not include the discharge or dumping of contaminants or lawful fishing. Other government authorities involved in marine regulation include the Ministry for Foreign Affairs and Trade, regulating sea-bed uses beyond the continental shelf[121]; the Department of Internal Affairs concerned with certain islands; Maritime New Zealand, with responsibility for navigation safety and emergency responses to oil spills and similar events; and the Ministry of Business, Innovation, and Employment, allocating petroleum and mineral rights[122]; with the Ministry of Defence[123] and the Ministry of Health each having the ability to impose restrictions on access to areas of the sea for defense and quarantine purposes.[124] The Ministry for the Environment administers the RMA and has relevant functions under other environmental laws (see, e.g., the *Environmental Reporting Act 2015*), established alongside an independent Parliamentary Commissioner for the Environment by the *Environment Act 1986*. A range of Māori entities also undertake ocean regulation and management at the *iwi* (tribe), *hapū* (subtribe), *whānau* (family), and individual level, as well as national bodies like Te Ohu Kaimoana, which "work to advance Māori interests in the marine environment, including customary fisheries, commercial fisheries and aquaculture as well as providing policy and fisheries management advice to *iwi* and the wider Māori community,"[125] and Te Arawhiti (The Office for Māori Crown Relations), which oversees the process of *Tiriti* settlement negotiations between the Crown and Māori, including under the *Marine and Customary Area (Takutai Moana) Act 2011*.

In 2022, the Environmental Defence Society released its report, *The Breaking Wave: Oceans Reform in Aotearoa New Zealand*, partly funded by the New Zealand government and launched by the Minister for Conservation. This report sets out a number of options for reforming Aotearoa NZ's oceans management system, in which the

[117] Ibid, sections 28, 57.

[118] Fisheries Act 1996. In *New Zealand Recreational Fishing Council Inc v Sanford Ltd* [2009] NZSC 54 the Supreme Court noted that "utilisation must not be such as to jeopardise sustainability. Fisheries are to be utilised, but sustainability is to be ensured."

[119] Conservation Act 1987 (NZ).

[120] Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (NZ).

[121] United Nations Convention on the Law of the Sea Act 1996 (NZ).

[122] Continental Shelf Act 1964 (NZ); Crown Minerals Act 1991 (NZ); Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012.

[123] Defence Act 1990 (NZ).

[124] Health Act 1956 (NZ).

[125] "Te Ohu Kaimoana," *Te Ohu Kaimoana* at: https://teohu.maori.nz/home-2 (accessed 1 September 2022).

society's desire for "deeper systemic reform" is obvious.[126] The challenge of oceans reform is great in Aotearoa NZ's constitutional context, given the *Tiriti* imperative to partner with Māori in designing law reform, although it is unlikely that Māori, *iwi*, or *hapū* had any role in the design of the new vision for the ocean, given that the Minister for Oceans and Fisheries "did not formally consult on" it.[127] To help implement the new vision and coordinate policy developments across government, the Minister established an "Oceans and Marine Ministers Group" comprising the Ministers for Oceans and Fisheries, Environment and Conservation, and "Oceans Secretariat" hosted at the Department of Conservation, comprising officials from there, the Ministry for Primary Industries, and the Ministry for the Environment (again, with the notable absence of any Māori policy unit, or local government).[128] In the following subsections, we highlight opportunities to enhance ecosystem-based management approaches in four key areas of marine law and policy.

### Opportunities for EBM in Fisheries Allocation and Management

Fishing in Aotearoa NZ (out to the 200 NM limit of the EEZ) is primarily managed under the Fisheries Act 1996, and related regulations,[129] as part of a single-sector, market-based regime for fisheries allocation and regulation.[130] The purpose of the Fisheries Act is to "to provide for the utilization of fisheries resources while ensuring sustainability." "Ensuring sustainability" means "maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations and avoiding, remedying, or mitigating any adverse effects of fishing on the aquatic environment," and "utilization" means "maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations."[131] The Act, among other things, establishes a system of transferable property rights to catch fish for commercial use (called the Quota Management System or QMS).[132] Recreational (amateur) fishing is controlled predominantly through daily combined and individual bag limits, and other sustainability measures include accumulation limits, size, season, and gear restrictions and are applied to specified areas.[133]

The QMS, a market-based regime for fishing rights allocation, was devised in the 1980s as part of the then-government's vision of market environmentalism. However, in its establishment, the Crown breached its obligations to Māori, who had fishing rights under common law and *Te Tiriti* that were protected by the then Fisheries

[126] Severinsen, Peart, Rollinson, et al., note 9, 2.

[127] Office of the Minister for Oceans and Fisheries and Chair, Cabinet Environment, Energy and Climate Committee, note 104, 9. This is despite the fact that the Prime Minister's Chief Science Advisor has strongly urged consultation.

[128] Ibid.

[129] Other resources in the marine and coastal area are subject to allocation regimes under the Crown Minerals Act 1991 (NZ); Fisheries Act 1996; and (within the territorial sea) the coastal tendering provisions of the Resource Management Act 1991 (NZ), Māori fisheries, protected by the Treaty and national legislation.

[130] Marine aquaculture is managed under both the Fisheries Act 1996 (NZ) and the Resource Management Act 1991 (NZ).

[131] Fisheries Act 1996 (NZ), section 8.

[132] Ibid, setion 13, Schedule 1A, Art. 5.

[133] Ibid, section 11(3)(a-e).

Act.[134] In response to legal and political action by Māori, the Crown agreed to interim and final fisheries settlements to resolve the dispute.[135] Pursuant to these settlements, and in response to Māori dropping their commercial fisheries claims, the Crown allocated 10 percent of fish species in the QMS to Māori and promised Māori a 20 percent share of new quota brought into the QMS. The settlements also provided other commercial fishing interests to Māori (including funds to purchase shares in fisheries companies) and the ability for individual *iwi* settlement rights to be collectively managed and allocated by a Māori Fisheries Commission (now known as Te Ohu Kaimoana).[136]

The settlement also provided for the promulgation of regulations to recognize and protect Māori customary fishing rights and their management,[137] again led by Te Ohu Kaimoana, taking an increasingly holistic view of their role as leaders in marine issues in Aotearoa NZ. Te Ohu Kaimoana's strategy, called "*Te hā o Tangaroa kia ora ai tāua*" (meaning "the breath of Tangaroa sustains us"), is framed around the "ongoing interdependent relationship" between Māori and living Tangaroa (the metaphysical personification of the ocean),[138] and emphasizes reciprocal rights and obligations to care for the benefit of future generations.[139]

The QMS now covers 98 species and 642 separate fish stocks within Aotearoa NZ's marine jurisdiction.[140] If the Minister is not satisfied that management of a fish stock outside of the QMS is ensuring sustainability (noting that most fish stocks outside the QMS, and many within, are not monitored),[141] the Minister has the power to declare that a fish stock be brought within the QMS.[142] The Act then provides for the setting of a "total allowable catch" (TAC) and to subsequently set a Total Allowable Commercial Catch (TACC), with the TACC for each stock to be expressed as shares in a fish stock (called Individual Transferable Quota or ITQ),[143] which are bought, sold, and otherwise transferred in markets. Initial allocation of ITQ to fishers of new stocks bought into the QMS is based upon fishers' catch history for that particular stock. Being well defined, defendable, and divestible, ITQ act as relatively strong, in-perpetuity property

[134] Section 88(2) of the Fisheries Act 1983 (NZ) explicitly stated that "nothing in this Act shall affect any Māori fishing rights"; see *Report of the Waitangi Tribunal on the Muriwhenua Fishing Claim* (Wai 22, 1988); also *Te Runanga o Muriwhenua Inc v Attorney-General* 2 NZLR 641 (New Zealand Court of Appeal, 1990).

[135] Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (NZ).

[136] Māori Fisheries Act 2004 (NZ).

[137] Fisheries (Kaimoana Customary Fishing) Regulations 1998 apply to the North Island and Chatham Islands. The South Island Customary Fishing Regulations 1999 include provisions for locally managed Mātaitai reserves, Taiāpure, temporary closures and restrictions on fishing methods (sections 186A and 186B closures), and customary closures called *Rāhui*.

[138] Tangaroa is generally understood to be the son of Ranginui (the sky father) and Papatūānuku (the earth mother). See Paul Meredith, "Ti he ika—Māori Fishing—Tangaroa, God of the Sea" *Te Ara The Encyclopedia of New Zealand* at: https://teara.govt.nz/en/te-hi-ika-maori-fishing/page-1 (accessed 1 September 2022).

[139] "Te Hā o Tangaroa Kia Ora Ai Tāua" 2022 *Te Ohu Kaimoana* at: https://teohu.maori.nz/te-ha-o-tangaroa-kia-ora-ai-taua (accessed 4 June 2023).

[140] "Fish Quota Management System" *MPI—Ministry for Primary Industries | Manatū Ahu Matua* 16 November 2020 at: https://www.mpi.govt.nz/legal/legislation-standards-and-reviews/fisheries-legislation/quota-management-system (accessed 1 September 2022).

[141] Fisheries Act 1996 (NZ), section 17B. See Fisheries New Zealand "Status of New Zealand's Fish Stocks 2021" 2021 *Ministry for Primary Industries | Manatū Atu Matua* at: https://www.mpi.govt.nz/dmsdocument/44890-The-Status-of-New-Zealands-Fisheries-2020 (accessed 1 September 2022).

[142] Fisheries Act 1996 (NZ), section 18.

[143] Ibid, section 42.

rights, dealings in which are registered and guaranteed, and available to mortgage or caveat.[144]

Each year, the Minister must set the TAC for each fish stock within the QMS, which must be set at a level that will maintain, replenish, or potentially reduce the stock at or to a level that can produce the "maximum sustainable yield" (MSY).[145] The Minister is then required (for each TAC limit applying to each stock) to divide it as between TACC,[146] and everything else (which might include any combination of recreational fishing, customary uses, and all other fishing-related mortality).[147] Each year a quota owner is notified of their "Annual Catch Entitlement" (ACE, generated through their ITQ), which varies as the TAC for the stock varies (and can therefore effectively be set to zero if the stock is depleted and TACC is reduced to zero). The ACE, generated and allocated to/held by the quota owner at the start of the fishing year, can then be fished by the quota owner or leased to other fishers. The Ministry for Primary Industries acquires information on the effects of fishing to guide the setting of annual catch entitlement from a number of sources, including the *Aquatic Environment and Biodiversity Annual Review.*[148] Although the Ministry's process does not usually include any analysis of the social, cultural or economic effects of the fishing activity or of any changes to that activity, the Minister may still consider such matters in reaching decisions.

The Fisheries Act provides for several monitoring and compliance mechanisms, including requirements to report catch and penalties for overfishing. The Act also includes "environmental principles," which all persons exercising or performing functions, duties, or powers under it must "take into account."[149] These are that "associated or dependent species should be maintained above a level that ensures their long-term viability; biological diversity of the aquatic environment should be maintained; and habitats of particular significance for fisheries management should be protected." The Act also provides "information principles" in section 10, reflecting a "precautionary approach" in which decisions are based on the best information taking a cautious approach, and reflecting that a lack of information is not used to avoid measures to achieve the purpose of the Act.

Despite the presence of environmental and information principles in the Fisheries Act, it has been primarily (yet not necessarily) a single-sector approach to marine management, applying to the management of "fisheries resources," meaning, "any 1 or more stocks or species of fish, aquatic life, or seaweed."[150] Implementation of the Fisheries Act, to date, has focused on setting the conditions for and regulating the allocation of rights to utilize single-stock fisheries in isolation from impacts on any other fish stock, without considering broader ecosystem impacts such as impact on

[144] Fisheries Act 1996 (NZ), sections 136–152.

[145] Ibid section 13.

[146] Ibid section 20.

[147] Ibid section 21. See *New Zealand Recreational Fishing Council Inc v Sanford Ltd* [2009] NZSC 54; [2009] 3 NZLR 438.

[148] Ministry for Primary Industries, *Aquatic Environment and Biodiversity Annual Review (AEBAR)—2021* (Fisheries New Zealand, 2022) available at: https://www.mpi.govt.nz/science/fisheries-research-and-science/about-our-fisheries-research/aquatic-environment-and-biodiversity-annual-review-aebar (accessed 4 June 2023).

[149] Fisheries Act 1996 (NZ), section 9.

[150] Fisheries Act 1996 (NZ), section 2.

marine habitat or communities or the cumulative impacts of fishing alongside other marine uses (such as aquaculture).[151] Some might argue that managing environmental effects is best provided for through regional planning processes established by the RMA[152]; however, as we discuss in the following, there are significant structural barriers to local government authorities effectively regulating the seas. We consider there are significant opportunities under the Fisheries Act for a more integrated and ecosystem-based approach to fisheries regulation to ensure the ongoing health of fisheries and their environment, and growing commitment to this within government, industry, and communities. This is entirely consistent with the purposes of the Fisheries Act, including maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations; avoiding, remedying, or mitigating any adverse effects of fishing on the aquatic environment; and conserving, using, enhancing, and developing fisheries resources to enable people to provide for their social, economic, and cultural well-being.[153] Doing so will require a whole-government approach to manage fisheries species and habitats, in the context of some level of ongoing and inevitable uncertainty about the health of marine ecosystems, especially as climate change implies ongoing environmental uncertainty.[154]

An amendment to the Fisheries Act is currently before Parliament, although it is a "tinkering around the edges" rather than substantive reform. Among other things, the amendment includes new rules about commercial fishing landings and discards and the use of on-board cameras on vessels, and a revised offenses and penalties regime.[155] One promising area of policy development is the government's release of draft guidelines for identifying "habitats of particular significance for fisheries management,"[156] required to be protected under the Fisheries Act's environmental principles.[157] The draft guidelines recognize that "Fisheries New Zealand is progressing towards ecosystem-based management—an integrated approach to managing competing values and uses of marine resources, while maintaining the ecosystems that support them" and specifically refers to the oceans and fisheries work program and *Te Mana o te Taiao—Aotearoa New Zealand Biodiversity Strategy* (discussed in the following).[158] The guidelines will provide a definition for habitats of significance for fisheries (and a commitment to collaborate with Māori in doing so) and are intended to provide greater transparency on the fisheries management advice being given by central government. The government proposes to use the guidelines to establish processes for managing adverse effects on fish habitats of significance (including nonfishing stressors)

[151] Ibid, section 8; Raewyn Peart, Alison Greenaway and Lara Taylor, "Enabling Marine Ecosystem-Based Management: Is Aotearoa New Zealand's Legal Framework up to the Task" (2019) 23 *New Zealand Journal of Environmental Law* 31.

[152] Robert A. Makgill, "Sustainable Management of the Sea: Identifying a Body of Sustainable Management Jurisprudence Composed of Law of Sea Doctrine and New Zealand State Practice" (PhD Thesis, Ghent University, 2020).

[153] Fisheries Act 1996 (NZ), section 8.

[154] Harris, note 84, 79.

[155] Fisheries Amendment Bill 2022 (NZ).

[156] Fisheries New Zealand, *Draft: Guidelines for Identifying a Habitat of Particular Significance for Fisheries Management* (2022) available at: https://www.mpi.govt.nz/dmsdocument/51901-Draft-guidelines-for-identifying-a-habitat-of-particular-significance-for-fisheries-management (accessed 4 June 2023).

[157] Fisheries Act 1996 (NZ), section 9c.

[158] Fisheries New Zealand, *Draft: Guidelines for Identifying a Habitat of Particular Significance for Fisheries Management* (2022) available at: https://www.mpi.govt.nz/dmsdocument/51901-Draft-guidelines-for-identifying-a-habitat-of-particular-significance-for-fisheries-management 5 (accessed 4 June 2023).

and the information and research needed to support their management. The initial working definition provided in the draft guidelines is "an area or areas of particular significance in supporting the productivity of fisheries resources."[159] This definition looks fairly circular: "*an area of particular significance is an area of particular significance*," and in our view, a more specific definition should be provided in order that such issues are not left to the courts to settle. Still, the process of developing the guidelines and the commitment to partnership with Māori is complementary with an ecosystem-based management approach, and there may be further scope for habitats of particular significance to contemplate broader ecosystem values rather than just for fishing purposes.

A concern typically raised with the implementation of the Fisheries Act is the absence of institutions and capacity to support collaboration and interaction among regulatory or policy agencies, including Māori *iwi* and *hapū*. An EBM approach requires collaboration across sectors and scales to properly understand the impact of cumulative activities in the marine environment. Institutional arrangements have rarely incentivized or created opportunities for land use impacts to be accounted for by decision makers undertaking fisheries stock assessments, for example (although they are proposed to be considered in the identification of habitats of particular significance). There have, however, been some ad hoc examples of positive, cross-sector, and intergovernmental strategies, plans, and collaborations developed under the Fisheries Act to manage the impact of fishing on other species, although these are often overlooked in the critical literature. Examples include National Plans of Action developed in line with international commitments for seabirds (2020)[160] and sharks (2013),[161] directed at minimizing fishing bycatch.[162] The National Rock Lobster Management Group is an example of a cross-sector management group providing advice directly to the Minister.[163] In other countries, collaborative, local-scale fisheries committees have had some success in developing shared priorities for fisheries management.[164]

There is potential to develop further collaborative, cross-sectoral fisheries alliances or committees in Aotearoa NZ in partnership with Māori, especially in inshore areas where fishing industry, *iwi* and *hapū*, and stakeholders could come together to develop fisheries plans and strategies. These include fisheries plans under section 11A of the Act, which can apply to multiple fisheries stocks across multiple years, and include rules to manage interactions between fisheries sectors, sustainability measures, conservation services, and contingency strategies. In other countries, fisheries management plans have been used in conjunction with ecosystem-based management, although

[159] Fisheries New Zealand, *Draft: Guidelines for Identifying a Habitat of Particular Significance for Fisheries Management* (2022) available at: https://www.mpi.govt.nz/dmsdocument/51901-Draft-guidelines-for-identifying-a-habitat-of-particular-significance-for-fisheries-management. 7 (accessed 4 June 2023).

[160] "National Plan of Action for Seabirds 2020" *Ministry for Primary Industries* at: https://www.mpi.govt.nz/consultations/national-plan-of-action-for-seabirds-2020 (accessed 1 September 2022).

[161] "National Plan of Action for Sharks 2022" *Ministry for Primary Industries* at: https://www.mpi.govt.nz/consultations/national-plan-of-action-for-sharks-2022 (accessed 1 September 2022).

[162] These are voluntary instruments devised within the framework of the United Nations Food and Agriculture Organisation (FAO) Code of Conduct for Responsible Fisheries.

[163] Fisheries New Zealand, "The National Rock Lobster Management Group," *Ministry for Primary Industries | Manatū Ahu Matua* at: https://www.mpi.govt.nz/fishing-aquaculture/sustainable-fisheries/the-national-rock-lobster-management-group (accessed 2 April 2022).

[164] Macpherson, Ulrich, Rennie et al., note 4.

their success depends on industry and community buy-in with clear and common vision, adequate scientific information, and sufficient government funding.[165] In Aotearoa NZ, similar broad fisheries management planning with mandatory public participation and appeal rights commenced in the 1980s under the Fisheries Act 1983,[166] but was discontinued and removed from the legislation in the 1990s,[167] with the shift to the neoliberal market-based QMS.[168] The more flexible provisions for fisheries plans introduced into the legislation in 1999[169] have not been widely used, although there are plans in place for deep-water and highly migratory species.[170] There are draft plans for inshore finfish,[171] shellfish,[172] and freshwater fisheries, although these have progressed little in the past ten years. Fisheries regulators might also take inspiration from emerging examples of collaborative governance models from other areas of environmental management, including models that draw on *mātauranga* Māori and reflect partnership between governments and Indigenous peoples.[173] A national fisheries policy framework could help to clarify environmental targets for fisheries regulators and drive coordination and integration across sectors and scales, but there are also underutilized tools in the current Fisheries Act that could support greater intersector integration and collaboration.

Much of the criticism by environmental scholars and activists of the Fisheries Act implementation focuses on the inadequacy of information about the condition and spatial distribution of fish stocks[174] or broader ecosystem health (including community and cultural well-being) required for decision makers to decide on catch limits—including scientific data and Māori knowledge (*mātauranga* Māori). Hersoug has argued, for example, that decision makers fail to properly undertake stock assessments and fail to consider broader environmental and ecosystem impacts or to take a precautionary approach.[175] Critics argue that the dearth of real-time scientific information provided to decision makers about the health of marine ecosystems and resources may provide conditions conducive to industry pressure or capture.[176]

[165] Carlos A. Chávez, James J. Murphy, and John K. Stranlund, "Managing and Defending the Commons: Experimental Evidence from TURFs in Chile" (2018) 91 *Journal of Environmental Economics and Management* 229; Macpherson, Ulrich, Rennie et al., note 4.

[166] Fisheries Act 1983 Part 1. See generally Hamish Rennie, "The Coastal Environment" in *Environmental Planning in New Zealand* (Dunmore Press, 1993) 150.

[167] Fisheries Act 1996 (NZ), section 314(1)(zm).

[168] Hamish G. Rennie, "Coastal Fisheries and Marine Planning in Transition" in P. A. Memon and Harvey C. Perkins (eds), *Environmental Planning and Management in New Zealand* (Dunmore Press, 2000) 215–222.

[169] Fisheries Amendment Act 1999 (NZ), section 6.

[170] Ministry of Primary Industries, *National Fisheries Plan for Highly Migratory Species 2019* (Fisheries New Zealand, 2019, Discussion Paper No: 2019/18).

[171] Fisheries New Zealand, *Draft National Inshore Finfish Fisheries Plan* (New Zealand Government, 2019) available at: https://www.mpi.govt.nz/consultations/draft-national-inshore-finfish-fisheries-plan (accessed 4 June 2023).

[172] Ministry of Fisheries, *Draft National Fisheries Plan for Inshore Shellfish* (Ministry of Fisheries, 2011) available at: https://www.mpi.govt.nz/fishing-aquaculture/fisheries-management/inshore-fisheries (accessed 4 June 2023).

[173] Fisher, Makey, Macpherson et al., note 21.

[174] Cordelia Moore, Jeffrey C. Drazen, Ben T. Radford et al., "Improving Essential Fish Habitat Designation to Support Sustainable Ecosystem-Based Fisheries Management" (2016) 69 *Marine Policy* 32; Leonardo Maia Durante, Michael Peter Beentjes, and Stephen Richard Wing, "Shifting Trophic Architecture of Marine Fisheries in New Zealand: Implications for Guiding Effective Ecosystem-Based Management" (2020) 21(4) *Fish and Fisheries* 813.

[175] Hersoug, note 82; Steve Urlich, "The Earth Summit 25 Years On : Why Is Biodiversity Continuing to Decline?" [2018] *Resource Management Journal (Online)* 19.

[176] Elizabeth Slooten, Glenn Simmons, Stephen M. Dawson, et al., "Evidence of Bias in Assessment of Fisheries Management Impacts" 114(25) *PNAS* E4901 available at: https://www.pnas.org/doi/epdf/10.1073/pnas.1706544114 (accessed 4 June 2023).

The Chief Science Adviser's 2021 report on the *Future of Commercial Fishing* acknowledges that fisheries data are often uncertain and margins of error promote multiple and varying interpretations of the data, which can create tensions.[177] When making decisions about TAC, for example, the Minister must have regard to the "best available information."[178] In determining the rate, or way in which a depleted stock should move toward MSY, the Minister considers social, cultural, and economic factors that the Minister considers relevant, but usually does so in the absence of a quantitative mechanism, in contrast to those used in the *Aquatic Environment and Biodiversity Annual Review*.

A recent High Court decision about the Minister's setting of TAC (with consequential effects for TACC) for the overfished East Coast Tarakihi illustrates these tensions.[179] The Court overturned the Minister's TAC decision on the basis that in determining the appropriate period for the fish stock to rebuild to MSY the Minister had made an error in law by considering irrelevant social, cultural, and economic matters (raised by the fishing industry and Te Ohu Kai Moana).[180] In addition, the Minister had failed in the mandatory requirement to consider the best available information, its 2008 Harvest Strategy Standard, when determining the probability of achieving the targeted MSY biomass within that period.[181]

The Chief Science Adviser's report and *Tarakihi* decision (and the work already underway around identifying habitats of particular significance) signal an opportunity for central government to show leadership in developing a "national fisheries policy framework," including the introduction of clear guidelines about the information on which decisions will be based, while acknowledging that we will never have perfect information about the health of the ocean.[182] A national fisheries policy framework should reflect science (fisheries, oceanography, ecology, and *mātauranga* Māori), noting that Māori are *Tiriti* partners in oceans management in Aotearoa NZ, as well as being significant commercial quota holders, customary rightsholders, and recreational fishers.[183]

Criticisms of fisheries management in Aotearoa NZ are often directed to the QMS and to criticism of market-based approaches to the allocation of environmental use rights and resulting environmental externalities.[184] However, market environmentalism is applied to a range of other ecosystems, including land, water, forestry, carbon, and energy.[185] In other countries, legal mechanisms have been devised to position the

[177] Office of the Prime Minister's Chief Science Advisor, note 82.

[178] Fisheries Act 1996 (NZ), section 13.

[179] *Royal Forest and Bird Protection Society of New Zealand Inc v Minister of Fisheries* [2021] NZHC 1427.

[180] Ibid at 109.

[181] Ibid, at 152, 156 for determining what was "best available information" and at 168 for concluding that there was a failure to have regard to this mandatory relevant consideration.

[182] Office of the Prime Minister's Chief Science Advisor, note 82.

[183] Ibid.

[184] See, e.g., Hersoug, note 82.

[185] Bruce A. Ackerman and Richard B. Stewart, "Reforming Environmental Law: The Democratic Case for Market Incentives" (1988) 13 *Columbia Journal of Environmental Law* 171; Lee Godden, "Governing Common Resources : Environmental Markets and Property in Water" in *Property and the Law in Energy and Natural Resources* (Oxford University Press, 2010) 413.

environment as a rightsholder,[186] through mechanisms like environmental reserves, trusts, or holders,[187] although Aotearoa NZ does not currently have legal rights for the environment in the marine context.[188]

Despite the challenges facing fisheries regulators in Aotearoa NZ, there are key opportunities for Fisheries Act implementation to better support an EBM approach, including information and knowledge to inform decisions about catch entitlements, and the developing of a supportive national fisheries planning framework based on a more holistic understanding of fish as part of a broader ecosystem that also accounts for Māori place-based authority.[189]

### *Opportunities for EBM When Managing Environmental Effects in the Ocean*

The RMA is New Zealand's main environmental law and brings together previous planning law statutes covering land, air, and water. However, the RMA is still limited in the scope and nature of its application, and has until recently engaged in a piecemeal way with marine management.[190] It applies across the land/sea boundary (coastal environment) through to the 12 NM boundary of the territorial sea (referred to in the Act as the "coastal marine area").[191] Similarly framed legislation manages environmental effects in the EEZ out to 200 NM, although the legislation differs in several important respects, including its reference to international law, as discussed in the following.[192]

In terms of institutions, regional local government authorities are primarily responsible for implementing planning and policy under the RMA, including in the coastal marine area, in accordance with regionally developed planning documents. The Minister for Conservation also has a number of important functions in the coastal environment, including preparing and monitoring implementation of the *New Zealand Coastal Policy Statement* (NZCPS),[193] and approving regional coastal plans.[194] Both the Ministry for the Environment and the Parliamentary Commissioner for the Environment also have a leadership and oversight role for environmental law and policy under the Environment Act 1986, which makes specific reference to the need to take "full and balanced account of" "the intrinsic values of ecosystems" and the "values which are placed by individuals and groups on the quality of the environment" alongside Treaty rights and the rights of future generations.[195] The core function of the RMA is to manage the effects of

[186] Erin O'Donnell, "Institutional Reform and the Victorian Environmental Water Holder" (2011) 22(2/3) *Journal of Water Law* 78.

[187] Erin O'Donnell, "Competition or Collaboration? Using Legal Persons to Manage Water for the Environment in Australia and the United States" (2017) 34 *Environmental and Planning Law Journal* 503.

[188] Nor does Aotearoa NZ have constitutional environmental rights protections in the New Zealand Bill of Rights Act 1990.

[189] Larry B. Crowder, Elliott L. Hazen, Naomi Avissar et al., "The Impacts of Fisheries on Marine Ecosystems and the Transition to Ecosystem-Based Management" (2008) 39(1) *Annual Review of Ecology, Evolution, and Systematics* 259.

[190] Although not considered here, the environmental effects of aquaculture are also managed under the RMA by local authorities, although impacts of aquaculture on commercial, customary, and recreational fishers are addressed under the Fisheries Act by the Ministry for Primary Industries; Resource Management Act 1991 (NZ), section 9.

[191] Ibid, section 2.

[192] Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (NZ).

[193] Resource Management Act 1991 (NZ), sections 57, 28.

[194] Ibid, schedule 1.

[195] Environment Act 1986 (NZ) preamble.

activities on the environment, rather than regulating activities themselves.[196] Section 12 of the RMA places restrictions on certain activities in the coastal marine area (including disturbing the foreshore and seabed, resource extraction reclamation works, marine occupation, constructing structures, or depositing substances) unless authorized by a national environmental standard, a rule in a regional coastal plan, or a resource consent (known as a coastal permit). Key functions of regional authorities under the RMA are to prepare regional coastal plans applying to the marine and coastal area, and to decide applications for coastal permits.

The purpose of the RMA as set out in section 5 is to "promote the sustainable management of natural and physical resources," where sustainable management means

> managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and avoiding, remedying, or mitigating any adverse effects of activities on the environment.

The RMA also includes three provisions that set overarching obligations to Māori,[197] but they fall short of reflecting the constitutional nature of the Crown's pact with Māori under *Te Tiriti* (essential for the implementation of an EBM approach).[198] These include requirements that decision makers "recognise and provide for" the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, *wāhi tapu* (sacred sites), and other taonga (treasures)[199]; "have particular regard" to *kaitiakitanga* (the exercise of guardianship by the tangata whenua of an area in accordance with *tikanga* Māori in relation to natural and physical resources including the ethic of stewardship)[200]; and "take into account" the principles of the Treaty.[201] These requirements have been characterized as "strong directions, to be borne in mind at every stage of the planning process."[202] However, these "considerations" are merely part of the range available under the RMA, and do not have any priority. *Iwi* authorities and customary marine title groups are required to be consulted in the preparation of regional coastal plans. Still, the courts have made clear that these provisions do not give Māori a right of veto, and should an unfavorable decision be issued, it is enough that the decision maker has considered the Treaty principles,[203] prompting criticism by the Waitangi Tribunal, which has argued that the Crown should "compensate for the prejudice suffered from the current RMA regime."[204] Resource consents (including

[196] Resource Management Act 1991 (NZ), section 5.

[197] Resource Management Act 1991 (NZ), sections 6, 7, and 8.

[198] "Extracts from Waitangi Tribunal Commentary, Findings and Recommendations on the Resource Management Act 1991," *Ministry for the Environment* (22 July 2021) at: https://environment.govt.nz/publications/tribunal-findings-rma/(accessed 4 June 2023).

[199] Resource Management Act 1991 (NZ), section 6(e).

[200] Ibid, section 7(a).

[201] Ibid, section 8.

[202] *McGuire v Hastings District Council* [2000] UKPC 43; *McGuire v Hastings District Court* [2002] NZLR 577 PC 594 (Lord Cooke of Thorndon).

[203] *Watercare Services Ltd v Minhinnick* (1998) 1 NZLR 63 79 (HC).

[204] Waitangi Tribunal, *Te Mana Whatu Ahuru: Report on Te Rohe Pōtae Claims—Pre-Publication Version* (2019) IV 700, 21.6; see also Waitangi Tribunal, *The Ngawha Geothermal Resource Report 1993, WAI 304* (Legislation Direct, 2006).

coastal permits) may be granted with inadequate or no consultation with Māori,[205] and the Environment Court has been wary about the weight, content, and application of *tikanga* Māori (Māori law and custom),[206] although there is a clear tendency of courts to give increased weight to *tikanga*.[207] In the absence of adequate provision for *tikanga* under the RMA, some *iwi*/*hapū* have developed internal processes of resource management, including *iwi*-specific cultural health indices (e.g., *Mauri* Index),[208] and practical monitoring systems drawing on *mātauranga* (Māori knowledge).[209]

Aotearoa NZ's environmental planning regime is framed around a hierarchy of directives at national, regional, and district scale under the RMA. National-level policy documents on a range of issues must be given effect to in regional planning policies tailored to local areas. These include the NZCPS, which provides high-level direction for how regional councils manage the coastal environment.[210] The policy statement is an ambitious document, which includes several policies that align closely with an ecosystem-based approach, including as its first objective[211]

> to safeguard the integrity, form, functioning and resilience of the coastal environment and sustain its ecosystems, including marine and intertidal areas, estuaries, dunes and land, by: maintaining or enhancing natural biological and physical processes in the coastal environment and recognising their dynamic, complex and interdependent nature; protecting representative or significant natural ecosystems and sites of biological importance and maintaining the diversity of New Zealand's indigenous coastal flora and fauna; and maintaining coastal water quality, and enhancing it where it has deteriorated from what would otherwise be its natural condition, with significant adverse effects on ecology and habitat, because of discharges associated with human activity.

In terms of *Tiriti* obligations, the statement includes an objective that regional authorities "take account" of the principles of the Treaty of Waitangi and recognize the role of Māori as *kaitiaki* (caretakers or guardians) in management of the coastal environment, by recognizing Māori relationships with lands and resources, promoting meaningful relationships and interactions between Māori and persons exercising functions and powers under the Act, and incorporating *mātauranga* into sustainable management.[212] Other objectives recognize the connection of community well-being to coastal management,[213] and require coastal management to reflect international law

[205] See Resource Management Act 1991 (NZ) section 36A., which provides that that a local authority does not have to consult any person about an application. However, a consent application must include an assessment of environmental effects. As part of that assessment, any effect on resources having cultural and spiritual value must be considered (sch 4, (7)(1)(d) and sch 4 (6)(1)(h)).

[206] *Beadle v Minister of Corrections* [2002] BCL 701 BC200269088 EC [436], [497].

[207] See, e.g., *Outstanding Landscape Protection Society v Hastings District Council* [2008] NZRMA 8 EC 29–30. See generally *Peter Hugh McGregor Ellis v R [2020] NZSC 89* (1 September 2020).

[208] See, e.g., NIWA, *2016 Pilot Waikato River Report Card: Methods and Technical Summary—Prepared for Waikato River Authority* (NIWA, March 2016).

[209] See, e.g., the "Ngā Waihotanga Iho—The Estuary Monitoring Toolkit," *NIWA* 29 August 2016 at: https://niwa.co.nz/te-kuwaha/tools-and-resources/ng%C4%81-waihotanga-iho-the-estuary-monitoring-toolkit (accessed 4 June 2023).

[210] There have been two NZCPS, one in 1994 reflecting the light-handed regulatory approach of neoliberal governments of the time, and its replacement, the more prescriptive 2010 version. We refer to the 2010 version here. The NZCPS covers the coastal environment to provide an integrative mechanism between the marine and terrestrial regulatory planning regimes. The "coastal environment" is undefined in legislation, but an inclusive definition is included in the NZCPS of 2010.

[211] "New Zealand Coastal Policy Statement 2010" (Department of Conservation, 2010), objective 1.

[212] Ibid, objective 3.

[213] Ibid, objective 6.

obligations.[214] The policies included in the statement continue to reflect an ecosystem-based approach, including taking a precautionary approach where effects on the coastal environment are poorly understood[215]; providing for the integrated and collaborative management of natural and physical resources in the coastal environment (requiring coordinated management across administrative boundaries within the coastal marine area and on land), taking into account cumulative effects[216]; considering the effects of rights and management under other legislation beyond the RMA[217]; strategic planning for cumulative effects[218]; and protections of Indigenous biological diversity.[219] However, the NZCPS has been criticized for not fully capturing the "temporally dynamic, spatially heterogeneous, and physically and socially complex region which characterises the interface between terrestrial, marine and lacustrine processes."[220]

The leading decision on the application of the RMA in the coastal marine area is the *King Salmon* decision concerning proposed salmon farming activities in the Marlborough Sounds.[221] In that case, the Court provided direction to regional authorities about the application of section 5 of the RMA and the NZCPS, which set "environmental bottom lines" rather than objectives that can be traded off against development objectives as part of an "overall broad judgment."[222]

There is an opportunity for regional councils developing coastal plans to integrate an ecosystem-based approach that contemplates the marine ecosystem impact of activities across jurisdictional boundaries, and some regional councils have started to do so.[223] In 2019, the decision of the Court of Appeal in *Attorney General v the Trustees of the Motiti Rohe Moana Trust and others (Motiti)* confirmed the role of regional authorities to manage the effects of fishing on indigenous biodiversity in the coastal marine area under the RMA (in line with New Zealand's obligations under the Convention on Biological Diversity),[224] provided they did not do so for Fisheries Act purposes (primarily focused on allocation and sustainable use).[225] The Court accepted

[214] Ibid, objective 7.

[215] Ibid, policy 3.

[216] Ibid, policy 4.

[217] Ibid, policy 5.

[218] Ibid, policy 7.

[219] Ibid, policy 11.

[220] D. E. Hart and K. R. Bryan, "New Zealand Coastal System Boundaries, Connections and Management"(2008) 64 New Zealand Geographer 129–143 at p. 129. Referenced in Karen N. Scott, "The Evolution of Marine Spatial Planning in New Zealand: Past, Present and Possible Future" (2016) 31(4) *The International Journal of Marine and Coastal Law* 652.

[221] *Environmental Defence Sciety Inc v New Zealand King Salmon Co Ltd* [2014] NZSC 38.

[222] See Severinsen, Peart, Rollinson, et al., note 9.

[223] Auckland Council, "Ridge to Reef: Auckland's Marine Environments and Their Relationship to the Land," *Auckland Council* at: http://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/auckland-plan/environment-cultural-heritage/Pages/maunga-moana-protecting.aspx; "Integrated Management—How Does 'Integrated Management' Fit into the RPS?," *Waikato Regional Council* https://www.waikatoregion.govt.nz/council/policy-and-plans/regional-policy-statement/rpsfactsheets/integrated-management (accessed 4 June 2023). But see Stephen C. Urlich, Faye R. White, and Hamish G. Rennie, "Characterising the Regulatory Seascape in Aotearoa New Zealand: Bridging Local, Regional and National Scales for Marine Ecosystem-Based Management" (2022) 224 *Ocean & Coastal Management* 106193.

[224] *AG v Motiti Rohe Moana Trust & Ors* [2019] NZCA 532.

[225] Section 30(1)(ga) of the Resource Management Act 1991 (RMA) states that regional councils have the function of establishing, implementing, and reviewing objectives, policies, and methods for maintaining indigenous biological diversity in their regions. Section 30(2) expressly prevents the regional council from controlling the taking, allocation, or enhancement of fisheries resources for the purpose of managing fishing or fisheries resources controlled under the Fisheries Act.

that the Fisheries Act and RMA were intended to complement each other, and could work alongside each other. This decision signaled major implications for regional councils, many of which have not historically had the capacity to plan for or enforce sustainable management in the coastal marine area.[226] These concerns, and the complexity of reconciling competing interests, were highlighted in recent appeals in the far North of Aotearoa NZ concerning the Northland Regional Plan's application to the coastal marine area, in which a range of environmental groups, commercial fishing interests (including Māori), and Māori *iwi* and *hapū* disagreed over how marine areas should be used and protected.[227] Although seemingly consistent with an ecosystem-based approach, the Court in *Motiti* ordered the regional local authority to develop controversial no-take marine protections, in tension with long-standing Indigenous customary rights (see further discussion in Box 1—Motiti Island Spotlight).

A key limitation of New Zealand coastal policy from an ecosystem-based management approach is the geographic scale of its application: seaward only to the coastal marine area, and not beyond the 12 NM boundary of the territorial sea. Such arbitrary jurisdictional line drawing, which environmental effects may (and often do) cross, undermines the potential for ecosystem-based management. This issue was considered by the Supreme Court in the recent decision in *Trans-Tasman Resources v Taranaki-Whanganui Conservation Board* (*TTR*),[228] concerning an application for consent to extract and process iron within the EEZ off the South Taranaki coast. In this case, although the proposed activities were to take place in the EEZ, the principal adverse effects of the proposed mining activity would have occurred within the coastal marine area,[229] affecting an outstanding natural feature in the territorial sea (the Patea Shoals).[230]

The Court in *TTR* confirmed that, in that case, an "environmental bottom line" approach was required by the EEZ Act's purpose provision,[231] applying international obligations to favor caution and environmental protection under the United Nations Convention on the Law of the Sea. The Court also affirmed the constitutional significance of *Te Tiriti o Waitangi* in the context of marine use and development, requiring the Crown to give effect to Māori and *Tiriti* rights and interests in marine areas, especially pending the recognition of marine customary title claims (discussed in the following). The decision also emphasizes the need for an ecosystem-based approach to marine management that crosses assumed jurisdictional boundaries. The Court noted that the effects of the sediment plume would be apparent in the coastal marine area and that "there are good policy reasons for not ignoring the fact that if the proposed activity took place on the other side of an arbitrary line between two regimes, its proposed effects would be assessed differently."[232] The Court referred to the decision in *King Salmon*,[233] noting that policy 13(1)(a) of the NZCPS provided an environmental

[226] Urlich, White, and Rennie, note 213.
[227] *Minister of Conservation v Royal Forest and Bird Protection Society of New Zealand Incorporated* (NZHC, 2021) 3113.
[228] *Trans-Tasman Resources v Taranaki-Whanganui Conservation Board*, note 11.
[229] Ibid, app. 3: Diagram prepared by *iwi* parties.
[230] Ibid, app. 3.
[231] Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (NZ), section 10(1)(b).
[232] *Trans-Tasman Resources v Taranaki-Whanganui Conservation Board*, note 11, 178.
[233] *Environmental Defence Society Inc v New Zealand King Salmon Co Ltd*, note 212.

bottom line, establishing policy direction as to effects that are adverse and to be avoided or not allowed.[234]

The Supreme Court's findings in *TTR* about the impact of regulatory decisions within the EEZ on the coastal marine area is a significant win for ecosystem-based marine management approaches that emphasize connectivity within and between marine areas,[235] in response to what many see as the absurdity of drawing jurisdictional lines through ecosystems.[236] It may set a precedent for the environmental management of other boundary areas, including the highly contentious land/sea interface.[237] The decision also illustrates the tensions inherent in managing marine areas in the presence of competing sectoral uses—evident, for example, in the impacts of mining activity on other resource interests (e.g., customary uses and fishing). The decision reinforces the need for a collaborative approach to management and use within marine ecosystems, with marine management regimes that "talk to each other."[238]

Collaborative governance mechanisms are already available under the RMA that have the potential to support cross-sector and multiscale governance, including involving Māori in marine governance and planning, although these have not typically been utilized in marine environments.[239] These include joint management agreements,[240] transfers of RMA powers and functions from local authorities to Māori,[241] and *mana whakahono ā rohe agreements* (voluntary agreements between local government and Māori intended to increase Māori participation in resource management).[242] In the freshwater context, a national policy statement requires regional authorities to "uphold *Te Mana o Te Wai*," in which the health and well-being (and *mauri* or life force) of water is put ahead of economic or social interests. *Te Mana o Te Wai* is a significant advance for New Zealand environmental law, framed around human relationality with living ecosystems, and is already having an impact in terms of prioritizing environmental objectives.[243] The High Court has recently confirmed that the application of national freshwater standards extends beyond the land/sea interface to contemplate the impact of land use and freshwater management into estuaries and the broader coastal

[234] *Trans-Tasman Resources v Taranaki-Whanganui Conservation Board*, note 11, 187.

[235] Elizabeth Macpherson, Jill Banwell, Robert Makgill et al., "*Trans-Tasman Resources v Taranaki Whanganui Conservation Board* [2021] NZSC 127: A New 'High-Water Mark' for Seabed Mining" (2021) 25 *New Zealand Journal of Environmental Law* 277.

[236] Macpherson, Ulrich, Rennie et al., note 4; Rebecca V. Gladstone-Gallagher, Jason M. Tylianakis, Johanna Yletyinen et al., "Social–Ecological Connections across Land, Water, and Sea Demand a Reprioritization of Environmental Management" (2022) 10(1) *Elementa: Science of the Anthropocene* 00075; Makgill and Rennie, note 79; Makgill, Gardner-Hopkins, and Coates, note 82.

[237] Macpherson, Banwell, Makgill, et al., note 226.

[238] Macpherson, Ulrich, Rennie et al., note 4.

[239] Fisher, Makey, Macpherson et al., note 21.

[240] Resource Management Act 1991 (NZ) section 36B.

[241] Ibid, section 33. This power has only been exercised once to transfer powers to Māori—for the transfer of water monitoring functions to Tūwharetoa in 2021. See Hamish Rennie, J. Thomson, and A. Grayston, "Section 33 Transfers—Implications for Co-Management and Kaitiakitanga: Progress at Last?" in Philip Milne, Briar Gordon, James Winchester et al. (eds), *DSL Environmental Handbook* (Thomson Reuters, 2021) 1. Note that transfers of powers were anticipated under Policy 2.1.3 of the *New Zealand Coastal Policy Statement 1994*.

[242] In 2017, the RMA was amended to enable *iwi* and *hapū* to enter into voluntary "*mana whakahono ā rohe* agreements" (sections 58L-U), intended to increase Māori participation in collaborative governance of local resource management. In October 2020, the first *mana whakahono ā rohe* agreement was signed in New Zealand between Poutini Ngāi Tahu and the West Coast Regional Council.

[243] Elizabeth Macpherson, Axel Brochgrevink, Rahul Ranjan et al., "Where Ordinary Laws Fall Short: 'Riverine Rights' and Constitutionalism" (2021) *Griffith Law Review* 1.

marine area, although those standards were not designed with coastal marine environments in mind.[244] Still, arbitrary geographic and jurisdictional scales continue to limit the application of planning frameworks to certain geographic and sectoral scales.

There are limited place-based examples in Aotearoa NZ of efforts to improve cross-sector collaboration as part of marine spatial planning initiatives,[245] including for the Hauraki Gulf Marine Park, which has its own discrete legislation siting at the same level of hierarchy as the NZCPS. The Hauraki Gulf Marine Park Act 2000 seeks to integrate and establish objectives for the management of the natural, historic, and physical resources of the Hauraki Gulf, its islands, and catchments, including recognition of Māori relationships with the Gulf. It establishes the Hauraki Gulf forum to "integrate the management" and "promote the conservation and management in a sustainable manner" of the Gulf and to facilitate coordination of statutory functions in the area.[246] Alongside this, between 2013 and 2016, the Sea Change (*Tai Timu Tai Pari*) project hosted by the Auckland Council developed a nonstatutory marine spatial plan for the Hauraki Gulf (*Ahu Moana*). This plan proposed an *Ahu Moana* model for place-based co-management of certain coastal areas involving *iwi* and *hapū* and local communities, contemplating integration across regulatory frameworks for fisheries, biodiversity conservation, environmental effects management, and Māori/*Tiriti* rights.[247] However, it is unclear whether the model has been applied in practice, and it is very difficult to find neutral evaluation of the Hauraki Gulf arrangements in the form of independent research or commentary.[248] Other regional authorities, alongside increasing emphasis on integrated climate adaptation planning, are attempting to combine their planning activities across terrestrial, coastal, and marine domains in a *ki uta ki tai* (from the mountains to the sea) approach.[249]

Recent years have seen reviews of the RMA, including the *Randerson* review by a retired High Court judge, and a report on estuary management by the Parliamentary Commissioner for the Environment. Both reports highlighted the need for an ecosystem-based approach to marine management to address the impact of land use on estuaries and the broader ocean.[250] In response, the government has committed to significant reform of the RMA, and it is expected to be replaced by a new Natural and Built Environment Bill and Spatial Planning Bill in 2023. These will operate at regional scale, will include marine areas, and will be directive of general future use

[244] *Minister of Conservation v Mangawhai Harbour Restoration Society incorporated [2021] NZHC 3113* (High Court, 6 September 2021).

[245] Scott, note 210.

[246] Hauraki Gulf Marine Park Act 2000 (NZ), section 15.

[247] Auckland Council *Sea Change—Tai Timu Tai Pari: Hauraki Gulf Marine Spatial Plan* (April 2017) 49 available at: http://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/place-based-plans/Pages/sea-change-tai-timu-tai-pari.aspx (accessed 4 June 2023).

[248] See Raewyn Peart, "A 'Sea Change' in Marine Planning: The Development of New Zealand's First Marine Spatial Plan" (2017) 13(2) *Policy Quarterly* available at: https://ojs.victoria.ac.nz/pq/article/view/4658 (accessed 4 June 2023), noting that Peart was involved on the panel that developed the plan.

[249] See, e.g., "The Kotahi Plan" (2022) *Hawkes Bay Regional Council* at: https://www.hbrc.govt.nz/services/policy-and-planning/kotahi (accessed 1 September 2022).

[250] Parliamentary Commissioner for the Environment, *Managing Our Estuaries* (August 2020) available at: https://www.pce.parliament.nz/media/197063/report-managing-our-estuaries-pdf-44mb.pdf (accessed 4 June 2023). See the recent High Court decision about the application of freshwater planning policy beyond the river mouth in coastal planning *Minister of Conservation v Mangawhai Harbour Restoration Society Incorporated* [2021] NZHC 3113.

and development. The proposed legislation has been controversial, with concerns that it is being rushed through before a change of government and will impact unfairly on hard-fought *Tiriti* settlements.[251]

The Natural and Built Environment Bill includes a number of features that could enhance a transition to EBM, however, including a new overarching vision called "*Te Oranga o Te Taiao*," which can be translated as the well-being of the environment.[252] This represents a shift away from the principle of sustainable management to a more holistic concept that attempts to reflect *tikanga* Māori. However, unlike *Te Mana o Te Wai*, provided for in the *National Policy Statement for Freshwater Management*, the purpose provision does not prioritize the health of the environment (a point acknowledged by the Environment Select Committee of Parliament).[253] A clear prioritization would reduce the risk that marine health will be traded off against development interests, and would recognize that we cannot achieve social or economic objectives without a healthy, functioning ecosystem.

The bill also strengthens the *Tiriti* clause, requiring decision makers to "give effect to" its principles, and proposes the creation of "regional spatial strategies" to drive area-based resource planning and management. It adopts a "limit-setting" approach to managing environmental effects, with many commentators concerned that it will result in a "race to the bottom,"[254] although the latest draft of the bill also includes a process for setting environmental" targets." There have been concerns expressed about the rigidity of a limit-setting approach (noting that in Aotearoa NZ it can take many years for planning documents to be approved) and estimates, in the context of climate change, that any environmental limits set for the ocean will become out of date within 10–30 years.[255] In the context of climate change and cumulative effects, flexible localized risk assessments, which leverage local knowledge and *mātauranga Māori*, may offer greater potential for agile and adaptive marine management.[256]

In terms of integration across land to ocean, there is some uncertainty about the application of the legislation to marine environments. The terms "coastal environment," "coastal marine area," and "estuaries" are variously/interchangeably used, with only the coastal marine area being defined (the foreshore, seabed, and coastal waters, and the air space above the water).[257] The regional spatial approach to planning under the Spatial Planning Bill has been devised along terrestrial administrative boundaries, and (given the connectivity of the ocean) will only work effectively if there are active and well-resourced integration, coordination, and information sharing across regional

[251] Waitangi Tribunal, *The Interim Report on Māori Appointments to Regional Planning Committees—Pre-Publication Version* (No WAI 2358, 2022) 136 available at: https://forms.justice.govt.nz/search/Documents/WT/wt_DOC_188643925/Wai2358%202022W.pdf (accessed 4 June 2023).

[252] Natural and Built Environments Bill 2023 (NZ) 5 (Cl 3).

[253] Environment Committee, *Inquiry on the Natural and Built Environments Bill: Parliamentary Paper, Report of the Environment Committee* (November 2021) available at: https://selectcommittees.parliament.nz/v/2/f4758c09-709f-4484-a61e-d39baff77662 (accessed 6 June 2023).

[254] Steve Abel, "Submission on the Natural and Built Environments Bill" 27 August 2021, *Greenpeace Aotearoa* at: https://www.greenpeace.org/aotearoa/story/greenpeace-submission-on-the-natural-and-built-environments-bill (accessed 4 June 2023).

[255] Ibid.

[256] Clark, Gladstone-Gallagher, Hewitt et al., note 26; Giuseppe Forino, Jamie MacKee, and Jason von Meding, "A Proposed Assessment Index for Climate Change-Related Risk for Cultural Heritage Protection in Newcastle (Australia)" (2016) 19 *International Journal of Disaster Risk Reduction* 235.

[257] Natural and Built Environments Bill 2023 (NZ) 5 (Cl 7).

and jurisdictional boundaries and the land/sea divide. Without this integration and coordination, the new legislation could entrench inconsistencies in how we manage terrestrial and marine areas—and ultimately less beneficial outcomes for the marine environment. There remains a critical opportunity as part of the current environmental reform processes to integrate marine policy managing environmental effects across the land/sea/ocean divide, adopting an approach that recognizes marine areas as receiving environments and provides certainty and consistency between national and regional planning authorities, marine/fisheries regulators, and *iwi*/*hapū*. This would require, at the least, clarity as to how the NBA interacts with other legislation and policy affecting the ocean and meaningful collaboration and power-sharing arrangements for marine management between *Tiriti* partners, which prioritize the health of the ocean. It should also involve adaptive, flexible, intergenerational, bicultural, and localized risk assessments that leverage local knowledge and *mātauranga* Māori.

## Opportunities for EBM in Marine Biodiversity Conservation

Aotearoa NZ has multiple pieces of domestic legislation directed at managing biodiversity conservation, in line with commitments under the Convention on Biological Diversity, some focusing on protection of marine species and some on marine habitats. Aotearoa NZ's main conservation law, the Conservation Act 1987, is primarily concerned with terrestrial biodiversity, but does provide some protections and concessions regarding human interactions with marine biodiversity.[258] The Department of Conservation is the main government institution responsible for implementing conservation laws, working under a number of conservation policies and strategies.[259] It is also the lead agency for the RMA in the coastal marine area, and is required to be consulted in the preparation of regional coastal plans by local authorities.

Several New Zealand laws provide for area-based marine protections, which focus on the protection of marine habitats. These are principally marine parks and marine reserves established by legislation,[260] or policy,[261] which provide varied levels of protection depending on their purpose (predominantly scientific research purposes). They are generally located along small terrestrial edges of the coast,[262] and typically restrict certain activities (like commercial fishing and mining) in the area, but may allow other activities (like recreational fishing) to occur.[263] An attempt to create the Kermadec/Rangitāhua Ocean Sanctuary, covering the EEZ surrounding the Kermadec Islands but

[258] Marine conservation is also provided for in various ways under the Conservation Act 1987 (NZ), National Parks Act 1980 (NZ), Reserves Act 1977 (NZ), Wildlife Act 1953 (NZ)., Wild Animal Control Act 1977 (NZ), Game Animal Council Act 2013 (NZ), Marine Reserves Act 1971 (NZ), Marine Mammals Protection Act 1978 (NZ) and certain *Tiriti* settlement legislation.

[259] These include the General Policy (National) Conservation, General Policy National Parks, General Policy Conservation Management Strategies, (Regional) Management Plans, (Place specific) Conservation Management Plans, National Park Management Plans Concessions.

[260] Marine Reserves Act 1971 (NZ), Marine Mammals Protection Act 1978 (NZ), Wildlife Act 1953 (NZ), Reserves Act (NZ), and Subantarctic Islands Marine Reserves Act 2014 (NZ). There are also limited specific marine protected areas enabled under heritage legislation (Heritage New Zealand Pouhere Taonga Act 2014, Marine Protection Rules (Maritime Transport Act 1994 (NZ)), and defense areas (Defence Act 1990 (NZ)).

[261] By order of the Governor General upon recommendation by Minister for Conservation.

[262] W. Ballantine and Tim Langlois, "Marine Reserves: The Need for Systems" in *Hydrobiologia* (2008) 35.

[263] *Akaroa Marine Protection Society Inc v Minister of Conservation* [2012] New Zealand High Court NZHC 933.

excluding the existing no-take marine reserve over the 12 NM territorial sea,[264] was discontinued following a failure to consult with Māori and actively protect Māori fishing rights under *Te Tiriti*.[265] There have been localized, statutory and nonstatutory attempts to improve integrated management of marine protected areas and address land and sea interactions, involving Māori and local communities in collaborative management regimes in the Hauraki Gulf,[266] Fiordland,[267] and Kaikōura,[268] although the success of these initiatives is unclear. The Kaikōura (Te Tai o Marokura) Marine Management Act 2014 combines area-based biodiversity conservation, integrated management, and customary fisheries, providing for the appointment of "marine guardians" including representations from local *iwi*, community, industry, research, and conservation groups to provide advice to Ministers about management of the area.[269] The government has also committed to the creation of 18 protected areas in the Hauraki Gulf in 2024 as part of its *Seachange* marine spatial plan (discussed earlier). As mentioned in relation to fisheries management, it may be possible for Māori to use *rāhui* as a form of no-take area-based fishery closure on a range of legal bases, should they determine to do so.[270] However, given their temporary nature and that they are created under fisheries legislation, *rāhui* might not prevent activities outside the control of fisheries legislation, such as sand mining or dumping, unless reinforced by regulations, plans, or provisions in resource consents under the RMA.[271]

In terms of species protection, several New Zealand laws provide for prohibition and permitting arrangements affecting marine species, including the Wildlife Act 1953 and Marine Mammals Protection Act 1978, with varying levels of protection possible from outright prohibitions to regulating access.[272] It is also possible for "population management plans" to be developed under the Wildlife Act 1953, although no such plans have been developed.[273] The conservation, protection, and management of marine mammals is provided for under the Marine Mammals Protection Act, which prohibits the "take" of marine mammals without a permit and allows for the creation of area-based marine sanctuaries.[274] However, this legislation tends to focus on protecting specified species, rather than recognizing ecosystem linkages with other species.

[264] Local Government and Environment Committee, Kermadec Ocean Sanctuary Bill 2016 (NZ).

[265] Fiona McCormack, "The Kermadec Ocean Sanctuary: Terraqueous Territorialization and Māori Marine Environments" (2021) 94(1) *Pacific Affairs* 77.

[266] Hauraki Gulf Marine Park Act (NZ).

[267] Fiordland (Te Moana o Atawhenua) Marine Management Act 2005.

[268] Kaikoura Te Tai o Marokura Marine Management Act 2014.

[269] Kaikoura Te Tai o Marokura Marine Management Act 2014, section 6, section 7.

[270] Urlich, White and Rennie, note 214. This includes under section 186A of the Fisheries Act 1996.

[271] Under the RMA *rāhui* tend to be seen as a temporary measure to restore the *mauri* of something, the state of which may be manifest physically (see *Oruawharo Marae Trust v Auckland Regional Council ENC Auckland* A083/06 and *Wakatu Inc v Tasman District Council* [2012] NZEnvC 75). For an example of supportive provisions in RMA mechanisms, see *Bay of Plenty Maritime Park Inc v Northland Regional Council* [2022] NZEnvC 228, which attempts a more extended protection against overfishing than that provided by fisheries *rāhui*.

[272] See Deidre Koolen-Bourke and Raewyn Peart, *Conserving Nature: Conservation Reform Issues Paper* (Environmental Defence Society, August 2021) 124 available at: https://eds.org.nz/our-work/policy/projects/conservation-reform-project (accessed 4 June 2023) 15.

[273] Although no such plans have been developed. See ibid, 124.

[274] Marine Mammals Protection Act 1978 (NZ) section 4(1)(b) and section 22.

New Zealand's conservation legislation, much of which is over 50 years old, is often referred to as being "land-biased"[275] and "outdated."[276] In 2021 the Environmental Defence Society, an independent advocacy group, released a report on the conservation system, resulting from a research project that was partly funded by the government (alongside similar reports on the resource management system and oceans policy).[277] The report is highly critical of the "dated" conservation system. It notes that the Wildlife Act, which makes poor provision for *Te Tiriti*, does not distinguish between indigenous and introduced wildlife, and does not specifically regulate marine mammal bycatch, excluding fish from the definition of "animals" automatically protected by the Act, and therefore requiring an order to be made for the protection of specific fish species.[278] The report also finds the Marine Mammals Protection Act "wanting," pointing to a lack of clear purpose for the legislation, poor provision for *Te Tiriti*, no requirement for recovery plans for threatened species, and no protection against fisheries bycatch.[279] It also emphasizes the challenges posed by jurisdictional complexity, overlap, and inconsistency in marine biodiversity conservation, with fisheries, conservation, and planning legislation often operating at cross purposes.[280] In May 2022, the Environmental Law Initiative filed proceedings against the New Zealand government, alleging failure to properly apply bycatch prevention laws and protect marine biodiversity under the Fisheries Act 1996, the Wildlife Act 1953, and Marine Mammals Protection Act 1978, including systemic and implementation failures.[281]

Area-based protection initiatives in Aotearoa NZ have been criticized for failing to respect or support Māori customary rights and collaborative management practices, especially where marine reserves are created to the exclusion of Māori rights, access and authority.[282] However, there have been some more promising engagement processes, such as those that gave rise to the Westhaven Inlet Marine Reserve and Wildlife Reserve, the Tonga Island Marine Reserve, and Te Tapuwae o Rongokako Marine Reserve, all of which involved fisheries and conservation officials working together with Māori.

The Auditor General, in his 2019 report on marine protection initiatives, found that the establishment of marine protected areas in Aotearoa NZ is "fraught with tension." He concluded that the community-led *Te Korowai o Te Tai ō Marokura* (Kaikōura Coastal Marine Guardians) collaborative planning process that led to a marine strategy for the Kaikōura coast was more inclusive, well informed, and

[275] Robert G. Creese and Russell G. Cole, "Marine Conservation in New Zealand" (1995) 2(1) *Pacific Conservation Biology* 55.

[276] Koolen-Bourke and Peart, note 262; *Shark Experience Ltd v PauaMAC5 Inc* [2019] NZSC 111 (Supreme Court of New Zealand, 10 November 2019).

[277] Koolen-Bourke and Peart, note 262.

[278] Ibid, 111–2, under schedule 7A of the Wildlife Act

[279] Ibid, 124. There have been management plans developed for Hector's and Maui dolphins under the Fisheries Act 1996.

[280] Ibid, 125.

[281] "ELI Files Landmark Case to Protect NZ Marine Biodiversity," *Environmental Law Initiative* at: https://www.eli.org.nz/press-release-eli-files-landmark-case-to-protect-nz-marine-biodiversity (accessed 1 September 2022).

[282] Maryann S. Watson, Anne-Marie Jackson, Georgia Lloyd-Smith et al., "Comparing the Marine Protected Area Network Planning Process in British Columbia, Canada and New Zealand—Planning for Cooperative Partnerships with Indigenous Communities" (2021) 125 *Marine Policy* 104386; Giles Dodson, "Co-Governance and Local Empowerment? Conservation Partnership Frameworks and Marine Protection at Mimiwhangata, New Zealand" (2014) 27(5) *Society & Natural Resources* 521.

transparent,[283] although in terms of day-to-day decision making, the Guardians have an advisory role only and there is no obligation for decision makers to act on their advice.[284] This suggests potential for greater stakeholder buy-in to marine protection initiatives through collaborative governance arrangements,[285] although it is noticeable that successful collaborative arrangements have occurred in isolated areas far from major metropolitan centers.

As the Kermadec Sanctuary saga has demonstrated, Aotearoa NZ's conservation system has a poor legacy with Māori,[286] founded in the European tradition of wild places being locked away from people,[287] rather than "relational approaches" that view humans as being a part of and related to interdependent, living ecosystems or ancestors.[288] Drawing on comparative studies of marine biodiversity conservation in Aotearoa NZ and Canada, Stephenson et al. show how "the recognition of Indigenous interests in fisheries management is creating a distinctive "third space" of biocultural conservation that differs quite radically from the polarizing all-or-nothing regime of commercial fisheries vs marine reserves."[289] Degrees of area-based marine protection may be combined with Indigenous authority and fishing activities.[290] This is recognized in a recent press release by Te Ohu Kaimoana, which emphasizes *iwi* commitment to ensuring best possible outcomes for the Rangitāhua Ocean Sanctuary, while emphasizing the importance of Māori relationships with the ocean. The Chair explains:[291]

> Narratives that Māori rights and interests in fisheries exist in opposition to conservation efforts and sustainability could not be further from the truth. The establishment of the Rangitāhua Ocean Sanctuary provides an opportunity for the Government to adopt a mātauranga Māori approach to marine protection, conservation and sustainability

There is also increasing uncertainty, both in Aotearoa NZ and beyond, about the future ability of area-based marine protection to respond to the challenges posed by climate change, including species range and distribution shifts.[292] The international community

[283] New Zealand and Office of the Auditor-General, note 93.

[284] Kaikoura Te Tai o Marokura Marine Management Act 2014, section 7.

[285] See also Fisher, Makey, Macpherson et al., note 18.

[286] For another example of the failure of conservation policy to respect Māori rights and interests, see *Ngāi Tai Ki Tāmaki Tribal Trust v Minister of Conservation* [2018] NZSC 122 (Supreme Court of New Zealand, 14 December 2018).

[287] Koolen-Bourke and Peart, note 262, 17.

[288] Elizabeth Macpherson, "Can Western Water Law Become More 'Relational'?: A Survey of Comparative Laws Affecting Water across Australasia and the Americas" *Journal of the Royal Society of New Zealand* (forthcoming 2023); Julia Dehm, "Reconfiguring Environmental Governance in the Green Economy: Extraction, Stewardship and Natural Capital" in *Locating Nature: Making and Unmaking International Law* (Cambridge University Press, 2022).

[289] Janet Stephenson, Fikret Berkes, Nancy J. Turner et al., "Biocultural Conservation of Marine Ecosystems: Examples from New Zealand and Canada" (2014) 13 *Indian Journal of Traditional Knowledge* 257; see also Sarah-Jane Tiakiwai, Jonathan Timatanga Kilgour, and Amy Whetu, "Indigenous Perspectives of Ecosystem-Based Management and Co-Governance in the Pacific Northwest: Lessons for Aotearoa" (2017) 13(2) *AlterNative: An International Journal of Indigenous Peoples* 69.

[290] Chávez, Murphy, and Stranlund, note 156; Stefan Gelcich, Natalio Godoy, Luis Prado et al., "Add-on Conservation Benefits of Marine Territorial User Rights Fishery Policies in Central Chile" (2008) 18(1) *Ecological Applications* 273. See also "Three New Marine Parks in the Buccaneer Archipelago" 31 July 2022, *Government of Western Australia* at: https://www.mediastatements.wa.gov.au/Pages/McGowan/2022/07/Three-new-marine-parks-in-the-Buccaneer-Archipelago.aspx (accessed 1 September 2022).

[291] Holly Bennett "Iwi Commit to Ensuring Best Possible Outcome for Rangitāhua Ocean Sanctuary" 12 May 2022, *Te Ohu Kaimoana* at: https://teohu.maori.nz/iwi-commit-to-ensuring-best-possible-outcome-for-rangitahua-ocean-sanctuary (accessed 1 September 2022).

[292] Harris, note 83.

has emphasized the need for "ecosystem-based climate adaptation," meaning: "the active conservation, restoration and management of ecosystems to foster climate resilience."[293] Ecosystem-based approaches to marine protection may include efforts to conserve species by conserving habitats, and "corridor approaches" that allow species to range over time within protective corridors.[294] These habitat-focused and flexible spatial approaches are intended to support a broader ecosystem rather than just the target species.

Debates about the future of marine protection continue in Aotearoa NZ, but law reform has been difficult to secure. There have been multiple attempts to update conservation legislation, including a Marine Reserves Bill, introduced to Parliament in 2002 and stalled in 2013. In 2016, the government mooted new marine protected areas legislation, but that proposal has not progressed either.[295] The 2016 consultation document, *A New Marine Protected Areas Act*, proposed four new types of marine protection: marine reserves, species-specific sanctuaries, seabed reserves (focused on the sea floor), and recreational fishing parks.[296]

In 2020, the government released its new conservation strategy, *Te Mana o Te Taiao—Aotearoa New Zealand Biodiversity Strategy. Te Mana o Te Taiao* takes quite a different approach to previous conservation policies, drawing on *Te Ao Māori* (Māori worldview), recognizing that people are a part of nature and that natural ecosystems are living. *Te Mana o Te Taiao* also recognizes the complexity of biodiversity conservation policy and institutions in Aotearoa NZ, which "isn't working as well as it should be, as it is failing to tackle issues at the scale needed to address the ongoing and cumulative loss of indigenous biodiversity."[297] The first 2050 outcome sought under the strategy reflects ecosystem-based thinking, in that "ecosystems and species are protected, restored, resilient and connected from mountain tops to ocean depths,"[298] referred to as a *ki uta ki tai* (mountains to sea) approach.[299] The strategy includes many detailed goals relevant to the implementation of an ecosystem-based approach to managing human interactions with marine biodiversity in partnership with Māori, including to better manage policy complexity and fragmentation, cumulative effects and the impacts of climate change. These include (at 10.5.1) that "[a] framework has been established to promote ecosystem-based management, protect and enhance the health of marine and coastal ecosystems, and manage them within clear environmental

[293] United Nations Environment Programme, *Harnessing Nature to Build Climate Resilience: Scaling Up the Use of Ecosystem-Based Adaptation* (2022) note 33, 8.

[294] Charles H. Peterson, Kelly P. Franklin, and Erik E. Cordes, "Connectivity Corridor Conservation: A Conceptual Model for the Restoration of a Changing Gulf of Mexico Ecosystem" (2020) 8(1) *Elementa: Science of the Anthropocene* 016.

[295] Fisheries New Zealand, "Marine Protected Areas" 8 February 2022, *Ministry for Primary Industries | Manatū Ahu Matua* at: https://www.mpi.govt.nz/fishing-aquaculture/sustainable-fisheries/protected-areas/marine-protected-areas (accessed 1 September 2022); "New Marine Protected Areas Act" *Department of Conservation Te Papa Atawhai* at: https://www.doc.govt.nz/get-involved/have-your-say/all-consultations/2016/new-marine-protected-areas-act/ (accessed 1 September 2022).

[296] New Zealand and Ministry for the Environment, *A New Marine Protected Areas Act: Consultation Document*. (2016), https://environment.govt.nz/assets/Publications/Files/mpa-consultation-doc.pdf (accessed 4 June 2023). See Karen N. Scott, "Evolving MPA Management in New Zealand: Between Principle and Pragmatism" 47(3) (2016) *Ocean Development and International Law* 289.

[297] New Zealand and Department of Conservation, *Te Mana o Te Taiao: Aotearoa New Zealand Biodiversity Strategy 2020*.

[298] Ibid, 43.

[299] Ibid.

limits."[300] Still, *Te Mana o Te Taiao* is primarily concerned with conserving terrestrial biodiversity,[301] rather than maintaining or increasing ecosystem health and functionality (as is the case typically with marine policy).

In 2022, the Department of Conservation released *Marine and Coastal Protection and Management Principles,* which adopt both the *ki uta ki tai* approach and hierarchy of obligations reflected in *Te Mana o Te Wai*.[302] The principles prioritize the health and well-being of the coast and oceans, and reinforce the rights of Māori and the role for *mātauranga* (knowledge), and the precautionary principle, in an expressly "ecosystem approach." The principles also suggest relational thinking, where "the marine environment will be sustainably managed in an integrated way that recognizes the complex inter-relationships of land, sea, and air, and that maintains its potential for future generations, and balancing the rights and interests of customary, individual and corporate users."

Also in 2022, the government updated its "roadmap" toward conservation reform, including reforming the conservation system in line with *Te Mana o Te Taiao*, a review of the Wildlife Act, marine protected areas reform, and specific marine protections in the Hauraki Gulf.[303] However, it is unclear when or how any of this will occur; the roadmap simply states that time frames are subject to cabinet decision making. There remains an important opportunity to create co-benefits in aligning biodiversity outcomes with marine relationships and use. A recent study by Ban et al. found that both human well-being and biodiversity conservation can be improved through marine protected areas, yet negative impacts commonly co-occur with benefits.[304] If the government does decide to progress conservation reform (area-based or otherwise), connectivity and consistency across sectoral frameworks, partnership with Māori, and buy-in from stakeholders will be key.[305]

### *Opportunities for EBM While Protecting and Respecting Māori/Tiriti Rights*

A growing body of law and scholarship recognizes the potential for closer alignment of ecosystem-based approaches to marine law and policy with Indigenous law, knowledge, and science, and the importance of ensuring that legal and policy proposals do

[300] Ibid, 53.

[301] The proposed National Policy Statement for Indigenous Biodiversity includes a similar concept called "Te Rito o te Harakeke," which is a concept that refers to the need to maintain the integrity of indigenous biodiversity. It recognizes the intrinsic value and *mauri* [life essence] of indigenous biodiversity, as well as people's connections and relationships with it, alongside ecosystem-based and integrated management concepts. However, its application to the nonterrestrial coastal marine area is not clear. "Proposed National Policy Statement for Indigenous Biodiversity" (*Ministry for the Environment*, 9 June 2022) https://environment.govt.nz/acts-and-regulations/national-policy-statements/proposed-nps-indigenous-biodiversity (accessed 6 March 2023).

[302] "NZCA Marine and Coastal Protection and Management Principles (2022)" *Department of Conservation Te Papa Atawhai* at: https://www.doc.govt.nz/about-us/statutory-and-advisory-bodies/nz-conservation-authority/policies/marine-principles (accessed 1 September 2022).

[303] "Conservation law reform" (May 2022) *Department of Conservation Te Papa Atawhai* at: https://www.doc.govt.nz/globalassets/documents/about-doc/role/legislation/conservation-law-reform-roadmap.pdf (Accessed 1 September 2022).

[304] Natalie C. Ban et al., "Well-Being Outcomes of Marine Protected Areas" (2019) 2(6) *Nature Sustainability* 524.

[305] Sophal Chhun, Viktoria Kahui, Henrik Moller et al., "Advancing Marine Policy Toward Ecosystem-Based Management by Eliciting Public Preferences" (2015) 30(3) *Marine Resource Economics* 261; Carolyn J. Lundquist and Elise F. Granek, "Strategies for Successful Marine Conservation: Integrating Socioeconomic, Political, and Scientific Factors" (2005) 19(6) *Conservation Biology* 1771.

not override or undermine the knowledge, rights, interests, relationships, and authority of Indigenous peoples in the ocean.[306]

In Aotearoa NZ, Māori *iwi* and *hapū* have a "complicated patchwork" of legal rights in the ocean,[307] recognized as a range of different tenures under multiple different laws. These rights originate prior to colonization, in the law and custom (*tikanga)* of specific *iwi* and *hapū*.[308] According to experts on Māori law, this *tikanga* is underpinned by the core value of *whanaungatanga* (kinship), whereby rights and obligations with respect to the ocean and all parts of nature are based on reciprocal familiar relationships between people, groups and the environment.[309] Under *tikanga* Māori, decisions about resource management and environmental care and protection are made in consensus by tribal representatives for the benefit of present and future generations and the environment, in accordance with this principle of *whanaungatanga* and related values of *whakapapa* (genealogical connection),[310] *kaitiakitanga* (sometimes translated as guardianship or caretaking),[311] and *manaakitanga* (caring for others).[312] However, all of these values are bound by and conditional upon *rangatiratanga*, the (legal) authority held by tribes to govern and care for their *uri* (descendants) and *taiao* (environment and resources).[313]

[306] Parsons, Taylor and Crease, note 56; Maxwell, Ratana, Davies et al., note 60; Leane Makey and Shaun Awatere, "He Mahere Pāhekoheko Mō Kaipara Moana—Integrated Ecosystem-Based Management for Kaipara Harbour, Aotearoa New Zealand" (2018) 31(12) *Society & Natural Resources* 1400; Kimberley Maxwell, Shaun Awatere, Kelly Ratana et al., "He Waka Eke Noa/We Are All in the Same Boat: A Framework for Co-Governance from Aotearoa New Zealand" (2020) 121 *Marine Policy* 104213; Steve Allen, Nigel Bankes, and Øyvind Ravna, *The Rights of Indigenous Peoples in Marine Areas* (Hart Publishing, 2019); Lee Godden, "The Evolving Governance of Aboriginal Peoples and Torres Strait Islanders in Marine Areas in Australia" in Steve Allen, Nigel Bankes, and Øyvind Ravna (eds), *The Rights of Indigenous Peoples in Marine Areas* (Hart Publishing, 2019) 123; Chávez, Murphy, and Stranlund, note 156; Jose Bermudez and Dominique Herve (eds), *Justicia Ambiental, Derecho e Instrumentos de Gestión Del Espacio Marino Costero* (2013).

[307] Philip Womble, Debra Perrone, Scott Jasechko et al., "Indigenous Communities, Groundwater Opportunities" (2018) 361(6401) *Science* 453.

[308] For a more detailed discussion of Māori cosmologies see Māori Marsden, *The Woven Universe: Selected Writings of Rev. Māori Marsden*, Charles Te Ahukaramū (ed) (Estate of Rev. Māori Marsden, 2003) 16–20. Anne Salmond, "Tears of Rangi: Water, Power, and People in New Zealand" (2014) 4(3) *HAU: Journal of Ethnographic Theory* 285, 292.

[309] Joseph Williams, "Lex Aotearoa: An Heroic Attempt to Map the Māori Dimension in Modern New Zealand Law" (2013) 21 *Waikato Law Review* 1. See also Nin Tomas, "Maori Concepts of Rangatiratanga, Kaitiakitanga, The Environment, and Property Rights" in David Grinlinton and Prue Taylor (eds), *Property Rights and Sustainability* (BRILL, Martinus Nijhoff Publishers, 2011) 228.

[310] Tomas, note 300, 228.

[311] Marsden, note 299, 67. For further discussion of *kaitiakitanga* see Waitangi Tribunal, *Ko Aotearoa Tēnei: A Report into Claims Concerning New Zealand Law and Policy Affecting Māori Culture and Identity, Te Taumata Tuatahi (WAI 262 Volume 1)* (Legislation Direct, 2011) 23); Viktoria Kahui and Amanda Richards, "Lessons from Resource Management by Indigenous Māori in New Zealand: Governing the Ecosystems as a Commons: (2014) 102 *Ecological Economics* 1, 5; Jim Williams, "Resource Management and Māori Attitudes to Water in Southern New Zealand" (2006) 62(1) *New Zealand Geographer* 73, 25.

[312] See Linda Te Aho, "Corporate Governance: Balancing Tikanga Maori with Commercial Objectives" [2005] (2) *Yearbook of New Zealand Jurisprudence* 300; Linda Te Aho, "Tikanga Maori, Historical Context and the Interface with Pakeha Law in Aotearoa/New Zealand" [2007] *Yearbook of New Zealand Jurisprudence* 10.

[313] Linda Te Aho, "Tikanga Maori, Historical Context and the Interface with Pakeha Law in Aotearoa/New Zealand" [2007] 4; (2007) 10 *Yearbook of New Zealand Jurisprudence* 10; Betsan Martin, Linda Te Aho, and New Zealand Māori Council, *Ka Māpuna: Towards a Rangatiratanga Framework for the Governance of Waterways* (Response Trust, 2021) at: https://go.exlibris.link/PK2v2vJF (accessed 4 June 2023). See also *Mercury NZ Ltd v Waitangi Tribunal* [2021] NZHC 654; *Ngāti Whātua Orākei Trust v Attorney-General* [2022] NZHC 843 [28 April 2022]; David V. Williams, "Justiciability and Tikanga: Towards 'soft' Legal Constitutionalism" (2021) 29(4) *New Zealand Universities Law Review* 649.

Māori rights and obligations to the ocean can be described as inherently "relational."[314] They are built on the relatedness of people to the ocean through *rangatiratanga, whanaungatanga*, and *whakapapa*, where rights involve reciprocal responsibilities to care for people (including ancestors and present and future generations) and the environment. As an example, the relationship of *hapū* to Motiti Island is embodied in the *whakataukī* (proverb) *Ko au Motiti, ko Motiti ko au* [I am Motiti. Motiti is me] (Box 1—Motiti Island Spotlight). Relationships between peoples and environments in Māori worldview transcend the physical realm to contemplate spiritual relationships,[315] as part of interconnected and living ecosystems within entire territories,[316] or "oceanscapes."[317] This conceptual approach appears to align broadly (at least in principle) with the idea of ecosystem-based management, and both ecosystem-based approaches and *tikanga*-based approaches to marine law and policy challenge dominant Western property law regimes for the regulation of natural resources, where oceans are divided into arbitrary geographic or sectoral segments governed by disparate law and policy.[318] The oceanscape approach to Māori relationality with the environment is clear in the well-known *whakataukī* (proverb) "*Ki uta ki tai*" (from the mountains to sea),[319] although, as discussed earlier, there is still some unease about the implications of EBM for Māori.[320]

Māori relationships with oceanscapes were irrevocably affected by the colonization of Aotearoa NZ by the British Crown after the signing of *Te Tiriti o Waitangi* and the Treaty of Waitangi in 1840, and although *rangatiratanga* (political authority or sovereignty) survived colonization, the Crown has not always respected it.[321] While there are controversial differences between the Māori version and English translation of *Te Tiriti*,[322] New Zealand courts[323] and tribunals have applied its "principles" and "spirit,"[324] even where it is not expressly referenced in legislation.[325] These principles include partnership, good faith, reciprocity (equality and active engagement), mutual

[314] Whaanga, Wehi, Cox et al., note 59; Lara Bernadette Taylor, Andrew Fenemore, Te Atarangi Sayers et al., "Ngā Puna Aroha: Towards an Indigenous-Centred Freshwater Allocation Framework for Aotearoa New Zealand" [2020] *Australasian Journal of Water Resources* 1.

[315] Marsden, note 299, 44. See, e.g., Mānuka Hēnare, "Pacific Region" in John Grim, Willis Jenkins, and Mary Tucker (eds), *Routledge Handbook of Religion and Ecology* (Routledge, 2016) 129.

[316] Jacinta Ruru, "Undefined and Unresolved: Exploring Indigenous Rights in Aotearoa New Zealand's Freshwater Legal Regime" (2009) 20(5–6) *Journal of Water Law* 236, 241.

[317] Marjo K. Vierros, Autumn-Lynn Harrison, Matthew R. Sloat et al., "Considering Indigenous Peoples and Local Communities in Governance of the Global Ocean Commons" (2020) 119 *Marine Policy* 104039.

[318] Lauren Butterly and Benjamin J. Richardson, "Indigenous Peoples and Saltwater/Freshwater Governance" (2016) 8(26) *Indigenous Law Bulletin* 3, 4.

[319] Ministry for the Environment & Statistics New Zealand, *Our Fresh Water 2017* (2017), 21; Salmond, Brierley, Hikuroa et al., note 66.

[320] Rout, Reid, Bodwitch et al., note 63; Reid and Rout, note 56; Le Heron, Le Heron, Taylor et al., note 42.

[321] The status of the Treaty was accepted in *R v Symonds* [1847] NZPCC 387. However, the Treaty was later referred to as a "simple nullity" (and subsequently treated as such) in *Wi Parata v The Bishop of Wellington* [1877] 3 NZLR 72.

[322] In article 1 of the document the Māori signatories ceded either "sovereignty" or at least *kawanatanga* (government) to the Crown, and, in article 2, Māori retained "full, exclusive and undisturbed possession" or at the most "*tino rangatiratanga*" (absolute chieftainship or independence) of lands, estates, forests, fisheries and treasures and the acquired the exclusive "right of pre-emption" to purchase Māori land. Article 3 granted Māori the rights and protections of British subjects. See generally Tomas, note 300, 221.

[323] See, e.g., the landmark case of *New Zealand Māori Council v Attorney-General* [1987] 1 NZLR 641.

[324] Ibid, 662 (Cooke P).

[325] *Huakina Development Trust v Waikato Valley Authority* [1989] 3 NZLR 257.

benefit, a duty to make informed decisions (with an onus on the Crown), active protection (of rights), redress of breaches (adequate and meaningful), and the evolution of Māori law and custom over time.[326] In developing an understanding of the commitments made under *Te Tiriti*, the courts have been guided by international Indigenous rights law, particularly the *United Nations Declaration on the Rights of Indigenous Peoples*.[327] The courts increasingly acknowledge *tikanga* Māori as a source of law in New Zealand,[328] and the Māori right to *tino rangatiratanga* (highest authority or chieftainship) over their territories, as recognized in article 2 of *Te Tiriti*.

Since the 1960s, New Zealand governments have attempted to settle a range of Māori grievances stemming from the Crown's failure to uphold the legal pact it made with chiefs when it signed *Te Tiriti*. The Waitangi Tribunal was created in 1975,[329] to hear claims by Māori *iwi* and *hapū* of Crown breaches of *Te Tiriti*.[330] Since that time, the Tribunal has heard and reported on a number of inquiries into claims concerning Māori interests in the marine and coastal area, recommending certain compensation by the Crown, including the transfer of assets (money and property).[331] Many *iwi* and *hapū* have now negotiated and settled claims with the Crown,[332] including national, *iwi*-based settlements for commercial and customary fisheries and aquaculture.[333]

As discussed earlier, the 1992 settlement of Māori fisheries claims[334] under *Te Tiriti* arose in response to the Crown's decision to implement the QMS without settling Māori claims to fisheries under *Te Tiriti*.[335] After fierce legal opposition by Māori,[336] the Crown signed off on the Māori fisheries settlement, which provided for the allocation of transferable fishing quota rights to *iwi* under the QMS.[337] As full and final

[326] See Te Puni Kokiri, *He Tirohanga o Kawa Ki Te Tiriti o Waitangi = A Guide to the Principles of the Treaty of Waitangi as Expressed by the Courts and the Waitangi Tribunal* (Te Puni Kokiri, 2002).

[327] *New Zealand Māori Council v Attorney-General* (2013) 3 NZLR 31 [97] (Elias CJ, McGrath, William Young, Chambers and Glazebrook JJ). For a discussion of New Zealand's reservations to international indigenous rights, see Valmaine Toki, "Rights to Water an Indigenous Right?" (2012) 20 *Waikato Law Review: Taumauri* 107, 107.

[328] *Trans-Tasman Resources v Taranaki-Whanganui Conservation Board*, note 12*; Takamore v Clarke* [2012] NZSC 116; *Ngāti Whātua Ōrākei Trust v Attorney-General* [2018] NZSC 84, Supreme Court of New Zealand [2019] 1 NZLR 11; *Peter Hugh McGregor Ellis v R*, note 199.

[329] Claudia Orange, *An Illustrated History of the Treaty of Waitangi* (Bridget Williams Books, 2004) 144; Treaty of Waitangi Act 1975 (NZ) section 6(1)(d). The Tribunal was originally only able to hear grievances dating after 1975, but was later given jurisdiction to hear and inquire into claims from *iwi* and *hapū* dating back to 1840. Since 2008, the Tribunal is only able to hear contemporary grievances.

[330] Treaty of Waitangi Act 1975 (NZ), section 6(4A)(a). Crown redress cannot include the return of privately held property; see Jones, note 85, 6–11; Treaty of Waitangi Act 1975 (NZ).

[331] Treaty of Waitangi Act 1975 (NZ), sections 8A–E. Sections 8A to 8E state that the Tribunal only has the power to make recommendations on whether land can be returned. However, the Tribunal does have binding powers in the State-Owned Enterprises Act 1986 (NZ) and the Crown Forest Assets Act 1989 (NZ), sections 35–40, to return land.

[332] New Zealand and Office of Treaty Settlements, *Ka Tika ā Muri, Ka Tika ā Mua: He Tohutohu Whakamārama i Ngā Whakataunga Kerēme e Pā Ana Ki Te Tiriti o Waitangi Me Ngā Whakaritenga Ki Te Karauna = Healing the Past, Building a Future: A Guide to Treaty of Waitangi Claims and Negotiations with the Crown* (2015).

[333] See, e.g., Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (NZ); Central North Island Forests Land Collective Settlement Act 2008 (NZ).

[334] A similar approach is taken in the Māori aquaculture settlement, although aquaculture is not considered in any detail here.

[335] Fisheries Amendment Act 1986 (1986 No 34).

[336] *Te Runanga o Muriwhenua Inc v Attorney-General 2* NZLR 641; *Ngai Tahu Maori Trust Board v Director-General of Conservation* [1995] 3 NZLR 553 [1995] New Zealand Court of Appeal CA18/95; *Te Waka Hi Ika O Te Arawa v Treaty of Waitangi Fisheries Commission And Ors* HC AK CP395/93 (17 June 2003), 307–312 per High Court and 375–376 per Court of Appeal; *Te Runanga o Muriwhenua Inc v Attorney-General* 2 NZLR 641.

[337] Maori Fisheries Act 2004, section 3. See generally Michael De Alessi, "The Political Economy of Fishing Rights and Claims: The Maori Experience in New Zealand" (2012) 12(2–3) *Journal of Agrarian Change* 390, 390.

settlement of Māori claims to commercial fishing rights, the deal gave Māori $150 million to be used for the development and involvement of Māori in the commercial fishing industry. This included participation in the acquisition of a joint share of Sealord Products Limited (a large New Zealand fishing company), 10 percent of existing quota, and 20 percent allocation of all new quota for species brought within the QMS for commercial fisheries (including quota purchased by the government for allocation to Māori).[338] In terms of customary fisheries,[339] the settlement created bespoke Māori fisheries mechanisms, called *taiapure*,[340] and *mātaitai*[341] reserves, providing for customary fisheries management of noncommercial fishing, and *rāhui* (fishing closures),[342] alongside established customary fisheries regulations and customary fisheries officers (discussed earlier).[343] Te Ohu Kaimoana Trust was established to advance the interests of *iwi* individually and collectively,[344] primarily in the development of fisheries, fishing, and fisheries-related activities, in order to ultimately benefit the members of *iwi* and Māori generally; to further the agreements made in the Deed of Settlement; and to assist the Crown to discharge its obligations under it.[345]

While there has been criticism of the Fisheries Settlement,[346] it is generally accepted that the model has benefited Māori in terms of economic development and improved the certainty of commercial fishing rights.[347] As a result of this, and the subsequent aquaculture Treaty settlement, Māori tribes have strong property-based commercial rights in fisheries and aquaculture, and a partnership role in the design of any legal frameworks that might affect settlement assets.[348]

The common law doctrine of native or aboriginal title, known as Māori customary title,[349] is also recognized by the New Zealand courts, and derives from and exists as a matter of *tikanga*, can only be extinguished by clear and plain legislative intent, and is only alienable to the Crown (under the principle of preemption recorded in article 2 of *Te Tiriti*).[350] There remains very little Māori customary land in Aotearoa NZ,[351]

[338] Treaty of Waitangi (Fisheries Claims) Settlement Act 1992, Preamble (l). There were other forms of compensation included in the deal, set out in the preamble to the Act.

[339] Treaty of Waitangi (Fisheries Claims) Settlement Act 1992. The Settlement specified obligations to Māori to provide for both customary fisheries management practices and the traditional gathering of fish.

[340] Maori Fisheries Act 1989.

[341] Treaty of Waitangi (Fisheries Claims) Settlement Act 1992.

[342] Fisheries Act 1996 (NZ), section 186A.

[343] Fisheries (Kaimoana Customary Fishing) Regulations 1998; Fisheries (South Island Customary Fishing) Regulations 1999.

[344] Fisheries Act 1996 (NZ), s 44; Māori Fisheries Act 2004 (NZ), section 3.

[345] The Maori Fisheries Act 2004 (NZ), section 32.

[346] See, e.g., Steven Bourassa and Ann Louise Strong, "Restitution of Fishing Rights to Maori: Representation, Social Justice and Community Development" (2000) 41(2) *Asia Pacific Viewpoint* 21; Toon Van Meijl, "Changing Property Regimes in Maori Society: A Critical Assessment of the Settlement Process in New Zealand" (2012) 121(2) *Journal of Polynesian Society* 181.

[347] See generally De Alessi, note 328.

[348] This was recently emphasized by the Prime Minister's Chief Science Adviser in Office of the Prime Minister's Chief Science Advisor, note 82, 14.

[349] See Williams, note 300; Andrew Erueti, "Translating Maori Customary Title into a Common Law Title" [2003] *New Zealand Law Journal* 421(3); Jones, note 85; Paul G. McHugh, *Aboriginal Title [Electronic Resource]: The Modern Jurisprudence of Tribal Land Rights* (Oxford University Press, 2011); Paul Havemann (ed), *Indigenous Peoples' Rights: In Australia, Canada & New Zealand* (Oxford University Press, 1999).

[350] *Attorney-General v Ngati Apa* (2003) 3 NZLR 643 [13] (Elias J).

[351] See Richard Boast, *The Native Land Court 1862–1887: A Historical Study, Cases, and Commentary* (Thomson Reuters, 2013); Richard Boast, *Buying the Land, Selling the Land: Governments and Maori Land in the North Island 1865–1921* (Victoria University Press, 2008).

with most having long been purchased, converted to other tenures and on-sold,[352] or confiscated by the Crown.[353] A key exception to this is Māori customary title to the foreshore and seabed, in the area between the low water mark and mean high water springs, recognized in a landmark judicial decision in 2003.[354] The Marine and Coastal Area (Takutai Moana) Act 2011 provides for a process by which Māori can apply to the High Court for recognition of customary marine title or protected customary rights in the marine and coastal area (or obtain these in direct negotiations with the Crown).[355] In order to obtain recognition of customary marine title, an applicant must prove to the Court that it "holds the specified area in accordance with tikanga" and has "exclusively used and occupied it from 1840 to the present day without substantial interruption."[356] The process has been subject to much criticism around its limitations and the injustices it entails for Māori having to "prove," via lengthy and costly court processes,[357] the continuance of their marine relationships that have been unfairly impacted by colonization.[358] However, a number of determinations are now emanating from the courts[359] that should provide increased recognition of Māori authority in decision making about the territorial sea,[360] including through the associated recognition of "permission rights" under the RMA and Conservation Acts.[361] Customary marine title holders may be able to use their status as titleholders to impose area-based protections in the marine and coastal area as *wāhi tapu* (sacred places), including prohibitions or restrictions on access to the area.[362]

There are potential mechanisms for Māori rights or authority in marine areas to be recognized as part of regional planning processes for managing environmental effects under the RMA and EEZ Act (discussed earlier),[363] such as joint management agreements,[364] transfers of RMA powers and functions from local authorities to Māori,[365]

[352] Empowered by the Native Lands Act 1862 (NZ) and Native Lands Act 1865 (NZ).

[353] The Crown's invasion of Waikato led to the Land Wars from 1845 to 1872, and alienation following their victory was issued through the New Zealand Settlements Act 1863 (NZ).

[354] *Ngati Apa v Attorney-General* [2003] NZCA 117.

[355] Marine and Coastal Area (Takutai Moana) Act 2011; Ngā Rohe Moana o Ngā Hapū o Ngāti Porou (Recognition of Customary Marine Title) Order 2020 (NZ).

[356] Marine and Coastal Area (Takutai Moana) Act 2011, section 58.

[357] Meriana Johnsen, "New Strategy to Settle Marine and Coastal Claims 'within 30 Years'" 11 June 2021, *Stuff* at: https://www.stuff.co.nz/pou-tiaki/300331449/new-strategy-to-settle-marine-and-coastal-claims-within-30-years (accessed 1 September 2022).

[358] These injustices were recognized by the Waitangi Tribunal in Waitangi Tribunal, The Marine and Coastal Area (Takutai Moana) Act 2011 Inquiry Stage 1 Report: Pre-Publication Version (No WAI2660, 2020).

[359] *Whakatohea Kotahitanga Waka v Te Kahui Takutai Moana O Nga Whanui Me Nga Hapu* [2022] NZCA 7; *Re Edwards (No 2)* [2021] NZHC 1025; *Re Ngāti Pāhauwera* [2021] NZHC 3599; *Re Reeder & Ors (Ngā Pōtiki Stage 1–Te Tāhuna o Rangataua)* [2021] NZHC 2726.

[360] Urlich, White, and Rennie, note 214.

[361] Marine and Coastal Area (Takutai Moana) Act 2011, section 62(1)(b) and (c).

[362] Ibid, sections 78–81; Urlich, White and Rennie, note 214.

[363] Resource Management Act 1991, Subpart 2—Mana Whakahono a Rohe: Iwi participation arrangements, section 33 Transfer powers, section 34 Delegation of functions, and section 36B Power to make joint management agreements and, variously, recognizing and providing for, taking into account, or having regard to planning documents prepared by customary titleholders, *iwi*, or bespoke Māori fisheries regulations when local authorities make policy statements or plans under the RMA (e.g., Resource Management Act 1991 (NZ), section 91), Fisheries (South Island Customary Fishing) Regulations 1999, section 16, or statutory acknowledgments of *iwi* relationships to particular places. See, for instance, Ngāti Awa Claims Settlement Act 2005, Preamble.

[364] Resource Management Act 1991 (NZ), section 36B.

[365] Ibid, section 33. This power has only been exercised once to transfer powers to Māori—for the transfer of water monitoring functions to Tūwharetoa in 2021. See Rennie, Thomson, and Grayston, note 232.

and *mana whakahono ā rohe* (participation agreements),[366] although these have not been well implemented historically and are yet to be used for marine environments or resources.[367] As also discussed earlier, there are limited place-based examples of efforts to improve cross-sector collaboration as part of statutory and nonstatutory marine spatial planning initiatives[368] that involve Māori to varying degrees, although these have also been criticized for not achieving the standard of partnership required by *Te Tiriti*.[369] All of these mechanisms provide unrealized opportunities to partner in governance of the ocean in accordance with Māori worldview, provided that the Crown is willing to share power with *Tiriti* partners.[370] The implementation of concepts inspired by *tikanga* Māori in environmental law frameworks, including *Te Mana o Te Wai* and *Te Oranga o Te Taiao*, discussed earlier, might provide new opportunities for Māori.[371]

As discussed earlier, although Indigenous cosmologies are often equated with preservationist environmental or conservation approaches,[372] Western conservation laws and institutions have sometimes been used in Aotearoa NZ (and beyond) to override and undermine Māori rights and interests in the ocean,[373] including long-fought *Tiriti* settlement assets. These approaches render Indigenous peoples invisible in place, and ignore the reciprocal relationship of Māori within marine ecosystems, at once dependent on and caring for nature.[374] They may also produce intractable standoffs between human use and environmental protection—whereby nature is cordoned off from extractive users as part of scientific or scenic "reserves"—while protection may not be provided for in high-impact areas where it is most needed. In the recent Supreme Court *Trans-Tasman Resources* decision, by contrast, Williams J used the word "relational" when explaining *iwi* interests in the case[375]:

> I would merely add that this question must not only be viewed through a Pākehā lens …. As the Court of Appeal rightly pointed out, the interests of iwi with mana moana in the consent area are the longest-standing human-related interests in that place. As with all interests, they reflect the relevant values of the interest-holder. Those values—mana, whanaungatanga and kaitiakitanga—are relational.

As is clear, the scope and nature of legal recognition of Māori rights and authority in marine places are complex, and Māori relationships with the ocean are diverse and varied, casting doubt on Western thinking that dichotomizes resource use and protection.[376]

[366] In 2017, the RMA was amended to enable *iwi* and *hapū* to enter into voluntary "mana whakahono ā rohe agreements" (sections 58L–U), intended to increase Māori participation in collaborative governance of local resource management. In October 2020, the first *mana whakahono ā rohe* agreement was signed in New Zealand between Poutini Ngāi Tahu and the West Coast Regional Council.

[367] See, e.g., *Sustainable Matatā v Bay of Plenty Regional Council* [2015] NZEnvC 90.

[368] See, e.g., Auckland Council, note 238.

[369] Parsons, Taylor and Crease, note 56.

[370] For a criticism of this approach, see Lara B. Taylor, "Stop Drinking the Waipiro! A Critique of the Government's 'Why' behind Te Mana o Te Wai" (2022) 78(1) *New Zealand Geographer* 87.

[371] Fisher, Makey, Macpherson et al., note 18.

[372] Phil O'B. Lyver and Jason M. Tylianakis, "Indigenous Peoples: Conservation Paradox" (2017) 357(6347) *Science* 142.2–143; McCormack, note 257.

[373] Julia Dehm, note 279.

[374] Linda Te Aho, "Te Mana o Te Wai: An Indigenous Perspective on Rivers and River Management" (2019) 35(10) *River Research Application* 1615; Taylor, Fenemore, Sayers et al., note 287; Parsons, Fisher, and Crease, note 62.

[375] *Trans-Tasman Resources v Taranaki-Whanganui Conservation Board*, note 11, [109].

[376] Julia Dehm, note 263.

Understanding this requires acknowledging that reclaiming Māori fishing rights has been hard-fought, and EBM should not be imposed as "governance by stealth" in a way that complicates existing rights and governance and could undermine those gains.[377]

A relational approach to EBM,[378] which recognizes people as related to and part of holistic, interdependent, living ecosystems,[379] may provide an opportunity for alignment to Māori worldview, provided this is done in partnership with Māori.[380] Taylor and Hikuroa have applied the "three spheres of influence"[381] as a potential model for understanding how the Crown can relate to Māori in the governance and use of marine places.[382] It is an intrinsically relational model, where the relationship is partnership, hopefully with all parts working together toward a common vision.[383]

Makey and Awatere's study of integrated ecosystem-based management in the Kaipara harbor provides a useful example of interagency, place-based management of a harbor and catchment in partnership with *iwi/hapū* aligned with long-term biodiversity, fisheries, *mauri* (life force), climate change, social economies, and integration objectives.[384] These include: area-based protections for *wāhi tapu* (sacred places) to protect and conserve important historical sites; traditional fisheries management processes such as *rāhui* (temporary closures) to protect, regenerate, and manage significant fisheries such as shellfish; and the development of monitoring programs that use indigenous concepts of value such as *mauri*. They emphasize the procedural and substantive elements of partnership when they explain[385]:

> We found that the "doing" process of identifying gaps at the initial stages of the IKHMG partnership not only clearly articulated the diverse knowledge requirements for a healthy and productive Kaipara but portrayed a (w)holistic approach to knowledge coproduction that demanded Māori knowledge and societal values. At long last, the local context of the Kaipara harbour was heightened and the constitution of knowledge production was situated whereby the effects of colonization were written alongside EBM; the ecosystems were defined alongside Māori environmental and spiritual domains; and, jurisdictional boundaries alongside tribal boundaries.

As constitutional discussions continue within Māori communities and with the Crown,[386] it will be essential that partnership exists at all levels of law, including Māori input on a range of ocean concerns beyond just commercial fisheries. In this context, the

[377] Reid and Rout, note 52.

[378] Macpherson, Ulrich, Rennie et al., note 4.

[379] Maxwell, Ratana, Davies et al., note 601; Salmond, Brierley, Hikuroa et al., note 66.

[380] Dan Hikuroa, Julia Clark, Anthony Olsen et al., "Severed at the Head: Towards Revitalising the Mauri of Te Awa o Te Atua" (2018) 52(4) *New Zealand Journal of Marine and Freshwater Research* 643; Fisher, Makey, Macpherson et al., note 18.

[381] The Independent Working Group on Constitutional Transformation, note 13; Charters, Kingdon-Bebb, Olsen et al., note 13.

[382] L. Taylor and D. Hikuroa D, *Kāwanatanga 'Future Search' Workshop Summary Report by the Sustainable Seas National Science Challenge Project 4.3: Enabling Kaitiakitanga & Ecosystem- Based Management* (March 2022) available at: https://www.sustainableseaschallenge.co.nz/tools-and-resources/k%C4%81wanatanga-future-search-workshop-summary-report (accessed 4 June 2023).

[383] See also Maxwell, Ratana, Davies et al., note 60.

[384] Makey and Awatere, note 297.

[385] Ibid, 9.

[386] Natalie Coates "Future Contexts for Treaty Interpretation" in *Indigenous Peoples and the State: International Perspectives on the Treaty of Waitangi* (Routledge, First, 2018).

Māori voice and leadership in the vision for the ocean and supporting arrangements and institutions is essential.

## Ecosystem-Based Marine Law and Policy for the Health of Ocean Ecosystems

In this article we have identified opportunities within four key areas of Aotearoa NZ marine law and policy to align law and its implementation more closely to the reality of the ocean as a living, related ecosystem. A more "holistic,"[387] relational, ecosystem-based approach to managing the ocean would acknowledge the interdependencies between related living and nonliving marine ecosystem components, including people.[388] It would move away from fragmented, siloed, or single-sector approaches to marine management, to manage relationships between ecosystem components and the cumulative impacts of multiple activities across sectors and scales in a way that is flexible and adaptive to climate change.[389]

Bringing all areas of law and policy affecting human relationships with the ocean together, as part of a coordinated ecosystem-based approach, is a challenge because of the multitude of scales, sectors, and interest groups involved. As was pointed out in the introduction, polarized views and locked-in debates have long dominated marine policy discussions, compromising the potential for shared goals.[390] These polarized approaches position differences, diversity, and uncertainty as problems to be solved, rather than as natural components of social–ecological systems. We consider, in contrast, that it is crucial to capitalize on shared interests in the health and resilience of marine ecosystems for future generations (across government, industry, and Māori and communities).[391] This means shifting narratives away from protection/use dichotomies, and instead positioning people *within*, *as*, and *of* related marine ecosystems.[392] It means putting the ocean at the heart of every marine policy decision. A focus on relatedness and relationships among and between peoples and marine ecosystems is critical to ensuring strong institutions and processes that have the tools and mandates to make decisions grounded in ecosystem realities,[393] and has strong resonance in Aotearoa NZ's bicultural, constitutional context.[394]

In Aotearoa NZ, partnership between the Crown and Māori on marine issues will require a new "cross-cultural approach" that recognizes Indigenous worldviews, tools, and approaches equitably with EBM.[395] This article builds on the study of Macpherson et al., discussed earlier, in which the authors suggested that a relational approach to ecosystem-based marine management could be best supported by a combination of

[387] Hewitt, note 20, 10–13.
[388] Gelcich, Reyes-Mendy, Arriagada et al., note 25, 40.
[389] Clark, Gladstone-Gallagher, Hewitt et al., note 26; Thrush, Hewitt, Gladstone-Gallagher et al., note 1.
[390] Norberg, Blenckner, Cornell et al., note 14.
[391] Ibid.
[392] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, note 32.
[393] Macpherson, Ulrich, Rennie et al., note 4; Salmond, Brierley, Hikuroa et al., note 62.
[394] The Independent Working Group on Constitutional Transformation, note 13; Charters, Kingdon-Bebb, Olsen et al., note 13.
[395] Maxwell, Ratana, Davies et al., note 60; see also Parsons, Fisher, and Crease, note 61, 477.

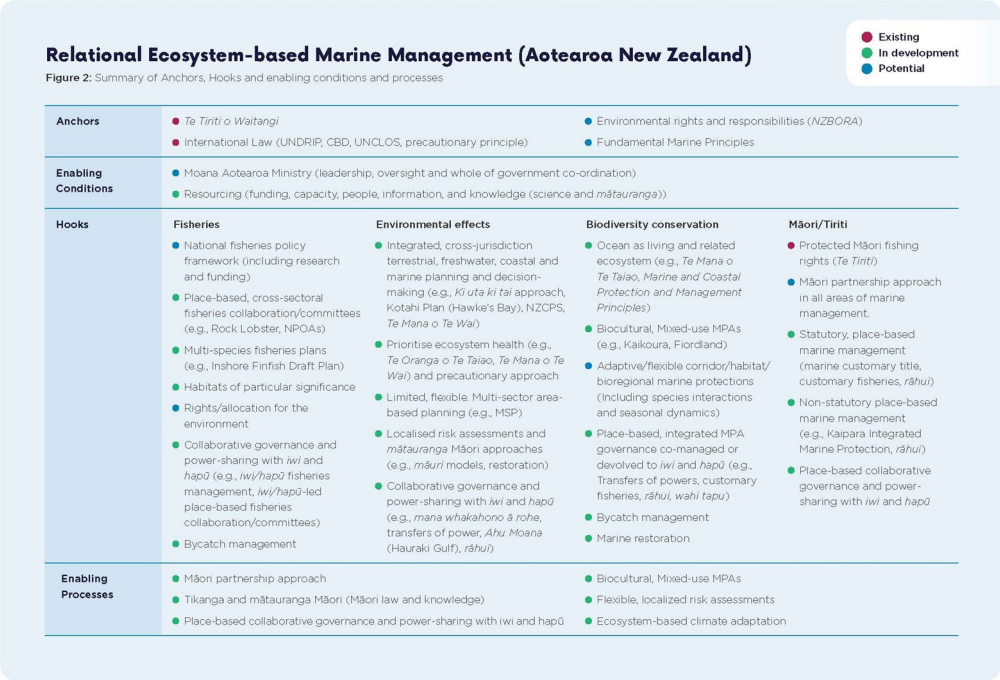


**Figure 2.** Summary of anchors, hooks, and enabling conditions and processes—red (existing), green (in development), blue (potential).

detailed rule and institution-making (hooks) and high-level norm-setting (anchors).[396] Here, arising out of our engagement with major partners and stakeholders involved in marine law and policy in Aotearoa NZ, we reverse the order to consider the overarching anchors first, to guide the implementation of rules and tools (hooks). We complement the model with the concept of "enabling conditions" necessary to support EBM anchors and hooks (in terms of institutions and resourcing), and "enabling processes," being hooks that cut across all four areas of policy implementation. In this section, we outline some opportunities for anchors and hooks, and enabling conditions and processes to support EBM implementation in Aotearoa NZ (which we have attempted to summarize in Figure 2).

## *Anchors*

It is often asserted that Aotearoa NZ needs some sort of overarching oceans vision, strategy, or policy.[397] Inconsistencies between management regimes operating in Aotearoa NZ's marine and coastal jurisdictions have been highlighted by the courts[398] and

[396] Macpherson, Ulrich, Rennie et al., note 4.

[397] Scott, note 93; Severinsen, Peart, Rollinson et al., note 9; Office of the Prime Minister's Chief Science Advisor, note 78.

[398] *Trans-Tasman Resources v Taranaki-Whanganui Conservation Board*, note 12; *AG v Motiti Rohe Moana Trust & Ors*, note 215.

numerous policy reports.[399] The Environmental Defence Society suggests that resolving the issue of marine fragmentation may require an overarching instrument, capable of reaching across multiple frameworks and taking a strategic, coherent, and coordinated approach for oceans management across a country's entire oceans realm to achieve a common vision.[400]

There are a number of ways that law could be used to develop an overarching strategy or policy for oceans management. These could include a new "Oceans Act," strategy or policy, prospective planning legislation (the Natural and Built Environments or Spatial Planning Bills), or even environmental rights protections in the New Zealand Bill of Rights Act 1990.[401] This oceans policy would be the "normative glue" that holds the whole system together, and could become a "constitution for the oceans."[402] As such, there is potential for the oceans policy to have some sort of normative hierarchy, something increasingly advocated by proponents of environmental constitutionalism.[403] There is also an opportunity to align this strategy to international laws that support an ecosystem-based approach, in particular the Convention on Biological Diversity and United Nations Declaration on the Rights of Indigenous Peoples, and international law around information requirements and the precautionary principle, as well as the United Nations Convention on the Law of the Sea.[404]

There is a clear opportunity for the Crown to co-develop an approach to oceans law and policy in Aotearoa NZ that is more relational and reflective of the living nature of ecosystems, and that places ocean health at the center of decision making. This must be done in partnership with Māori from the outset, before policy outcomes are entrenched, in a way that respects Māori authority, rights, interests, and knowledge protected by *Te Tiriti*. For example, any high-level strategy would need to acknowledge the protected nature of Māori rights and interests in the ocean, including for commercial fishing, but also broader accounting for leadership by Māori, *iwi*, and *hapū* in matters of ocean governance. Policymakers should avoid sharp dichotomies between environmental use and protection and seek new opportunities for multi-use, area-based projections. Stephenson et al. emphasize the need for "biocultural approaches" to marine management, which "simultaneously support cultural renewal and biocultural diversity," "bridging the gap" between biodiversity conservation typically focused on single species, on the one hand, and local and Indigenous values of biodiversity for livelihoods on the other.[405]

We argue here that while some sort of oceans anchor could do well as a statement of high-level, cross-sectoral policy intention for oceans management in Aotearoa NZ, it could only be legitimate if developed in partnership with Māori and not perceived as a Western-imposed construct. In this regard, the Crown could take inspiration and careful lesson from the experience of developing *Te Mana o Te Wai* and *Te Oranga*

[399] Parliamentary Commissioner for the Environment, note 78; Office of the Prime Minister's Chief Science Advisor, note 78.

[400] Severinsen, Peart, Rollinson et al., note 9, 123–124.

[401] Ibid.

[402] Ibid, 125.

[403] See Louis J. Kotzé, "Rethinking Global Environmental Law and Governance in the Anthropocene"' (2014) 32(2) *Journal of Energy & Natural Resources Law* 121; Macpherson, Brochgrevink, Ranjan et al., note 234.

[404] Makgill, Gardner-Hopkins, and Coates, note 79.

[405] Stephenson, Berkes, Turner et al., note 280.

*o Te Taiao* in the planning context, where attempts were made to reflect a relational approach to nature approximate to *Te Ao Māori*. These concepts encourage more holistic human relationships with the ocean, evident in the increasingly integrated approach to the freshwater/marine interface in managing environmental effects, acknowledging that concerns remain about the Crown-dominated process of policy development.[406]

For these reasons, we resist the urge to attempt to particularize the content of "Fundamental Marine Principles" in Figure 2, including them alongside other relevant constitutional and international law anchors. Our engagement with a range of marine rightsholders and stakeholders across Māori, industry, central and local government, and community groups reinforced the shared interest in supporting healthy and resilient marine ecosystems. The intensifying challenges posed to species, habitats, and communities by climate change give increasing urgency to the need for cross-sectorial and multiscale collaboration in framing the Fundamental Marine Principles,[407] provided always that this is done in a *Tiriti*-compliant manner.

## Enabling Conditions

As also already discussed, strong processes and institutions with effective compliance mechanisms are essential to ensure that legal protections and rules are properly implemented and enforced. There are ongoing debates about the appropriate scale of marine policy implementation, specifically, whether regional or national governments are best placed to implement ocean policy and regulation,[408] although the international literature emphasizes the importance of policy coherence across all scales.[409] We consider that EBM implementation can (and should) take place across a range of temporal, geographic, and jurisdictional scales, as guided by a strong anchor for an ecosystem-based approach. But for this to happen, whole-of-government leadership and coordination is needed, across sectoral silos. Such an integrated approach is very difficult, our study suggests, where officers have reporting lines and obligations only within a sectoral line department (as is currently the case with the Oceans Secretariat).

The Environmental Defence Society has mooted the creation of an "oceans agency" to support cross-sectoral collaboration and hold the government to account for implementing the law. In 2021 Scott went further and argued that Aotearoa NZ needed a Ministry for the ocean.[410] We join the call for a Ministry for the ocean to match the Ministerial portfolio for the ocean, reflecting the complexity of marine management and departing from the terrestrial bias of our existing laws and institutions. A dedicated Ministry would ensure a coherent, whole-of-government approach to leadership, oversight, coordination, and alignment of marine policy consistent with the *Tiriti* partnership (as guided by anchors), for which we use the placeholder title of "Moana

[406] Taylor, note 361.

[407] Ministry for the Environment, *Urutau, Ka Taurikura: Kia Tū Pakari a Aotearoa i Ngā Huringa Āhurarangi = Adapt and Thrive: Building a Climate-Resilient New Zealand: Aotearoa New Zealand's First National Adaption Plan* (Ministry for the Environment Manatū Mō Te Taiao, 2022) available at: https://environment.govt.nz/assets/publications/climate-change/MFE-AoG-20664-GF-National-Adaptation-Plan-2022-WEB.pdf (accessed 4 June 2023).

[408] Urlich, White, and Rennie, note 214.

[409] Ostrom, note 45.

[410] Scott, note 93.

Aotearoa Ministry" (Figure 2). The work of the Moana Aotearoa Ministry would be complimented (and checked) by other accountability entities at "arm's length" from political influence, such as the Parliamentary Commissioner for the Environment.

As we have emphasized, any form of marine policy implementation must be supported by resourcing if it is to be effective.[411] EBM is best supported by knowledge, but government research funding has consistently prioritized data collection in the more easily sampled terrestrial space. Research has confirmed that perceptions of risk have a strong influence over environmental decision making, and that risk perceptions are exacerbated by ambiguity or gaps in science knowledge.[412] Another recent report by the Environmental Defence Society on science funding in Aotearoa NZ concluded that "Gaps and defects in the current science advisory ecosystem collectively point to a need for structural reform, in order to build a more cohesive, resourced and strategic science advisory system to support the plethora of environmental related policy currently under development." They recommended the establishment of a "national, independent science advisory body" to work on environmental policy, as well as a *mātauranga* Māori commission for Māori knowledge.[413] It is important to remember, as part of any institutional design process, that science itself is not "neutral," with the ability for knowledge production to be undermined by political influence or industry capture.[414] Resourcing, moreover, is more than just money, and involves its own complex system of capacity, people, information, knowledge (science and *mātauranga*), and prioritization (Figure 2).

Effective implementation of relational EBM will require the government to commit the necessary resourcing to support ongoing knowledge production (Western science and *mātauranga* Māori), collaboration, reflection, and reform. Dedicated and ongoing resourcing could help ensure that the government's roadmap toward EBM is achievable, sustainable, and insulated from political interference and instability.

### Hooks

Sectorial fragmentation is characteristic of law and policy affecting marine areas and resources,[415] and it is important that reform proposals do not exacerbate it. Although there will continue to be multiple sectoral laws and policies affecting marine ecosystems implemented by subject-matter experts within implementing line departments, efforts should be made to ensure their core vision and objectives are consistent, and that they are brought together through processes and institutions that allow the different sectors and scales to "speak to each other" effectively. This is no easy feat, because it means coordinating oceans policy and practice across fisheries allocation, environmental effects management, biodiversity conservation, and Māori/*Tiriti* rights, implemented at local, regional, national, and international scales, by Māori, Crown, local government, and private entities. As we have stressed,

411 Urlich, White, and Rennie, note 214.

412 Richard Le Heron, Carolyn J. Lundquist, June Logie et al., "A Socio-Ecological Appraisal of Perceived Risks Associated with Mangrove (Mānawa) Management in Aotearoa New Zealand" (2022) 56(3) *New Zealand Journal of Marine and Freshwater Research* 447.

413 Diedre Koolen-Bourke and Raewyn Peart, *Science for Policy: The Role of Science in the National Policy Statement for Freshwater Management* (Environmental Defence Society, 2022) 196 available at: https://eds.org.nz/wp-content/uploads/2022/08/Freshwater-Policy-Report_FINAL_CorrectedPostLaw-Suit.pdf (acccessed 4 June 2023).

414 Erin O'Donnell and Rebecca Nelson, "Shield Science for Robust Decisions" (2020) 3(9) *Nature Sustainability* 675.

415 Scott, note 95.

relationships are key to bringing interested parties together in relational processes and through institutions, in a way that respects Indigenous and customary rights.[416]

As we have highlighted here, there have already been ad hoc attempts to integrate marine management across sectors and scales in Aotearoa NZ, and some of these have been more successful than others. In *The Breaking Wave*, the Environmental Defence Society detailed a range of different options for oceans law reform, including an expanded or combined RMA/*EEZ Act* or an "integrative" Oceans Act to combine planning legislation with biodiversity conservation legislation and to guide marine spatial planning initiatives.[417] They appear to assume that the best way to enable integration is through marine spatial planning, such as devised for the Hauraki Gulf. The New Zealand government recently announced a cross-sectoral package of marine conservation and fisheries management actions to restore a healthy Hauraki Gulf that covers area-based fisheries plans for customary, commercial, and recreational fisheries; active habitat restoration; aquaculture; marine biosecurity; marine protection; protected species; local marine management by Māori *mana whenua* and local communities (called *Ahu Moana*); and a cross-agency implementation group.[418]

However, while marine spatial planning is one potential tool to support an EBM approach, it is not a panacea for the challenges facing the ocean and communities and has at times reproduced troubling aspects of Western conservationist approaches. Marine spatial planning is primarily concerned with the management of activities or development within a specific geographic space or zone,[419] while ecosystem-based management is more concerned with the ongoing relationships between ecosystem components (including people) irrespective of spatial, temporal, and jurisdictional scales.[420] Defining areas by ruling lines on the map is inherently at odds with a *ki uta ki tai* approach, where activities in one area can have multidirectional, cumulative, and often unexpected impacts on species and habitats across multiple places and generations.[421] Marine spatial planning (and the tools used to achieve it, such as zonation) can be useful but is data-intensive and costly,[422] and still requires development of cumulative effects and social–ecological risk assessments and *mātauranga* based models (like the *mauri* index). Especially in the context of intensifying uncertainty about marine environments owing to climate change, policymakers should avoid placing "all their eggs" in the spatial "basket."

Our review of opportunities to support an ecosystem-approach in Aotearoa NZ's legal framework highlights the importance of:

[416] Macpherson, Ulrich, Rennie et al., note 4.

[417] Severinsen, Peart, Rollinson et al., note 9, 147.

[418] Fisheries New Zealand "Revitalising the Hauraki Gulf: Government Action on the Sea Change Plan" *Ministry for Primary Industries | Manatū Ahu Matua* at: https://www.mpi.govt.nz/fishing-aquaculture/sustainable-fisheries/strengthening-fisheries-management/revitalising-the-hauraki-gulf-government-action-on-the-sea-change-plan (accessed 1 September 2022).

[419] Scott, note 210. See also Charles Ehler and Fanny Douvere, *Marine Spatial Planning: A Step-by-Step Approach toward Ecosystem-Based Management—UNESCO Digital Library* (No. 53, ICAM Dossier No. 6, Intergovernmental Oceanographic Commission and Man and the Biosphere Programme, IOC Manual and Guides, 2009) available at: https://unesdoc.unesco.org/ark:/48223/pf0000186559 (accessed 4 June 2023).

[420] Hewitt, note 20.

[421] Hamish G. Rennie, "Marine (Aquaculture) Space Allocation: Assessing Transitional Challenges to Local Economies in New Zealand" (2010) 25(3) *Local Economy* 190.

[422] Hamish G. Rennie, Roger White, and Lars Brabyn, "Developing a Conceptual Model of Marine Farming in New Zealand" (2009) 33(1) *Marine Policy* 106.

- Partnership and power sharing with Māori, *iwi*, and *hapū* (as appropriate)—across all sectors and scales and in policy design, content, and implementation.
- Integrated and holistic planning for managing environmental affects in the ocean that reflects the multidirectional and multifaceted operation of living marine ecosystems and related communities across temporal, geographic, and jurisdictional scales (rather than arbitrary jurisdictional, temporal, and geographic boundaries).
- Place-based collaboration in marine governance rather than just top-down policy and legislation.
- Biocultural and flexible marine protection regimes that center Māori authority and allow for balanced and reciprocal protection and use of marine areas.
- Integrated, ecosystem-based and collaborative oceans planning that integrates and mediates multiple values and perspectives.

In Figure 2 we highlight, in no particular order, key "hooks" in Aotearoa NZ's legal and policy framework to support an ecosystem-based approach to marine management discussed in this article, which are a combination of existing (red), proposed (green), or potential (blue) tools.

In fisheries management, there are opportunities to better utilize Fisheries Act mechanisms, including through cross-sectoral, collaborative, and strategic planning across the land/sea divide, multispecies fisheries plans, and species and habitat protections (much of which is already being developed by government, industry, and communities). We consider that this work needs coherent policy guidance in the form of a national fisheries policy framework, which should provide the basis for evidence-based decision making about fisheries species and habitats as part of a living and integrated ecosystem.

In managing environmental effects, responsible authorities should adopt a *ki uta ki tai* (mountains to sea) approach that structures marine planning and decision making around the realities and relationships of marine ecosystems rather than arbitrary scale boundaries. There is an important opportunity to build this into RMA/EEZ Act reform, as consistent with evolving domestic jurisprudence. Managing environmental effects should be provided for through ecosystem values that recognize the living and interconnected nature of marine ecosystems and prioritizing the health of marine ecosystems via a precautionary approach (potentially using the principle of *Te Oranga o Te Taiao*). Spatial planning initiatives may be one tool in the EBM toolbox but should not be applied in a way that is fixed or arbitrary, given the fluidity of ecosystem functioning and the inevitable spatial distribution challenges for species and habitats presented by climate change. There are multiple existing and potential tools for collaborative governance and power sharing in the existing and proposed legislation with Māori across scales, including co-management arrangements and transfers of power.

In biodiversity conservation, *Te Mana o Te Taiao—The New Zealand Biodiversity Strategy* provides a good starting point for a relational approach, but the fragmentation and inconsistency of conservation legislation need addressing. There are critical opportunities in the current conservation reform project to modernize biodiversity conservation mechanisms in a way that reflects the connectedness of species, people and place. There is potential for area-based marine protection initiatives to support co-benefits with local and cultural livelihoods, and place-based and integrated or

biocultural conservation initiatives led by *iwi* and *hapū*, such as marine guardianship approaches or customary prohibitions.

Māori have a strong constitutional basis for their rights and interests in marine law and policy, and any marine reform must be implemented in a way that enhances rather than detracts from *Tiriti* settlements. Māori are an ocean people (Box 1), and there are multiple, exciting opportunities for Māori authority and partnership to drive the legal and policy treatment of marine–human relationships. At the place-based level these include a patchwork of legal mechanisms (including marine customary title, customary fisheries, customary prohibitions, and nonstatutory place-based integrated planning), some of which are better accommodated than others in current policy and practice. By recognizing and supporting the jurisdiction of Māori as marine rightsholders and managers (through power-sharing and collaborative governance), Aotearoa NZ could lead the world in implementing a relational approach that recognizes the connectedness of ecosystem components.

### *Enabling Processes*

Figure 2 also lists "Enabling processes," which are cross-cutting rules and mechanisms that apply across all four areas of marine policy. All of these—*tikanga* and *mātauranga* (Māori law and knowledge); Māori partnership approach in all areas of marine management; place-based collaborative governance and power-sharing with *iwi* and *hapū*; biocultural and mixed-use MPAs; flexible, localized risk assessments; and ecosystem-based climate adaptation—are emerging opportunities to align policy delivery across sectors and scales. They signal potential for the design and implementation of further relational processes and institutions.

In combination, and under the guidance of an "anchor" to chart a collective voyage to EBM, these hooks and enabling processes suggest exciting new ways to better reflect and support the health and resilience of living marine ecosystems.

## Conclusion

In this article, we highlight critical opportunities for Aotearoa NZ's marine reform project to better reflect ecosystem thinking, where the ocean is viewed as a living, related system to which people have reciprocal relationships. There are key, time-sensitive opportunities across fisheries allocation and management, biodiversity conservation, managing environmental effects, and Māori/*Tiriti* rights to better align law and policy to the reality and functioning of marine ecosystems, in a way that meaningfully intersects with the others. Aligning law and policy across sectors and scales will be especially important as the New Zealand government moves toward releasing its long-awaited climate adaptation legislation.[423] In many situations, there are promising reform initiatives underway, although these tend to be ad hoc. We argue that Aotearoa NZ needs an overarching EBM anchor, which sets a vision for the health of ocean ecosystems

[423] Raewyn Peart and others, "Aotearoa New Zealand's Climate Change Adaptation Act: Building a Durable Future: Principles and Funding for Managed Retreat" (Environmental Defence Society 2023) Working Paper 1, https://eds.org.nz/wp-content/uploads/2022/11/Climate-Adaptation-Working-Paper-1_FINAL.pdf (accessed 4 June 2023).

in partnership with Māori, to apply across sectors and scales as they affect marine places. Our findings have broad relevance for transnational marine law and policy debates, as a range of countries attempt to reform marine laws and policies in a way that represents ecosystem functioning and supports the health and resilience of marine ecosystems and related people.

A transition toward marine law and policy that reflects the realities of ocean ecosystems and related communities will require buy-in and support from a range of partners and stakeholders. More research is needed about the redistributive impacts of change, to ensure that policy reform is legitimate and enduring.Notes

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