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Regional Cooperation for the Establishment and Management of Transboundary Marine Protected Areas: A Reflection on Normative Shifts in International Environmental Law

Thesis presented by

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for the degree of

Doctor of Philosophy

University College Cork

School of Law

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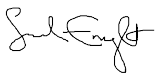
2022

Abstract

The purpose of this thesis is to examine the extent of the legal obligations of States under international law to conserve marine biodiversity via the establishment of transboundary marine protected areas (MPAs) across international jurisdictions. The main argument presented will demonstrate that while the science underpinning conservation of marine biodiversity and ecological connectivity has evolved to recommend transboundary networks of MPAs, the relevant international legal framework has not evolved in parallel to support their designation and implementation, resulting in limited and *ad hoc* approaches globally, ranging from traditional legally binding multilateral options under the United Nations Regional Seas Programme to non-legally binding voluntary agreements. In particular, this thesis sets out to examine to what extent international environmental law and the law of the sea facilitate and support cooperation between States in creating transboundary MPAs, in particular at the regional level.

Declaration

This is to certify that the work I am submitting is my own and has not been submitted for another degree, either at University College Cork or elsewhere. All external references and sources are clearly acknowledged and identified within the contents. I have read and understood the regulations of University College Cork concerning plagiarism and intellectual property.



Digital Signature of Candidate:

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This work was funded by the Irish Marine institute as part of the Navigate project on Ocean Law and Marine Governance (Grant-Aid Agreement No. PBA/IPG/17/01). The author is grateful to the Marine Institute, MaREI: the SFI Research Centre for Energy, Climate and Marine and the School of Law at UCC for the support provided throughout the previous four years, which included travel bursaries to attend several international conferences in the earlier stages of PhD research, which led to network building and exposure to the latest developments in environmental law, law of the sea and marine governance.

For example, early in my PhD journey, I attended a workshop on *Tendencies in Legal Approaches and Instruments for the Protection of Ecological Systems*, organized by Aarhus University in October 2018, which helped to flesh out my thoughts on the ecosystem approach as a theoretical framework for my thesis. In December 2018, I attended a conference hosted by the Strathclyde Centre for Environmental Law and Governance on *A Vision for Ocean Law and Governance: 2020-2030 and Beyond* which enabled me to meet other researchers working on similar topics. I also connected with experts working on the new treaty for biodiversity beyond national jurisdiction (BBNJ) at the 43rd Annual Centre for Oceans Law and Policy conference at the World Maritime University in May 2019 and was supported to present a paper at a conference on a *Rule of Law for the Oceans* at the University of Oslo in November 2019. I was also lucky enough to participate in the first *Marine Regions Forum* held in Berlin in September 2019. I am grateful that I had the opportunity to attend so many in person events prior to the beginning of the Covid-19 pandemic in early 2020.

I would also like to acknowledge support provided for publications, in particular the peer reviewed article in Frontiers in Marine Science, which is the first legal analysis published on the Eastern Tropical Pacific Marine Corridor.[1] Much of the research I carried out for Chapter Seven of this thesis is included in that paper. The research conducted on the

[1] Sarah Ryan Enright, Ricardo Meneses-Orellana and Inti Keith, 'The Eastern Tropical Pacific Marine Corridor (CMAR): The Emergence of a Voluntary Regional Cooperation Mechanism for the Conservation and Sustainable Use of Marine Biodiversity Within a Fragmented Regional Ocean Governance Landscape' (2021) 8 Frontiers in Marine Science 569.

ecosystem approach and regional ocean governance for this PhD also resulted in two publications.[2]

Many of the legal developments in this thesis remain in a state of flux, due to delays in international negotiations as a result of the Covid-19 pandemic. With regard to the negotiations for the post-2020 global biodiversity framework and the new BBNJ treaty, this thesis covers legal developments up to 30 August 2022. The latest version of the BBNJ text discussed in the thesis is dated 30 May 2022. The fifth Intergovernmental Conference, which took place in August 2022, did not result in a final treaty and a new draft text was not yet publicly available at the time of writing.

The author was inspired to study the law regulating Marine Protected Areas (MPAs) while literally living in an MPA - the Galapagos Marine Reserve - and working at the Charles Darwin Research Station on the Galapagos Islands between 2016-18. This work involved close collaboration with marine scientists dedicated to the safeguarding of marine biodiversity and working to ensure that the data they collect has an influence on policy makers. I had direct exposure to the challenges involved in managing large scale MPAs, the logistical and financial difficulties inherent in ocean exploration and the ambition required to embark on transboundary initiatives. I could not help but notice the legal gaps in the science-policy interface and rather limited nature of legal literature on many marine biodiversity issues. The obvious need for more interdisciplinary work between lawyers, scientists and other disciplines on many of the pressing issues facing the ocean is what encouraged me to embark on this PhD project.

Finally, I wish to thank my supervisors, Professor Owen McIntyre and Dr. Anne Marie O' Hagan for their tireless support and much valued mentorship throughout this entire process. Dr. Bjorn-Oliver Magsig also acted as a supervisor during the first year of the PhD, to whom I also express my gratitude. I would also like to acknowledge my close friends and former PhD students, Dr. Tom Gerald Daly and Dr. Emma Nyhan who

[2] Sarah Ryan Enright and Ben Boteler, 'The Ecosystem Approach in International Marine Environmental Law and Governance' in T O'Higgins, M Lago and TH DeWitt, *Ecosystem-Based Management, Ecosystem Services and Aquatic Biodiversity* (Springer, 2020) and Sarah Ryan Enright, 'Marine Protected Areas in the high seas:The role of regional ocean governance' (2020) 25 Environmental Liability-Law, Policy and Practice 248.

generously provided mentorship and psychological support! Last, but not least, I wish to thank my Irish and Ecuadorian families for their patience, love and assistance in so many ways during these past years. Mam, Dad, Theresa, Maurice, Diarmuid, Leona, John, Priscilla, my gorgeous nephew Cillian and adored daughter Brianna. And finally, a special mention of appreciation for Fabian, my partner in life, IT guru and all-round fixer, who saved the day many a time! It would not have been possible without you.

Sarah Ryan Enright

September 2022

Abbreviations / Acronyms

ABMT	Area-Based Management Tools
ABNJ	Areas Beyond National Jurisdiction
APEI	Areas of Particular Environmental Interest [ISA]
BBNJ	Biodiversity Beyond National Jurisdiction
CA	Collective Arrangement [OSPAR]
CBD	UN Convention on Biological Diversity
CCAMLR	Convention for the Conservation of Antarctic Marine Living Resources
CCZ-EMP	Clarion-Clipperton Zone - Eastern Pacific Ocean
CFP	Common Fisheries Policy [EU]
CHM	Common Heritage of Mankind [UNCLOS]
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLCS	Commission on the Limits of the Continental Shelf [UNCLOS]
CMAR	Eastern Tropical Marine Corridor *(Corredor Marino del Pacífico Este Tropical)*
CMS	Bonn Convention on the Conservation of Migratory Species of Wild Animals
COP	Conference of the Parties
CP	Contracting Party/Parties
CPPS	Permanent Commission for the South Pacific *(Comisión Permanente del Pacifico Sur)*
EA	Ecosystem Approach
EAF	Ecosystem Approach to Fisheries
EBM	Ecosystem-Based management
EBSA	Ecologically or Biologically Significant Areas
EC	European Commission
ECJ	European Court of Justice
ECS	Extended Continental Shelf [UNCLOS]

EEA	European Environment Agency
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
ES	Ecosystem Services
ETP	Eastern Tropical Pacific Ocean
EU	European Union
FAO	Food and Agriculture Organization [UN]
GES	Good Environmental Status (MSFD)
GFCM	General Fisheries Commission for the Mediterranean and Black Sea
HELCOM	Baltic Maine Environment Commission (Helsinki Convention)
HMPA	Highly Protected Marine Areas
IATTC	Inter-American Tropical Tuna Commission
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICES	International Council for the Exploration of the Seas
ICJ	International Court of Justice
ICRW	International Convention for the Regulation of Whaling
ICZM	Integrated Coastal Zone Management
IGC	Intergovernmental Conference [UN]
ILBI	Internationally Legally Binding Instrument
ILC	International Law Commission
IMO	International Maritime Organization [UN]
IMP	Integrated Maritime Policy [EU]
IOC	Intergovernmental Oceanographic Commission
IOG	International Ocean Governance [EU]
IPBES	Intergovernmental Panel for Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
ISA	International Seabed Authority [UNCLOS]
IUCN	International Union for Conservation of Nature
IUU	Illegal, Unregulated and Unreported fishing
IWC	International Whaling Commission

JNCC	Joint Nature Conservation Committee [UK]
LME	Large Marine Ecosystems
MAB	Man and Biosphere Programme (UNESCO)
MARPOL	International Convention for the Prevention of Pollution from Ships
MCZ	Marine Conservation Zone [UK]
MEA	Multi-lateral Environmental Agreements
MOU	Memorandum of Understanding
MPA	Marine Protected Area
MS	Member States [EU]
MSFD	Marine Strategy Framework Directive [EU]
MSP	Marine/Maritime Spatial Planning
NACES	North Atlantic Current and Evlanov Sea basin MPA
NAMMCO	North Atlantic Marine Mammal Commission
NASCO	North Atlantic Salmon Conservation Organisation
NEA	North-East Atlantic
NEAFC	North East Atlantic Fisheries Commission
NEAS	North-East Atlantic Environment Strategy [OSPAR]
NGO	Non-Governmental Organisation
nm	Nautical Mile
NOAA	National Oceanic and Atmospheric Administration [USA]
NTZ	No Take Zone
OECM	Other Effective Area Based Conservation Measures [CBD]
OLDEPESCA	Latin American Organization for Fisheries Development
OSPAR	Oslo Paris Convention for the Protection of the Marine Environment of the North East Atlantic
OSPESCA	Central American Fisheries and Aquaculture Organization
POM	Programme of Measures
PSSA	Particularly Sensitive Sea Areas [IMO]
RAC	Regional Activity Centres [UNEP RSP]
RCU	Regional Coordinating Unit [UNEP RSP]

RFB	Regional Fishery Bodies
RFMO	Regional Fisheries Management Organisations
RTC	Regional Technical Committee [CMAR]
ROG	Regional Ocean Governance
RSC	Regional Seas Convention
RSP	Regional Seas Programme [UNEP]
SAC	Special Area of Conservation
SCP	Systematic Conservation Planning
SDG	Sustainable Development Goal
SEA	Strategic Environmental Assessment
SJD	San Jose Declaration
SPA	Special Protection Area [EU Birds Directive]
SPAMI	Specially Protected Area of Mediterranean Importance
TBMPA	Trans-Boundary Marine Protected Area
TMCA	Transboundary Migration Conservation Areas
UK	United Kingdom
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Convention on the Law of the Sea
UNEA	United Nations Environment Assembly
UNEP	United Nations Environment Programme
UNEP-WCMC	United Nations Environment Programme – World Conservation Monitoring Centre
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFSA	United Nations Fish Stocks Agreement
UNGA	United Nations General Assembly
UNICPOLOS	Open-ended Informal Consultative Process on Oceans and the Law of the Sea
VME	Vulnerable Marine Ecosystems

WCPA	World Commission on Protected Areas [IUCN]
WDPA	World Database on Protected Areas [IUCN & UNEP]
WFD	Water Framework Directive [EU]
WHC	World Heritage Convention [UNESCO]
WHS	World Heritage Site [UNESCO]
WSSD	World Summit on Sustainable Development

Table of Cases and Statutes

International Arbitral Tribunals

Trail Smelter Arbitration (US v. Canada), (1941) 3 RIAA 1911

Iron Rhine Railway case (PCA 2005, Belgium v Netherlands)

MOX Plant Case (Ireland v. United Kingdom), PCA Case No. 2002–01, Final Award of 6 June 2008

Chagos Marine Protected Area Arbitration (Mauritius v. United Kingdom), PCA Case number 2011–03, Final Award of 18 March 2015

The South China Sea Arbitration (The Republic of Philippines v. The People's Republic of China), PCA Case 2013–19, Final Award of 12 July 2016

International Tribunal for the Law of the Sea (ITLOS)

MOX Plant Case (Ireland v. United Kingdom), Provisional Measures, ITLOS Case No. 10, Order (3 December 2001)

Southern Bluefin Tuna (Australia and New Zealand v. Japan), 39 ILM 1359 (2000), 4 August 2002

Request for an Advisory Opinion submitted by the Sub-Regional Fisheries Commission (SRFC) (Advisory Opinion), Case No. 21, 2 April 2015

International Court of Justice (ICJ)

North Sea Continental Shelf Case, Judgment, ICJ reports 1969, 3

Pulp Mills on the River Uruguay (Argentina v. Uruguay), Judgment, ICJ Reports 2010, 14.

Costa Rica v. Nicaragua, Judgment, ICJ Reports 2009, 214

Treaties and Other International Instruments

Convention on Nature Protection and Wild Life Preservation in the Western Hemisphere (1940) 56 Stat. 1354, 161 UNTS 193

International Convention for the Regulation of Whaling (1946) 161 UNTS 72

Antarctic Treaty (1959) 402 UNTS 71

Convention for The International Council for the Exploration of the Sea (1964), available at www.ecolex.org, (TRE-000502).

Vienna Convention on the Law of Treaties (1969) 1155 UNTS 331.

Convention on Wetlands of International Importance especially as Waterfowl Habitat (1971) 996 UNTS 247.

Convention Concerning the Protection of the World Culture and Natural Heritage (1972) 1037 UNTS 151.

Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (1972) 932 UNTS 3.

Convention for the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972), as modified by the Protocol of 7 November 1996, 1046 UNTS 120.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973) 983 UNTS 243.

International Convention for the Prevention of Pollution from Ships (1973) 1340 UNTS 184.

Convention for the Prevention of Marine Pollution from Land-Based Sources (1974) 1546 UNTS 103.

Convention on the Conservation of Migratory Species of Wild Animals (1979) 1651 UNTS 333.

Convention on the Conservation of Antarctic Marine Living Resources (1980) 1329 UNTS 47

Convention on Future Multilateral Cooperation in North-East Atlantic Fisheries (1980), available at www.ecolex.org, (TRE-000848)

Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern African Region (1981), available at www.ecolex.org (TRE-000547).

Convention for the Protection of the Marine Environment and Coastal Area of the South-East Pacific (1981) available at www.ecolex.org (TRE-000741)

United Nations Convention on the Law of the Sea (1982) 1833 UNTS 397.

Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (1986), available at www.ecolex.org (TRE-000892)

Convention on Biological Diversity (1992) 1760 UNTS 79

United Nations Framework Convention on Climate Change (1992) 1771 UNTS 107

Convention for the Protection of the Marine Environment of the North East Atlantic (1992) 2354 UNTS 67.

Convention on the Protection of the Marine Environment of the Baltic Sea Area (1992) 1507 UNTS 167

Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (1995), available at www.ecolex.org (TRE-001284)

Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (1995) (SPA/BD Protocol), available on www.ecolex.org (TRE-001220).

Agreement for the Implementation of the Provisions of the UN Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (1995) 2167 UNTS 3.

Inter-American Convention for the Protection and Conservation of Sea Turtles (1997) 78 MARINE TURTLE NEWSLETTER 13.

Agreement on the Conservation of Albatrosses and Petrels (2001) ATS 5

Convention for Cooperation in the Protection and Sustainable Development of the Marine and Coastal Environment of the Northeast Pacific (2002). (Not yet in force). Available online
at: www.ecolex.org (TRE-001350).

The Nairobi Convention for the Development, Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean (2010) (Amended). Available at www.ecolex.org (TRE-157165)

Non-binding International Instruments

Stockholm Declaration on the Human Environment (1972) UN Doc. A/CONF48/14/Rev.1

Rio Declaration on Environment and Development (1992) 31 ILM 874, UN Doc. A/CONF.151/26/Rev.1

UNCED, Agenda 21: Programme of Action for Sustainable Development (1992) UN Doc A/ Conf. 151/26.

Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem 2001 (FAO/Government of Iceland), Available at www.ecolex.org

Johannesburg Plan of Implementation of the World Summit on Sustainable Development, UN Doc. A/CONF.199/20 (2002)

OSPAR Recommendation 2003/3 on a Network of Marine Protected Areas, OSPAR 03/17/1-E

Declaración de San José sobre el corredor marino de Conservación del Pacifico este Tropical Entre las Islas Coco – Galápagos – Malpelo – Coiba – Gorgona, 2 April 2004 (San Jose Declaration)

OSPAR Recommendation 2010/2 on amending Recommendation 2003/3 on a network of Marine Protected Areas, OSPAR 10/23/1

UN General Assembly, *The Future We Want*, A/RES/66/288, 11 September 2012.

UN General Assembly *Transforming Our World: the 2030 Agenda for Sustainable Development* A/RES/70/1, 25 September 2015.

United Nations Environment Assembly of the United Nations Environment Programme, UNEP/EA.2/Res.10 (2016)

UN General Assembly, *Resolution on an International legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction*, A/RES/72/249, 24 December 2017.

Collective arrangement between competent international organisations on cooperation and coordination regarding selected areas in areas beyond national jurisdiction in the North East Atlantic, OSPAR Agreement 2014-09 (Update 2018)

UN General Assembly, *Nature knows no borders: transboundary cooperation – a key factor for biodiversity conservation, restoration and sustainable use*, A/RES/75/271, 16 April 2021

Declaración para la conservación y manejo de los ecosistemas comprendidos en el corredor marino del pacifico este tropical migravías Cocos-Galápagos- Malpelo-Coiba, Glasgow, 2 November 2021 (Glasgow Declaration).

UN General Assembly *Oceans and the law of the sea*, A/RES/76/72, 9 December 2021

Strategy of the OSPAR Commission for the Protection of the Marine Environment of the North East Atlantic 2030. Agreement 2021-01

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Chapter One Introduction

"Everyone, everywhere is inextricably connected to and utterly dependent upon the existence of the sea." [1]

1. The Ocean and Marine Biodiversity

The global ocean makes life on Earth possible, hence why it is often referred to as Earth's 'life support system'[2] or 'lifeblood'.[3] It covers 71 percent of the surface of the planet and contains 97% of Earth's water.[4] The global ocean makes up more than 97 percent of the biosphere, which refers to all life in the world,[5] and is rich in biodiversity. According to the 2010 *Census of Marine Life*, the oceans are estimated to contain nearly 250,000 known species, with expectation of a further 750,000 unconfirmed species.[6] The ocean is the provider of essential 'ecosystem services'[7] which make life on Earth possible: it regulates our climate and weather, absorbs much of the carbon dioxide from the atmosphere and is a source of food, water and oxygen.[8] It is also a source of significant economic activity, which encompasses industries such as shipping, fishing, aquaculture, tourism and energy extraction. Marine ecosystems which are abundant and biodiverse are best placed to provide maximum long-term benefits for mankind.[9] These factors are

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[1] Sylvia A Earle, *The world is blue: How our fate and the ocean's are one* (National Geographic Books 2009), Introduction.
[2] Ibid.
[3] Dan Laffoley and others, 'Evolving the narrative for protecting a rapidly changing ocean, post-COVID-19' (2021) Aquatic Conservation: Marine and Freshwater Ecosystems 31 (6): 1512-1534, 1514.
[4] Hans-Otto Pörtner and others, 'IPCC special report on the ocean and cryosphere in a changing climate' (2019) IPCC Intergovernmental Panel on Climate Change (IPCC) Summary for Policymakers, 24 September 2019, 3.
[5] Earle, *The world is blue: How our fate and the ocean's are one*, Introduction. The biosphere is the surface and atmosphere of the earth occupied by living organisms. https://www.lexico.com/en/definition/biosphere
[6] Summary of the *First Census of Marine Life*, 2010; Press Release, 4 October 2010. Available at: http://www.coml.org/
[7] In simple terms, ecosystem services are the benefits humans obtain from ecosystems such as clean air, water, food, fuel, climate regulation, and recreation. See further the Millennium Ecosystem Assessment, *Ecosystems and Human Wellbeing: Synthesis* (Island Press, 2005), which provides a typology of four categories of ecosystem services: supporting, provisioning, regulating, and cultural services. https://www.millenniumassessment.org/en/index.html. See also Karen Evans and others, 'The global integrated world ocean assessment: linking observations to science and policy across multiple scales' (2019) 6 Frontiers in Marine Science 298, 2 for some brief discussion and examples.
[8] Earle, *The world is blue: How our fate and the ocean's are one*, Introduction.
[9] See generally Callum Roberts, *The ocean of life: The fate of man and the sea* (Penguin 2012).

also considered to be necessary elements of ecosystem resilience,[10] a critical ingredient for long term sustainability, especially in the face of climate change.[11]

Despite its critical importance for all life on Earth, biological diversity is now rapidly declining. Biodiversity is the 'infrastructure' that supports all life on Earth. [12] It is often referred to as the 'web of life': it is the variety of all living things – plants, animals and micro-organisms – and the ecosystems of which they are a part.[13] Humans depend on it for clean air, water, food, fuel, soil fertility, climate regulation, medicine, technology and recreation.[14] The Convention on Biological Diversity (CBD) defines biodiversity as:

> "The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part: this includes diversity within species, between species and of ecosystems".[15]

This definition suggests three levels at which biodiversity must be preserved: genetic diversity within species, species diversity and diversity of ecosystems; it therefore follows that conservation and management of these three levels of biodiversity requires the protection of the species and habitats that make this diversity possible.[16] In its Preamble, the CBD recognizes the considerable scientific value of biodiversity "for evolution and for maintaining life sustaining systems in the biosphere." In addition to the benefits biodiversity provides to humans, it is also arguable that biodiversity should be preserved for its own sake, and for its ethical and aesthetic value.[17] Marine biodiversity loss is proceeding at alarming rates. The 2019 *Global Assessment Report on Biodiversity*

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[10] Ecosystem resilience is "the extent to which ecosystems can absorb recurrent natural and human perturbations and continue to regenerate without slowly degrading or unexpectedly flipping into alternate states". See Terence P. Hughes and others, 'New paradigms for supporting the resilience of marine ecosystems' (2005) 20 Trends in ecology & evolution (Amsterdam) 380.
[11] Daniela Diz, 'Marine biodiversity: Unravelling the intricacies of global frameworks and applicable concepts' in *Elgar Encyclopedia of Environmental Law* (Edward Elgar Publishing Limited 2017), 124.
[12] WWF *Living Planet Report - 2018: Aiming Higher.* (WWF, 2018), 110.
[13] Ibid, 100.
[14] Millennium Ecosystem Assessment, *Ecosystems and Human Wellbeing: Synthesis.*
[15] Article 2 Convention on Biological Diversity (1992) 1760 UNTS 79.
[16] Pierre-Marie Dupuy and Jorge E. Viñuales, *International environmental law* (Cambridge University Press 2015), 186.
[17] Yoshifumi Tanaka, *A dual approach to ocean governance: the cases of zonal and integrated management in international law of the sea* (Routledge 2008), 126-127.

and Ecosystem Services revealed *inter alia* that natural ecosystems had lost half their area, two thirds of the marine environment had been "severely altered" by human activity and approximately one third of reef forming corals, sharks and marine mammals are threatened with extinction.[18] According to the 2020 World Wildlife Fund (WWF) *Living Planet Report*, there has been a 68% decline in populations of mammals, birds, fish, reptiles, and amphibians in just over 40 years.[19] Furthermore, almost 6 billion tonnes of fish and invertebrates have been taken from the world's oceans since 1950.[20]

The human drivers contributing to this staggering loss of biodiversity in the ocean include overfishing, land and sea based pollution, land and sea use change, including coastal development for infrastructure and aquaculture, while climate change is intensifying their impact on marine biodiversity.[21] The changes brought about by climate change, such as warmer waters and ocean acidification, are leading to, *inter alia*, increasingly rapid biological responses and ecological shifts including species depletion, migration and range shifts, resulting in changes to ecosystem structure and functioning, eventually leading to loss of globally unique biodiversity.[22] According to recent studies the oceans have absorbed 60% more heat than previously thought.[23] The Intergovernmental Panel on Climate Change (IPCC), issued a *Special Report on the Ocean and the Cryosphere in a Changing Climate* in 2019, wherein it stated that:

> "Since about 1950 many marine species across various groups have undergone shifts in geographical range and seasonal activities in response to ocean warming, sea ice change and biogeochemical changes, such as oxygen loss, to their habitats. This has resulted in shifts in species composition, abundance and biomass production of ecosystems, from the equator to the poles. Altered interactions

[18] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) *Global Assessment Report on Biodiversity and Ecosystem Services* (2019), Media Release, 6 May 2019, 9.
[19] WW*F Living Planet Report 2020 - Bending the curve of biodiversity loss* (WWF, 2020), 16.
[20] WWF *Living Planet Report - 2018*, 5.
[21] IPBES, Summary for policymakers, 6 May 2019, 4; See also the Second World Ocean Assessment 2021 (WOA II), which is the output of the second cycle of the Regular Process for Global Reporting and Assessment of the States of the Marine Environment. This is the only integrated assessment of the world's oceans at the global level covering environmental, economic and social aspects. Available at https://www.un.org/regularprocess/woa2launch.
[22] Pörtner and others, 'IPCC special report on the ocean and cryosphere in a changing climate', 12; 24.
[23] Laure Resplandy and others, 'Quantification of ocean heat uptake from changes in atmospheric O2 and CO2 composition' (2018) 563 Nature 105.

between species have caused cascading impacts on ecosystem structure and functioning. In some marine ecosystems, species are impacted by both the effects of fishing and climate changes."[24]

The scale of the ongoing biodiversity crisis and the exacerbating role of climate change has led scientists to demand that global warming be tackled as the highest priority given that it is the pre-eminent factor driving change in the ocean.[25] Both the loss of biological diversity and the effects of climate change are interlinked, complex global threats that must be addressed across jurisdictional, institutional and sectoral boundaries[26] and there is agreement on the need for improved cooperation and linkages across ongoing global climate, biodiversity and sustainability processes to achieve a 'whole of ocean' approach.[27]

2. The Need for Networks of Transboundary Marine Protected Areas

The critical decline of marine biological diversity worldwide, has led to demands for legislative frameworks mandating conservation actions and, specifically, calls for more legally protected areas.[28] Protected areas have long been regarded as a fundamental management tool to conserve biodiversity,[29] without which global loss of biodiversity

[24] Pörtner and others, 'IPCC special report on the ocean and cryosphere in a changing climate', 12.
[25] Dan Laffoley and others, 'Eight urgent, fundamental and simultaneous steps needed to restore ocean health, and the consequences for humanity and the planet of inaction or delay' (2020) Aquatic Conservation: Marine and Freshwater Ecosystems 30 (1): 194-208, 196.
[26] Ingvild Ulrikke Jakobsen, 'Marine Protected Areas and Climate Change' in Johansen and others, *The Law of the Sea and Climate Change: Solutions and Constraints* (Cambridge University Press 2020), 234, 258; Derek P Tittensor and others, 'Integrating climate adaptation and biodiversity conservation in the global ocean' (2019) 5 Science Advances, 1.
[27] E.g., Carole Martinez, Christophe Lefebvre and Dorothée Herr, 'Strengthening the relationship between Marine Protected Areas and ocean protection and measures to deliver climate change adaptation and mitigation' in François Simard, *Marine Protected Areas and climate change: Adaptation and mitigation synergies, opportunities and challenges* (IUCN 2016); Arie Trouwborst, 'Countering fragmentation of habitats under international wildlife regimes' in Bowman and others, *Research handbook on biodiversity and law* (Edward Elgar Publishing 2016); Laffoley and others, 'Eight urgent, fundamental and simultaneous steps needed to restore ocean health, and the consequences for humanity and the planet of inaction or delay'.
[28] See *inter alia* Enric Sala and others, 'Protecting the global ocean for biodiversity, food and climate' (2021) 592 Nature 397; Kirsten Grorud-Colvert and others, 'The MPA Guide: A framework to achieve global goals for the ocean' (2021) 373 Science 6560; Sean L Maxwell and others, 'Area-based conservation in the twenty-first century' (2020) 586 Nature 217.
[29] See e.g., James EM Watson and others, 'The performance and potential of protected areas' (2014) 515 Nature 67; Stuart Chape, Mark Spalding and Martin Jenkins, *The world's protected areas: status, values and prospects in the 21st century* (University of California Press 2008).

would be even greater.[30] In the context of the marine environment, area-based management tools (ABMTs), and in particular, marine protected areas (MPAs), have emerged in recent decades as a widely accepted policy and legal instrument to provide for the long-term conservation of nature, to restore ecosystem resilience and to mitigate the damage to marine biodiversity caused by human activities.[31] In fact, MPAs were recently identified as one of the top three priority actions needed to avert ecological disaster in the global ocean.[32] As will be discussed in more detail in Chapter Three, there is an international legal obligation on States to establish MPAs in marine areas under national jurisdiction under the CBD. There is an implicit legal obligation under the United Nations Law of the Sea Convention (UNCLOS) within the context of general duties on States to protect the marine environment. In a major milestone for ocean conservation, a new legal framework to establish MPAs in areas beyond national jurisdiction is due to be agreed imminently under UNCLOS (see further Chapters Three and Five).

International targets agreed under the framework of the CBD, which previously aimed for protection of 10% of global waters by 2020, are due to be increased to 30% by 2030 under the Post-2020 Global Biodiversity Framework.[33] The IPCC in its Sixth Assessment Report recently called for protection of 30-50% of ocean areas, noting that "safeguarding biodiversity and ecosystems is fundamental to climate resilient development, in light of the threats climate change poses to them and their roles in adaptation and mitigation."[34]

Given that ecosystems and species distribution frequently do not correspond to political or jurisdictional boundaries, cooperative management between States and marine regions is essential for their conservation.[35] Networks of MPAs have frequently been cited as a

[30] UNEP-WCMC, IUCN and NGS, *Protected Planet Report 2018* (Cambridge UK; Gland, Switzerland; and Washington, D.C., USA, 2018), 2.
[31] See *inter alia* Diz, 'Marine biodiversity: Unravelling the intricacies of global frameworks and applicable concepts'. On the benefits of MPAs, see further Chapter Two.
[32] Laffoley and others, 'Eight urgent, fundamental and simultaneous steps needed to restore ocean health, and the consequences for humanity and the planet of inaction or delay', 5, 10.
[33] Target 3 of First Draft of the Post-2020 Global Biodiversity Framework, CBD/WG2020/3/3, 5 July 2021, available at https://www.cbd.int/conferences/post2020/wg2020-03/documents. On targets, see further Chapter Two.
[34] IPCC, Summary for Policymakers In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (2022), 34.
[35] IUCN-WCPA, *Establishing Marine Protected Area Networks-Making It Happen.* (IUCN-WCPA, NOAA and The Nature Conservancy 2008), 20.

practical tool for enabling such cooperation,[36] with transboundary networks offering a way of managing ecosystems divided by international boundaries.[37] When the natural boundaries of an ecosystem are spread across different international boundaries, the result is that it is subject to different management regimes operating under different governance, policy and legal frameworks and shaped within different socio-economic contexts.[38] This inevitably leads to fragmented management with associated dire consequences for the health of ecosystems. The current fragmented state of the international legal framework for ocean governance and MPAs (see Chapter Three) is an impediment to the achievement of many international obligations and globally agreed targets. Networks of transboundary MPAs (TBMPAs), managed cooperatively, offer States a clear mechanism to overcome the challenges of fragmentation and meet international biodiversity and sustainability targets under the CBD, Sustainable Development Goals and even the climate change regime.

Climate change is altering the environmental conditions and processes that underpin marine ecological connectivity, resulting in, as stated by the IPCC above, range shifts across depths or latitudes.[39] Ecological connectivity is "the unimpeded movement of species and the flow of natural processes that sustain life on Earth."[40] It includes processes such as nutrient flows, migration, larval dispersal, and gene flows and is fundamental for all aspects of the marine environment, underpinning the ecosystem's dynamics, resilience, productivity, and capacity to generate services for humans or to regenerate after disturbance.[41] It has therefore been proposed to design MPA networks which foster and support ecological connectivity in order to ensure continued connection for species undergoing climate induced spatial shifts, and for the related ecosystem changes

[36] Ibid.
[37] Maja Vasilijević and others *Transboundary Conservation: A systematic and integrated approach.* Best Practice Protected Area Guidelines Series No. 23, (IUCN, 2015), 22.
[38] Ibid.
[39] Leah R Gerber and others, 'Climate change impacts on connectivity in the ocean: Implications for conservation' (2014) 5 Ecosphere 1.
[40] Convention on Migratory Species (CMS) Resolution 12.26 (Rev.13) "Improving Ways of Addressing Connectivity Conservation of Migratory Species" adopted 22 February 2020. https://www.cms.int/sites/default/files/document/cms_cop13_res.12.26_rev.cop13_e.pdf
[41] Erwann Lagabrielle and others, 'Connecting MPAs – eight challenges for science and management' (2014) 24 Aquatic Conservation: Marine and Freshwater Ecosystems 94. See further Chapter Four.

generated.[42] Researchers have suggested that future MPA networks should be distributed across different depths, latitudes and biogeographic regions.[43] In addition, MPA networks should include MPAs with multiple ecosystems (inshore, nearshore, offshore) in order to facilitate connectivity and be linked to adjacent MPAs via the use of ecological corridors protecting larval dispersal.[44]

Given the large spatial scale involved in this level of protection, networks of TBMPAs are clearly an essential tool. They have been cited as one of the few mechanisms to address marine connectivity conservation at the ecosystem scale,[45] and are now seen as increasingly necessary to protect and preserve ecological connectivity between marine ecosystems.[46] This thesis will explain how the application of an ecosystem approach (see Chapter Four) to the design of MPAs has necessitated a move away from previous *ad hoc*, individual and sectoral designations to a more coherent and ecologically connected network of MPAs, which will protect species on the move and larger ecosystems. References to transboundary MPAs in this thesis also include transboundary networks of MPAs, unless otherwise specified.[47]

Cross-jurisdictional coordination and regional cooperation are considered essential for the management of such networks.[48] As noted by Guerreiro, if created at the ecosystem or ecoregion level, MPAs will likely straddle maritime boundaries and therefore

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[42] Mark H Carr and others, 'The central importance of ecological spatial connectivity to effective coastal marine protected areas and to meeting the challenges of climate change in the marine environment' (2017) 27 Aquatic Conservation: Marine and Freshwater Ecosystems 6, 7.
[43] Ibid, 25; Siddharth Shekhar Yadav and Kristina Maria Gjerde, 'The ocean, climate change and resilience: Making ocean areas beyond national jurisdiction more resilient to climate change and other anthropogenic activities' (2020) 122 Marine Policy 104184, 7.
[44] Carr and others, 'The central importance of ecological spatial connectivity to effective coastal marine protected areas and to meeting the challenges of climate change in the marine environment', 24; Barbara Lausche and others, *Marine Connectivity Conservation "Rules of Thumb" For MPA and MPA Network Design*, IUCN-WCPA Marine Connectivity Working Group. Version 1.0. (IUCN, 2021), 7-9.
[45] See e.g., Nur Arafeh-Dalmau and others, 'Marine Spatial Planning in a Transboundary Context: Linking Baja California with California's Network of Marine Protected Areas' (2017) 4 Frontiers in Marine Science.
[46] See e.g., Laffoley and others, 'Evolving the narrative for protecting a rapidly changing ocean, post COVID-19', 4; Vasilijević, *Transboundary Conservation: A systematic and integrated approach*, 22.
[47] See further Chapter Two, Section 3(b) and Chapter 8 for an explanation of the distinction.
[48] Peter J. S. Jones and Stephen D. Long, 'Analysis and discussion of 28 recent marine protected area governance (MPAG) case studies: Challenges of decentralisation in the shadow of hierarchy' (2021) 127 Marine Policy 104362, 12; José Ângelo Guerreiro da Silva and others, 'Transboundary MPAs: a challenge for the twenty-first century' (2012) 23 Management of Environmental Quality: An International Journal 328, 329.

necessitate international cooperation.[49] Given the fragmented state of international ocean governance and the lack of an appetite for the creation of an overarching global ocean governance authority,[50] several studies suggest that inter-institutional and cross-sectoral coordination and cooperation are key to successful conservation of biodiversity.[51] It is generally agreed that cooperation between States and across sectors is critical to advance marine biodiversity protection at global, regional and national levels,[52] and while a duty to cooperate does exist in general international law, environmental law and the law of the sea (as discussed in detail in Chapter Five, Section 2), from which a duty to cooperate to establish MPAs can arguably be implied, the modalities of such cooperation have not been widely studied.

This thesis will present arguments for why the regional scale is considered the most appropriate for the joint management of TBMPA networks (Chapter Five) and will compare different mechanisms for regional scale cooperation (legally binding versus non legally binding). Chapter Five will go into more detail, but it bears mentioning here that some important reasons include *inter alia* the capacity of the regional level for enhanced levels of cooperation due to common interests, existing levels of bilateral coordination, the possibilities for a more targeted approach taking into account local context, rather than the application of a generic global methodology, and the alignment of the regional scale with biogeographic classifications, in line with an ecosystem approach to management. All existing examples of transboundary MPAs to date have occurred on the regional level, likely for the above-mentioned reasons and the fact that there is no suitable global governance mechanism for their management, as will be evidenced in Chapter Three.

[49] José Guerreiro and others, 'The role of international environmental instruments in enhancing transboundary marine protected areas: An approach in East Africa' (2011) 35 Marine Policy 95, 95.
[50] Robin Mahon and Lucia Fanning, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance' (2019) 107 Marine Policy 103590, 3.
[51] Glen Wright and others, 'The long and winding road: negotiating a treaty for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction, IDDRI' (2018) Studies N 82, 29; Julien Rochette and others, 'The regional approach to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction' (2014) 49 Marine Policy 109, 115.
[52] See *inter alia* Ibid.

While some literature exists analysing different mechanisms globally for the management of TBMPAs, it is limited, particularly from a legal perspective.[53] This thesis attempts to add to the literature on regional cooperation for the purposes of TBMPA establishment and management, by examining two distinct governance approaches in different marine regions. One embodies a traditional legally binding normative approach to regional cooperation (but which relies heavily on soft law measures for implementation purposes), while the other reflects a non-binding voluntary approach. In this regard, the thesis grapples with an ongoing shift in international environmental law, whereby the distinction between hard and soft law is becoming increasingly blurred,[54] an evolution which is particularly apparent in the context of MPAs, in aspects such as target setting, designation and management.

While the case study on the North East Atlantic (Chapter Six) has been subject to more scholarly analysis than other regional efforts,[55] a significant amount of the literature on the Regional Seas Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR)[56] has been written by former staff; therefore, it is hoped that the case study in this thesis will contribute to a more diverse and objective literature on the state of regional ocean governance in that region. By way of the case study on the Eastern Tropical Pacific (Chapter Seven), this thesis hopes to contribute original research on a region that is grossly understudied from a legal and governance perspective despite its significant importance as a global biodiversity hotspot. Given the imperative to move towards a coherent global approach for marine biodiversity protection, which incorporates conservation of ecological connectivity,[57] the potential impact of future changes to the international legal framework brought about by a new international treaty

[53] See e.g., Peter Mackelworth, *Marine transboundary conservation and protected areas* (Routledge 2016).
[54] Karen N Scott, 'The dynamic evolution of international environmental law' (2018) 49 Victoria University of Wellington Law Review 607, 618.
[55] See e.g., Nele Matz-Lück and Johannes Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?' (2014) 49 Marine Policy 155, Erik J Molenaar and Alex G Oude Elferink, 'Marine protected areas in areas beyond national jurisdiction-the pioneering efforts under the OSPAR convention' (2009) 5 Utrecht L Rev 5 and Chapter Six for a complete literature review.
[56] (1992) 2354 UNTS 67.
[57] Jodi Hilty and others, 'Guidelines for conserving connectivity through ecological networks and corridors' Best Practice Protected Area Guidelines Series 30, (IUCN, 2020), ix.

for the protection of biodiversity beyond national jurisdiction[58] is also considered wherever relevant throughout the thesis.

3. Purpose of Thesis and Methodology

The purpose of this thesis is to examine the extent of any legal obligations of States under international law to conserve marine biodiversity via the establishment of transboundary MPAs across international jurisdictions. The main argument presented will demonstrate that while the science underpinning conservation of marine biodiversity and ecological connectivity has evolved to suggest the need for TBMPAs, the relevant international legal framework has not evolved in parallel to support their designation and implementation, resulting in limited and *ad hoc* approaches globally, ranging from traditional legally binding options under bilateral, trilateral or multilateral agreements, such as United Nations Regional Seas Conventions (RSCs), to non-legally binding voluntary arrangements. In particular, this thesis sets out to examine to what extent international environmental law and international law of the sea facilitates and supports cooperation between States in creating TBMPAs, in particular at the regional level.

In terms of methodology, this thesis engages in doctrinal analysis of primary legal sources and secondary literature. The thesis engages with primary sources such as treaties and associated secondary rules, soft law instruments such as Declarations, United Nations General Assembly Resolutions, technical guidance issued by the International Union for the Conservation of Nature (IUCN), CBD and other bodies, as well as action plans, memoranda of understanding and joint statements under RSCs, for example. Given the subject matter of this thesis (MPAs), there is less of an emphasis on case law, though the deliberations of courts and tribunals are analysed where relevant. This thesis also adopts a multidisciplinary approach, whereby relevant scientific literature is assessed and incorporated where appropriate. This is a necessity in the author's view, given that many of the concepts discussed, such as the ecosystem approach and ecological connectivity, originated in natural sciences scholarship.

[58] UN General Assembly Resolution on an International legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, A/RES/72/249, 24 December 2017.

In order to test the initial findings of the conceptual analysis of the relative strengths and weaknesses of regional ocean governance as a platform for managing TBMPAs, and the different mechanisms for regional cooperation (Chapter Five), the thesis engages in a unique comparative analysis of two distinct marine regions, the North East Atlantic and the Eastern Tropical Pacific. These marine regions were chosen because they facilitate the comparison of two quite different examples of regional cooperation for the establishment and management of transboundary networks of MPAs. The North East Atlantic (Chapter Six) is an advanced, industrialised region which has led pioneering efforts to establish a network of MPAs across national jurisdictions and areas beyond national jurisdiction (ABNJ), under the auspices of an overarching regional ocean governance framework, via an RSC.

In contrast, the Eastern Tropical Pacific (Chapter Seven) is both underdeveloped and understudied from a regional ocean governance perspective, despite being one of the most biodiverse and productive oceans in the world. Given the lack of a formal, overarching regional ocean governance framework, several coastal States united to create a regional cooperation mechanism with the aim to pursue joint management of a network of MPAs across international boundaries, potentially encompassing a portion of the high seas. Due to the dearth of literature on the Eastern Tropical Pacific from a governance and legal perspective, the author engaged in a 'light' socio-legal approach involving engagement with expert technical staff in the region, which helped to inform the analysis and discussion.

The analysis of both regions was carried out in a structured manner to facilitate comparison, while also considering their significant differences in terms of geography, politics and regional ocean governance mechanisms. Each case study follows a similar structure as follows: each chapter opens with a geographical introduction to the particular region, its biodiversity and the human activities impacting upon it; next the regional ocean governance framework for the region is discussed in broad terms in order to situate each transboundary MPA governance mechanism in context; this section is then followed by a detailed discussion of how each governance mechanism operates. Fourthly, the level of regional cooperation between the transboundary MPA governance mechanism and third

parties is discussed, followed by a final section analyzing the current status of each mechanism and next steps.

4. Layout of Thesis

Chapter Two will introduce Marine Protected Areas (MPAs) as a concept and trace their history and emergence onto the global ocean governance arena. It will locate MPAs within the range of area-based conservation measures and explain what qualifies as an MPA for the purposes of internationally agreed goals and targets. It will also introduce TBMPAs and highlight the additional complexities associated with their establishment. Chapter Three will analyze the primary international legal frameworks currently in place for the establishment of MPAs (e.g., the United Nations Convention on the Law of the Sea (UNCLOS),[59] CBD, RSCs), identifying gaps, challenges and enabling conditions for the establishment of TBMPAs across international boundaries. This chapter will illustrate that the fragmented nature of the current international legal framework for MPAs acts as a barrier to the effective establishment of TBMPAs across maritime zones and international borders, due to the spatial mismatch between ecosystems and ecological connectivity and the myriad of different regulations and management approaches applicable per maritime zone and jurisdiction.

Chapter Four provides a conceptual introduction to the ecosystem approach, a normative framework which may offer a way to overcome the fragmented zonal and sectoral approaches to ocean governance promulgated under UNCLOS. In particular, this chapter will examine how the ecosystem approach has influenced the development of MPAs from individual sites to future forward dynamic networks of ecologically connected sites across borders. Inherent to the ecosystem approach is a recognition of the interconnectivity of ocean ecosystems. This chapter will discuss how the growing acceptance of the ecosystem approach has in turn led to an emerging recognition of ecological connectivity in international law and policy, particularly in the context of MPA design, whereby the use of TBMPAs and ecological corridors have been recommended as a means to implement the ecosystem approach and protect connectivity. Chapter Five provides a conceptual analysis of the regional approach to ocean governance as a model for the

[59] United Nations Convention on the Law of the Sea (1982) 1833 UNTS 397.

establishment and management of networks of TBMPAs across international jurisdictions, in line with an ecosystem approach. The cooperation and coordination strengths of regional ocean governance, in particular, may offer a way to overcome some of the fragmentation challenges discussed in the previous chapters. The conceptual frameworks laid out in Chapters Four and Five will then be applied to two empirical case study chapters, which explore binding and non-binding regional cooperation models in practice. Finally, the thesis will conclude with a summary of the main hypothesis and arguments, as well as identifying future areas for research.

Chapter 2 Marine Protected Areas: A Conceptual Introduction

1. A Fundamental Tool for Marine Biodiversity Conservation

The benefits of MPAs have been the subject of extensive scientific and policy literature[1] and include conservation of biodiversity, protection of habitats, improved fisheries,[2] reversal of biodiversity loss via exclusion or reduction of harmful activities, increased ecosystem resilience and enhancement of ecosystem services, which also lead to socio-economic benefits.[3] The European Environment Agency (EEA) has claimed that MPAs have the potential to be a "biodiversity vault" from which it may be possible to restore ecosystem structure and functions.[4] Given the central role that the oceans play in regulating the global climate,[5] MPAs have been lauded as having a key role to play in climate change mitigation and adaptation strategies.[6] While MPAs cannot in themselves prevent the effects of climate change,[7] their role in strengthening ocean resilience[8] is the subject of increasing scientific research.[9] For example, by protecting habitats which act as natural buffers to damage from severe storms, flood and erosion, such as coral reefs, seagrasses, wetlands and mangroves, MPAs can help to increase the ocean's resilience to

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[1] See inter alia Peter J. S. Jones, *Governing marine protected areas: resilience through diversity* (Routledge 2014); Stuart Chape, Mark Spalding and Martin Jenkins, *The world's protected areas: status, values and prospects in the 21st century* (University of California Press 2008); IUCN World Commission on Protected Areas (WCPA). *Applying IUCN's Global Conservation Standards to Marine Protected Areas (MPA). Delivering effective conservation action through MPAs, to secure ocean health & sustainable development*. (Version 1.0. IUCN, 2018).

[2] See e.g., Santiago J. Bucaram and others, 'Assessing fishing effects inside and outside an MPA: The impact of the Galapagos Marine Reserve on the Industrial pelagic tuna fisheries during the first decade of operation' (2018) 87 Marine policy 212.

[3] See generally Dan Laffoley and others, 'Marine protected areas', *World Seas: an Environmental Evaluation* (Elsevier 2019), 551-552.

[4] EEA, *Marine protected areas in Europe's seas. An overview and perspectives for the future* (European Environment Agency (EEA), Copenhagen, Denmark 2015), 9.

[5] Hans-Otto Pörtner and others, *The ocean and cryosphere in a changing climate* (Geneva: Intergovernmental Panel on Climate Change 2019).

[6] Decision 14/8 *Protected areas and other effective area-based conservation measures* CBD/COP/DEC/14/8, 30 November 2018. Annex 1, para. 4; François Simard, *Marine Protected Areas and climate change: Adaptation and mitigation synergies, opportunities and challenges* (IUCN 2016).

[7] Derek P Tittensor and others, 'Integrating climate adaptation and biodiversity conservation in the global ocean' (2019) 5 Science Advances eaay9969, 1.

[8] Ecosystem resilience is "the extent to which ecosystems can absorb recurrent natural and human perturbations and continue to regenerate without slowly degrading or unexpectedly flipping into alternate states". See Terence P. Hughes and others, 'New paradigms for supporting the resilience of marine ecosystems' (2005) 20 Trends in ecology & evolution (Amsterdam) 380.

[99] E.g., Catherine Marzin and others, 'Marine Protected Areas and Adaptation to Climate Change: How can MPAs Increase Climate Resilience?' in Simard, *Marine Protected Areas and climate change: Adaptation and mitigation synergies, opportunities and challenges*.

climate change impacts.[10] In terms of climate mitigation, there is an emerging focus on the protection of 'blue carbon' habitats which sequester and store carbon,[11] such as mangroves, seagrass and tidal marshes.[12]

In addition to the above, additional benefits of Transboundary MPAs (TBMPAs) include the facilitation of ecosystem-based approaches to marine management and conservation via the enhanced protection of ecological connectivity (see further Chapter Four). This leads to specific benefits for migratory species and supports higher resilience of ecosystems and species in the face of climate change and other threats.[13] Given that international cooperation is required to manage TBMPAs, associated benefits include harmonized legislation and better management of shared marine ecosystems, more engaged stakeholders, more cost-effective research and monitoring and increased cooperation on cross border enforcement and policing.[14]

a. A Brief History of an Increasingly Popular Conservation Tool

While MPAs have a long history,[15] they have gained momentum in recent years due to a much greater political emphasis on their establishment as a central approach to halting biodiversity loss. The Royal National Park, New South Wales, Australia, designated in

[10] Danielle Smith, 'A global network of MPAs: an important tool in addressing climate change', *Research Handbook on Climate Change, Oceans and Coasts* (Edward Elgar Publishing 2020), 435.
[11] The carbon sequestered by the world's oceans and coastal wetlands is termed 'blue carbon'. See further Catrin Norris and others 'Blue Carbon in the United Kingdom: Understanding and developing the opportunity' (Blue Marine Foundation 2021).
[12] Due to knowledge gaps in blue carbon science, these habitats are currently the only marine habitats included under IPCC guidance to States. Norris and others, 'Blue Carbon in the United Kingdom: Understanding and developing the opportunity', 26.
[13] M. Vasilijević and others *Transboundary Conservation: A systematic and integrated approach.* Best Practice Protected Area Guidelines Series No. 23 (IUCN 2015), 22.
[14] IUCN-WCPA, *Establishing Marine Protected Area Networks-Making It Happen.* IUCN-WCPA, NOAA and The Nature Conservancy (2008), 20 citing T. Sandwith, C. Shine, L. Hamilton and D. Sheppard, *Transboundary Protected Areas for Peace and Co-operation* (IUCN, 2001); Erika Techera, 'Marine protected areas: Contemporary challenges and developments', (1 edn, Routledge 2019), 67 citing Sebastian Unger, *Managing Across Boundaries: The Dogger Bank-a Future International Protected Area*, (WWF Germany 2004).
[15] Marine areas have been set aside for millennia under traditional management systems, based on a combination of spiritual, territorial and pragmatic considerations. See further, Jones, *Governing marine protected areas: resilience through diversity*, 11 and Chape, Spalding and Jenkins, *The world's protected areas: status, values and prospects in the 21st century*, 24. For a detailed global overview of the historical development of MPAs, see Sue Wells and others, 'Building the future of MPAs – lessons from history' (2016) 26 Aquatic Conservation: Marine and Freshwater Ecosystems 101 and for a more concise summary, see María Maestro and others, 'Marine protected areas in the 21st century: Current situation and trends' (2019) 171 Ocean and Coastal Management 28.

1897, is usually cited as the first documented example of a modern MPA.[16] While predominantly terrestrial, it also included open coast and estuarine habitats.[17] Similar terrestrial protected areas with a marine coastal component began to appear in the US in the 1930s.[18] The first terrestrial transboundary protected area was established in 1932 between the US and Canada, the Waterton-Glacier International Peace Park, which comprised previously established national parks in each State.[19] Despite a rich history of transboundary conservation cooperation on land, its application in the marine environment has only recently begun.[20] The first TBMPA was established in Asia in 1996[21] and few examples exist in the world today.[22] By analysing ongoing efforts in the North East Atlantic (Chapter Six) and the Eastern Tropical Pacific (Chapter Seven), this thesis hopes to contribute to the literature on the establishment and management of TBMPAs at a regional and global level.

In 1960, the International Union for the Conservation of Nature (IUCN)[23] established a National Parks Commission, the precursor to the World Commission on Protected Areas (WCPA).[24] Specific attention was given to coastal and marine ecosystems during the first IUCN World Parks Congress in 1962, which sets the agenda for protected areas and

[16] Jones, *Governing marine protected areas: resilience through diversity*, 11; Wells and others, 'Building the future of MPAs – lessons from history', 103; Laffoley and others, 'Marine protected areas', 549.
[17] Ibid.
[18] Maestro and others, 'Marine protected areas in the 21st century: Current situation and trends', 28.
[19] José Guerreiro and others, 'The role of international environmental instruments in enhancing transboundary marine protected areas: An approach in East Africa' (2011) 35 Marine Policy 95, 96.
[20] See Vasilijević, *Transboundary Conservation: A systematic and integrated approach*, 4-5; I Lysenko, C Besançon and C Savy, '2007 UNEP-WCMC global list of transboundary protected areas' (2007) Global Transboundary Conservation Network.
[21] The Turtle Island Heritage Protected Area was declared by the governments of Malaysia and the Philippines in a Memorandum of Understanding, to secure the survival of marine turtles in the region. See further Vasilijević, *Transboundary Conservation: A systematic and integrated approach*, 5 and Evangeline Miclat and Enrique Nunez, 'The Philippines–Sabah Turtle Islands Heritage Protected Area (TIHPA)' in Mackelworth, *Marine Transboundary Conservation and Protected Areas* (Routledge 2016).
[22] For example, a search for TBMPAs on the database Protected Planet yields only eight results. However, this would appear to be limited to adjacent and contiguous TBMPAs only (see discussion at Section 2(b) in this chapter). See https://www.protectedplanet.net/en [Site accessed 9 September 2022]. For comparison purposes, Peter Mackelworth, *Marine transboundary conservation and protected areas* (Routledge 2016) contains 11 examples.
[23] The IUCN is a membership Union composed of both government and civil society organisations which aims to conserve nature and accelerate the transition to sustainable development. See www.iucn.org/about
[24] Wells and others, 'Building the future of MPAs – lessons from history', 104.

assists national governments to create new protected areas.[25] This Congress helped to create a sense of urgency around the creation of MPAs and has been described as a main driver behind the subsequent impetus for MPAs.[26]

MPAs became a firmly established global concept during the 1970s.[27] During the early 1970s, international agreements such as the Ramsar Convention[28] and the World Heritage Convention[29] were adopted, further reflecting global concern for marine environmental problems and spatial protection as a solution.[30] The 1972 Stockholm Conference on the Human Environment[31] marked a milestone towards the development of international treaties focusing on the conservation of biological diversity, with the Stockholm Declaration containing important principles on the responsibility to safeguard natural ecosystems and manage wildlife and habitats.[32] The United Nations Environment Programme (UNEP) was established following the Conference, which developed the Regional Seas Programme (RSP) in 1974, now a global platform for the promotion of networks of MPAs and regional marine conservation.[33]

National MPA movements began to take hold throughout the 1970s. The US Congress established an MPA programme managed by the National Oceanic and Atmospheric Administration (NOAA) in the early 70s.[34] Legislation passed in Australia in 1975 led to

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[25] Marine Protected Area Advisory Group. *Expanding Ireland's Marine Protected Area Network: A report by the Marine Protected Area Advisory Group*. Report for the Department of Housing, Local Government and Heritage, Ireland (2020), 35.

[26] Laffoley and others, 'Marine protected areas', 549; Maestro and others, 'Marine protected areas in the 21st century: Current situation and trends', 29; John Humphreys and Robert W. E. Clark, 'Chapter 1 - A critical history of marine protected areas' in John Humphreys and Robert W. E. Clark (eds), *Marine Protected Areas. Science, Policy and Management* (Elsevier 2020), 2.

[27] Wells and others, 'Building the future of MPAs – lessons from history', 106.

[28] Convention on Wetlands of International Importance especially as Waterfowl Habitat (1971) 996 UNTS 245.

[29] Convention for the Protection of the World Cultural and Natural Heritage (1972) 1037 UNTS 151.

[30] Maestro and others, 'Marine protected areas in the 21st century: Current situation and trends', 29. These Conventions will be discussed in more detail in Chapter Two.

[31] This was the UN's first major conference on international environmental issues and marked a turning point in the development of international environmental politics. See further https://sustainabledevelopment.un.org/milestones/humanenvironment.

[32] See Principles 2 and 4 Stockholm Declaration on the Human Environment (1972) UN Doc. A/CONF48/14/Rev.1. See also Yoshifumi Tanaka, *The International Law of the Sea* (3 edn, Cambridge University Press 2019), 406.

[33] https://www.unep.org/explore-topics/oceans-seas/what-we-do/promoting-effective-marine-protected-areas. See further Chapter Five for a detailed discussion of the RSP.

[34] Wells and others, 'Building the future of MPAs – lessons from history', 106.

the world's first large-scale MPA for the Great Barrier Reef Marine Park, still regarded by many as "the grandfather of modern MPAs" given the wide-ranging influence of its zoned approach to design and management.[35] By the end of the 1970s there was a growing awareness of the need for legal mechanisms to determine the use of ocean space, both within and beyond national boundaries, as the United Nations Convention on the Law of the Sea (UNCLOS) was being drawn up.[36] UNCLOS was signed in 1982 creating, *inter alia*, an international obligation to protect and preserve the marine environment, marine habitats and species, and an implicit legal basis for the establishment of MPAs, which will be discussed in more detail in Chapter Three.[37]

Following on from Stockholm, the 1992 UN Conference on Environment and Development (UNCED),[38] held in Rio de Janeiro and known as the Earth Summit, gave marine conservation a clearer framework.[39] Amongst the non-binding instruments adopted at the Summit were the now famous Rio Declaration,[40] which articulates many principles of international environmental law, and Agenda 21, the Summit's Programme of Action, which devoted a chapter to ocean protection and underlined the importance of new, holistic approaches to marine management, at national, regional, and global levels.[41] Chapter 17 specifically referred to MPAs:

> "Coastal States, with the support of international organizations, upon request, should undertake measures to maintain biological diversity and productivity of marine species and habitats under national jurisdiction. Inter alia, these measures might include: surveys of marine biodiversity, inventories of endangered species and critical coastal and marine habitats; *establishment and management of*

[35] Laffoley and others, 'Marine protected areas', 549-550; Wells and others, 'Building the future of MPAs – lessons from history', 106.
[36] Wells and others, 'Building the future of MPAs – lessons from history', 107.
[37] United Nations Convention on the Law of the Sea (1982) 1833 UNTS 397.
[38] Report of the UN Conference on Environment and Development, Rio de Janeiro, 3–14 June 1992, UN Doc. A/CONF.151/26/Rev.1 (vols. I–III). See further Philippe Sands and others, *Principles of international environmental law* (Fourth edn, Cambridge University Press 2018), 40.
[39] Wells and others, 'Building the future of MPAs – lessons from history', 107.
[40] Rio Declaration on Environment and Development (1992) 31 ILM 874, UN Doc. A/CONF.151/26/Rev.1
[41] UNCED, Agenda 21: Programme of Action for Sustainable Development (1992) UN Doc A/ Conf. 151/26. Chapter 17, para. 17.1.

protected areas; and support of scientific research and dissemination of its results."[42]

It goes on to require States to:

> "identify marine ecosystems exhibiting high levels of biodiversity and productivity and other critical habitat areas and should provide necessary limitations on use in these areas, through, inter alia, *designation of protected areas*."[43]

The landmark Convention on Biological Diversity (CBD)[44] was also adopted at the Earth Summit, which has been celebrated, *inter alia*, for embracing the ecosystem approach as a regulatory strategy for the conservation of nature, which in turn contributed to a more holistic view of the oceans and the activities occurring within them.[45] It also created the first international legal obligation for States to establish protected areas, both marine and terrestrial, which will be discussed in more detail in the next chapter.[46]

During the 2000s, the international community formally recognized the important role of MPAs at several key events such as the 2002 World Summit on Sustainable Development[47] where the Johannesburg Plan of Implementation called for the "establishment of marine protected areas consistent with international law and based on scientific information, including representative networks by 2012".[48] This objective was significant for the legal development of MPAs and was subsequently endorsed by parties to the CBD, the Regional Seas Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR)[49] and in European Union (EU) law.[50] In 2004, State

[42] Agenda 21, Chapter 17, para. 17.7. Emphasis added by author.
[43] Ibid, para. 17.85. Emphasis added by author.
[44] Convention on Biological Diversity (1992) 1760 UNTS 79.
[45] On the Ecosystem Approach, see further Chapter Four.
[46] Article 8 CBD.
[47] https://sustainabledevelopment.un.org/milesstones/wssd
[48] Johannesburg Plan of Implementation of the World Summit on Sustainable Development, UN Doc. A/CONF.199/20 (2002), para. 31 c. This Plan supports the implementation of Agenda 21 with para. 31 specifically stating "In accordance with chapter 17 of Agenda 21, promote the conservation and management of the oceans through actions at all levels".
[49] Convention for the Protection of the Marine Environment of the North East Atlantic (1992) 2354 UNTS 67.
[50] E.g., Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy

parties to the CBD agreed that "marine and coastal protected areas are one of the essential tools and approaches in the conservation and sustainable use of marine and coastal biodiversity"[51] and set a goal of establishing and maintaining "marine and coastal protected areas that are effectively managed, ecologically based and contribute to a global network".[52]

In 2012, the United Nations General Assembly (UNGA) adopted a Resolution entitled 'The future we want', known as the Rio +20 outcome document.[53] In relation to the oceans and seas, it explicitly recognizes that "oceans, seas and coastal areas form an integrated and essential component of the Earth's ecosystem and are critical to sustaining it."[54] Paragraph 177 of the document reaffirms the "importance of area-based conservation measures, including marine protected areas". Since 1997, the General Assembly has adopted an annual Resolution on the topic of 'Oceans and the Law of the Sea',[55] which since 2002, has called upon States to establish MPAs.[56] In 2021, the UNGA adopted a landmark resolution on transboundary cooperation for nature in which TBMPAs were explicitly recognized for their role in maintaining connectivity of habitats (see further Chapter Four) and it was recommended to increase their establishment.[57]

b. MPA targets: A False Sense of Accomplishment

The international community has continued to formally recognize the importance of MPAs by various methods,[58] but perhaps most prominently via the adoption of global

Framework Directive), OJ L 164, 25.6.2008, See further Ingvild Ulrikke Jakobsen, *Marine protected areas in international law: An arctic perspective* (Brill 2016), 12.

[51] CBD Decision VII/5 *Marine and coastal biological diversity* CBD/COP/DEC/VII/5, 13 April 2004, para. 16.

[52] Ibid, para. 18.

[53] UN General Assembly, *The Future We Want*, A/RES/66/288, 11 September 2012. Outcome document of UN Conference on Sustainable Development 2012.

[54] Ibid, para. 158.

[55] Sands and others, *Principles of international environmental law*, 550.

[56] UN General Assembly *Oceans and the law of the sea* A/RES/57/141, 12 December 2002, paras. 51, 53. See most recently, UN General Assembly *Oceans and the law of the sea*, A/RES/76/72, 9 December 2021, paras. 270-274.

[57] UN General Assembly, *Nature knows no borders: transboundary cooperation – a key factor for biodiversity conservation, restoration and sustainable use*, A/RES/75/271, 16 April 2021, para 9.

[58] See further Maestro and others, 'Marine protected areas in the 21st century: Current situation and trends', 29.

MPA targets. In 2010, State parties to the CBD adopted a *Strategic Plan for Biodiversity 2011-2020* which included the Aichi Targets. Aichi Target 11 stated the following:

> "By 2020, at least 17 per cent of terrestrial and inland water areas and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures and integrated into the wider landscape and seascape". [59]

Although Aichi Target 11 does not make an explicit reference to transboundary protected areas, it does emphasize the importance of connectivity in the integration of protected areas into the wider landscape and seascape, thus implying that conservation planning should not only take place at the national level, but also at the broader regional or international level, which could be implied as giving a key role to transboundary conservation.[60]

When discussing targets, it is also important to mention the Sustainable Development Goals (SDGs) which States committed to politically in 2015 as part of the 2030 Agenda for Sustainable Development.[61] The 2030 Agenda was adopted by the UN General Assembly in 2015 and contains 17 interlinked SDGs which aim to stimulate action between 2015 and 2030 in areas deemed critical for humanity and the planet.[62] SDG 14 *Life below water* aims to "conserve and sustainably use the oceans, seas and marine resources for sustainable development."[63] The achievement of SDG 14 is broken down into a subset of targets and indicators, to be met by 2020, including conservation of "at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information".[64] The target element of SDG

[59] CBD Decision X/2 *The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets* CBD/COP/DEC/X/2, 29 October 2010. Available at https://www.cbd.int/decision/cop/?id=12268
[60] Vasilijević, *Transboundary Conservation: A systematic and integrated approach*, 39.
[61] UN General Assembly *Transforming Our World: the 2030 Agenda for Sustainable Development* A/RES/70/1. 25 September 2015.
[62] 2030 Agenda, Preamble.
[63] https://sustainabledevelopment.un.org/sdg14
[64] Target 14.5.

14 is based on Aichi Target 11.[65] The listed indicator for this target is "coverage of protected areas in relation to marine areas",[66] therefore, MPAs are clearly a means of achieving SDG 14.[67] SDG14 is frequently cited as a rationale for MPA designations and has had a significant political impact, filtering down to national and local level policies.[68] A key difference between SDG 14 and Aichi Target 11 is that SDG14 is linked with the concept of sustainable development, which does not view economic growth and conservation in isolation, but rather foresees the integration of environmental protection and economic development.[69]

There is growing consensus among scientists and many governments that the international target of 10 percent is insufficient and that a long-term goal of protecting more than 30 percent of the world's oceans is needed in order to protect biodiversity and maintain marine ecosystem services.[70] Some scientists go further and argue that 50% of the Earth should be protected in order for biodiversity to survive.[71] In 2014, the Sixth World Parks Congress advocated the goal of increasing the area of "effectively managed MPAs in well-connected networks" to 30% by 2030.[72] The current version of the draft text of the post 2020 global biodiversity framework, which aims to renew the targets

[65] Elena Gissi and others, 'Contributions of marine area-based management tools to the UN sustainable development goals' (2022) 330 Journal of Cleaner Production 129910, 2.
[66] Indicator 14.5.1. 4.
[67] See generally Gissi and others, 'Contributions of marine area-based management tools to the UN sustainable development goals'; Julie M Reimer, Rodolphe Devillers and Joachim Claudet, 'Benefits and gaps in area-based management tools for the ocean Sustainable Development Goal' (2021) 4 Nature Sustainability 349.
[68] Humphreys and Clark, 'Chapter 1 - A critical history of marine protected areas', 5.
[69] The 1987 Brundtland Commission Report 'Our Common Future' introduced the concept of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" and linked it to conservation of ecosystems. See Report of the World Commission on Environment and Development (WCED), 'Our Common Future' 10 March 1987, Chapter 2. It has since been fleshed out by subsequent developments in international law including the Rio Declaration (see Principles 3-4) and case law. See further Sands and others, *Principles of international environmental law*, 217-229.
[70] E.g., IUCN-WCPA, *Applying IUCN's Global Conservation Standards to Marine Protected Areas (MPA). Delivering effective conservation action through MPAs, to secure ocean health & sustainable development*; Enric Sala and others, 'Assessing real progress towards effective ocean protection' (2018) 91 Marine Policy 11. The Global Ocean Alliance, led by the UK, has promoted a 30x30 campaign for States to protect 30% of waters by 2030, which has received broad support. See https://www.gov.uk/government/topical-events/global-ocean-alliance-30by30-initiative [Last accessed on 09 September 2022].
[71] See e.g., Edward O Wilson, *Half-earth: our planet's fight for life* (WW Norton & Company 2016).
[72] https://www.worldparkscongress.org/wpc/node/249.

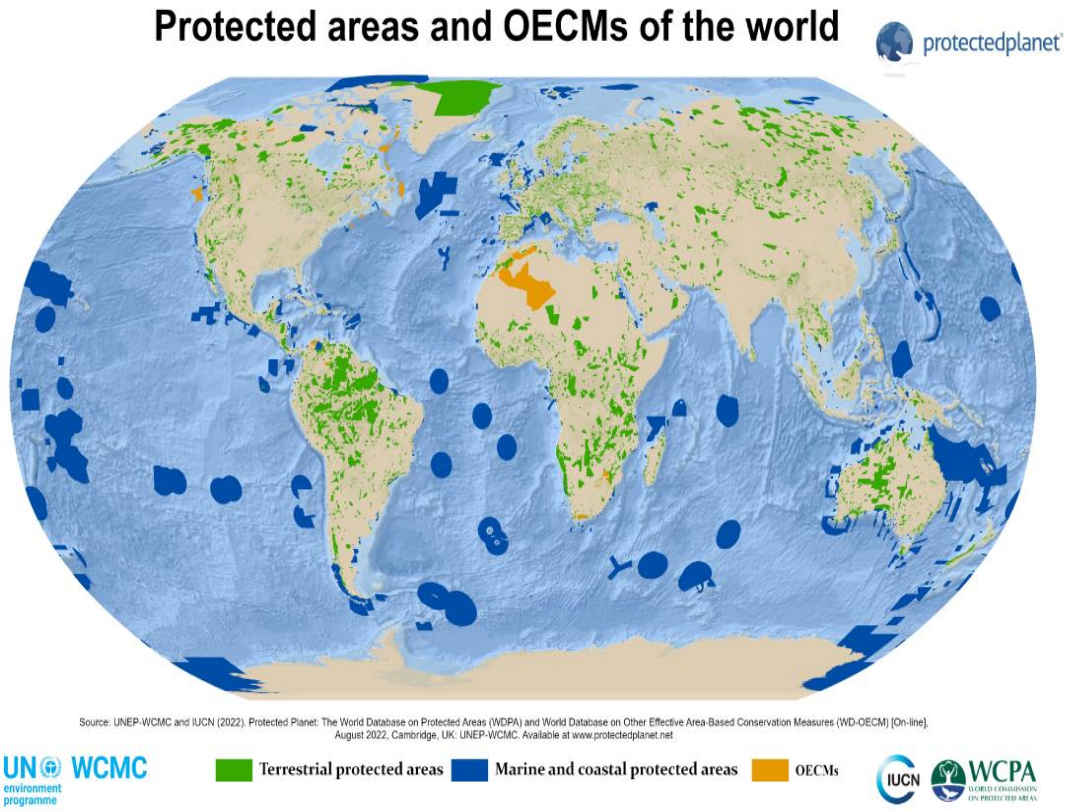
contained in the 2010-2020 Strategic Plan for Biodiversity, increases the global target of protected area coverage from 10% to 30% by 2030.[73]

Several commentators consider that the target approach has been invaluable in accelerating the establishment of MPAs and inspiring action that otherwise would not have been taken.[74] It is a fact that there has been remarkable growth in the number and spatial extent of MPA designations in the last two decades, with an increase of more than 15-fold since the CBD entered into force.[75] For the first time, marine coverage is outpacing that of terrestrial coverage.[76] However, despite recent growth, global coverage overall remains relatively low, and has hovered between 7-8% in recent years. According to 2022 *Protected Planet* figures, global MPA coverage is currently at 8.13%.[77] This figure includes MPAs within national waters and waters beyond national jurisdiction. National waters, which are managed by coastal states up to the limit of the Exclusive Economic Zone (EEZ),[78] represent 39% of the global ocean, 18% of which is covered by MPAs.[79] In areas beyond national jurisdiction (ABNJ), which make up the remaining 61% of the ocean, only 1.4% is protected by MPAs.[80] The main reason for this discrepancy is that there is not yet an international legal framework in place for the

[73] Target 3 of the First Draft of the Post 2020 Global Biodiversity Framework, CBD/WG2020/3/3, 5 July 2021. Available at https://www.cbd.int/conferences/post2020/wg2020-03/documents. [Last accessed 9 September 2022]. The Post 2020 negotiations have been delayed due to the Covid 19 pandemic.
[74] Wells and others, 'Building the future of MPAs – lessons from history', 120.
[75] UNEP-WCMC, IUCN and NGS. *Protected Planet Report 2018*. (Cambridge UK; Gland, Switzerland; and Washington, D.C., USA 2018), 9.
[76] For example, marine coverage jumped from 10.2% to 16.8% in national waters between 2016 and 2018 compared to a slight increase in terrestrial coverage from 14.7% to 14.9% during the same period. See ibid, 5. See also Protected Planet 2020, Chapter Three, available at https://livereport.protectedplanet.net/chapter-3.
[77] https://www.protectedplanet.net/en/thematic-areas/marine-protected-areas [Accessed 5 August 2022]. Protected Planet is the online visual interface of the World Commission on Protected Areas (WCPA) database and since 2012, has issued biennial reports which provide an update of progress towards Aichi Biodiversity Target 11 at the global scale. Protected Planet is a joint initiative of UN Environment and IUCN, which aims to be the most authoritative global platform for protected areas, both terrestrial and marine. See https://www.iucn.org/resources/conservation-tools/protected-planet. The Protected Planet online resource is updated monthly with submissions from governments, non-governmental organizations, landowners and communities. On MPAs, see https://www.protectedplanet.net/en/thematic-areas/marine-protected-areas.
[78] 200 nautical miles from the baseline. On EEZs, see further Chapter Three.
[79] *Protected Planet 2020*, Chapter Three. https://livereport.protectedplanet.net/chapter-3. This figure remains current as of August 2022. For live updates, see https://www.protectedplanet.net/en/thematic-areas/marine-protected-areas.
[80] Ibid.

creation of MPAs in ABNJ.[81] In the meantime, CBD parties have urged States to take individual action to designate appropriate MPAs within their jurisdiction and to cooperate to establish MPAs in ABNJ.[82] The international legal framework for MPAs will be discussed in more detail in Chapter Three.

Figure 2.1. Protected Areas and OECMs 2022[83]



Increasing the size and number of MPAs is now widely seen as a means of meeting the targets cited above. However, it is a subject of debate among scientists as to whether the global figure of 8% amounts to real protection, given that many States designate large

[81] However, negotiations are in progress to create one. See UN General Assembly Resolution on an International legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, A/RES/72/249, 24 December 2017.
[82] CBD Decision X/2 (2010), Annex, Target 11, para 30.
[83] UNEP-WCMC, Protected areas map of the world, August 2022. Available at: www.protectedplanet.net. OECM stands for Other Effective Area Based Conservation Measures. See further Section 3.

areas without corresponding management or enforcement measures.[84] *Protected Planet* has acknowledged that the rapid growth in marine protection is due to several countries declaring very large MPAs.[85] The temptation to create remote, large MPAs is understandable when States are under political pressure to meet undersigned international goals. Such MPAs require little to no management investment and therefore can be set up quickly in order to meet targets.[86] However, the problem with this approach is that such MPAs may not fully represent biodiversity or the full extent of marine ecosystems and their associated services that need protecting.[87] Several authors contend that the application of international targets in a purely numerical and spatial manner is leading to a negative trend towards the creation of remote, very large MPAs which are not actually 'effective, ecologically representative, equitable and well connected', as required by Aichi Target 11.[88] In addition to the issue of remoteness, many recently created MPAs lack management plans, allow many types of extractive activities, and are not enforced or monitored.[89] As a result, some commentators perceive Aichi Target 11 as insufficient to protect areas important for biodiversity and ecosystem services and ensure socio-economic benefits,[90] and describe it as leading to a false sense of accomplishment.[91]

[84] Bárbara Horta e Costa and others, 'A regulation-based classification system for Marine Protected Areas (MPAs)' (2016) 72 Marine Policy 192, 192.
[85] *Protected Planet Report 2018*, 9; *Protected Planet 2020*, Chapter Three.
[86] Tundi Agardy, Joachim Claudet and Jon C Day, ''Dangerous Targets' revisited: Old dangers in new contexts plague marine protected areas' (2016) 26 Aquatic Conservation: Marine and Freshwater Ecosystems 7, 13.
[87] Ibid, 13-14.
[88] See e.g., Elizabeth M. De Santo, 'Missing marine protected area (MPA) targets: How the push for quantity over quality undermines sustainability and social justice' (2013) 124 Journal of Environmental Management 137; Peter JS Jones and Elizabeth M De Santo, 'Viewpoint–Is the race for remote, very large marine protected areas (VLMPAs) taking us down the wrong track?' (2016) 73 Marine Policy 231; Christopher J. Lemieux and others, 'How the race to achieve Aichi Target 11 could jeopardize the effective conservation of biodiversity in Canada and beyond' (2019) 99 Marine Policy 312; Sala and others, 'Assessing real progress towards effective ocean protection'.
[89] Horta e Costa and others, 'A regulation-based classification system for Marine Protected Areas (MPAs)', 192.
[90] Bethan C O'Leary and others, 'Effective coverage targets for ocean protection' (2016) 9 Conservation Letters 398; Daniela Diz and others, 'Mainstreaming marine biodiversity into the SDGs: The role of other effective area-based conservation measures (SDG 14.5)' (2018) 93 Marine Policy 251, 259.
[91] Luiz A. Rocha 'Bigger is not better for Ocean Conservation' New York Times, 20 March 2018. https://www.nytimes.com/2018/03/20/opinion/environment-ocean-conservation.html.

In 2020, the Secretariat of the CBD published the *Global Biodiversity Outlook 5* which assessed progress to date on achieving the Aichi Targets.[92] It found that Target 11 had been partially achieved noting that the areal target was relatively on track, however progress in other areas was limited. Challenges in meeting this target include a bias towards creating protected areas in remote areas rather than on making them ecologically representative and covering areas of importance for biodiversity, a greater focus on terrestrial than on marine areas, limited recognition of the ecosystem approach, limited management effectiveness, a lack of assessment systems for management effectiveness, limited coordination between national agencies, a lack of management and development plans, limited monitoring and surveillance systems, and a lack of financial and human resources.[93] The *Sustainable Development Goals Report 2020,* which presents an overview of progress towards the SDGs also called for more coverage of key biodiversity areas.[94] The conservation of 'areas of particular importance for biodiversity and ecosystem services' is central to Aichi Target 11 yet has been difficult to achieve, with few documented efforts and significant challenges reported in relation to areas of importance for ecosystem services.[95] The current draft text of the post 2020 global biodiversity framework keeps a focus on protecting areas "particularly important for biodiversity".[96] This is in alignment with recent suggestions from scientists that to avoid 'paper parks', it is advisable to focus on establishing MPAs only where they can make a real difference in safeguarding marine life, for example, highly diverse coastal habitats, spawning areas and feeding locales.[97]

2. The Meaning of 'Protected': The Challenge to Define and Categorize MPAs

In order to understand what is required and counted for the purposes of the above-mentioned targets, it is necessary to discuss what the term 'MPA' means and unpack

[92] Secretariat of the Convention on Biological Diversity *Global Biodiversity Outlook 5* (2020), available at www.cbd.int/GBO5.
[93] Ibid, 82.
[94] https://unstats.un.org/sdgs/report/2020/goal-14/
[95] Mark D. Spalding and others, 'Building towards the marine conservation end-game: consolidating the role of MPAs in a future ocean: Consolidating the role of MPAs in a future ocean' (2016) 26 Aquatic Conservation: Marine and Freshwater Ecosystems 185, 192.
[96] Target 2, Update of Zero Draft Post 2020 Global Biodiversity Framework, CBD/POST2020/PREP/2/1, 2 August 2020. Available at https://www.cbd.int/conferences/post2020/post2020-prep-01/documents.
[97] Luiz A. Rocha 'Bigger is not better for Ocean Conservation' New York Times, 20 March 2018.

several elements of Aichi Target 11. An analysis of 'ecologically representative' and 'well-connected' will be carried out in Chapter Four, in the context of a discussion on connectivity and MPA networks.

a. Marine Protected Areas: The Basic Elements

While there is no universally agreed definition, MPAs can be described in simple terms as marine areas that are protected and managed over the long term for the purposes of conservation. Human activities usually need to be restricted at some level within an MPA.[98] They can vary widely in their level of protection, depending on the human pressures at play and the conservation needs of the site to be protected,[99] ranging from 'fully protected' areas, where no extractive activities are permitted, to 'highly protected' where only light extractive activities are allowed, to 'lightly protected' areas where some protection exists but moderate to significant impacts are allowed, to 'minimally protected' areas where extensive extraction and other impacts are allowed while still providing some conservation benefit to the area.[100] 'Multiple use' MPAs may also be divided into different zones, with different levels of activities permitted per zone.[101] As pointed out by Laffoley and others, "the exact combination of benefits derived from any particular MPA will depend on the levels of protection, effectiveness of management, the size of the area under protection, and the length of time the protection has been in place."[102]

MPAs are distinct from other area based management tools (ABMTs), such as those used for fisheries management.[103] ABMTs do not have a universally accepted definition but "include spatial and non-spatial tools that afford a specified area higher protection than its surroundings due to more stringent regulation of one or more or all human

[98] Marta Chantal Ribeiro and EM Olsen, 'Achieving Ecologically Coherent MPA Networks in Europe: Science Needs and Priorities.' Positon Paper 18. (European Marine Board 2013), 10.
[99] Glen Wright, Julien Rochette and Elisabeth Druel, 'Marine protected areas in areas beyond national jurisdiction', in Rayfuse, *Research Handbook on International Marine Environmental Law* (Edward Elgar Publishing 2015), 275.
[100] See further Kirsten Grorud-Colvert and others, 'The MPA Guide: A framework to achieve global goals for the ocean' (2021) 373 Science eabf0861.
[101] On zoning, see further Jon Day and others, 'Guidelines for applying the IUCN protected area management categories to marine protected areas' (IUCN 2019), 28-30.
[102] Laffoley and others, 'Marine protected areas', 552.
[103] Nigel Dudley, *Guidelines for Applying Protected Area Management Categories* (IUCN 2008), 10.

activities."[104] The key difference between MPAs and other area-based protection measures is that whatever form MPAs take, the primary focus must be conservation of biodiversity.[105] It has been suggested that compared with MPAs, which offer a degree of long-term in situ conservation, ABMTs may be more suited to particular sectors and to challenges which require shorter term measures.[106]

i. Design and Designation

There has often been confusion over the meaning of 'designation'. It should be understood as a site that is legally defined by geographic coordinates, not merely named.[107] In terms of design, there remains little consensus among experts on optimal size and design for MPAs.[108] Edgar and others have famously identified five common factors that greatly increase the conservation benefits of MPAs, if they are: 'no take', well enforced, older than 10 years, large (greater than 100 km^2), and isolated by deep water or sand.[109] 'No-take' zones are marine areas where all extractive activities are prohibited, except as necessary for monitoring or research.[110] The ecological benefits of 'no take' protected areas are well documented[111] and they have been described as 'fully protected' MPAs.[112] The vast majority of MPAs are not fully or highly protected, nor were they designed to be; many MPAs are explicitly intended for multiple uses. [113] Studies have shown that while 'partially protected' MPAs may have some benefits over unprotected

[104] Emily Marie Barritt and Jorge E Viñuales, 'Legal Scan: A Conservation Agenda for Biodiversity Beyond National Jurisdictions', *Cambridge Centre for Environment, Energy and Natural Resource Governance, University of Cambridge Working Paper* (2016), 50.
[105] IUCN-WCPA, *Applying IUCN's Global Conservation Standards to Marine Protected Areas (MPA). Delivering effective conservation action through MPAs, to secure ocean health & sustainable development*, 2.
[106] David Johnson, Maria Adelaide Ferreira and Ellen Kenchington, 'Climate change is likely to severely limit the effectiveness of deep-sea ABMTs in the North Atlantic' (2018) 87 Marine Policy 111 and Elizabeth M De Santo, 'Implementation challenges of area-based management tools (ABMTs) for biodiversity beyond national jurisdiction (BBNJ)' (2018) 97 Marine Policy 34.
[107] Jakobsen, *Marine protected areas in international law: An arctic perspective*, 7.
[108] Wells and others, 'Building the future of MPAs – lessons from history', 116.
[109] Graham J Edgar and others, 'Global conservation outcomes depend on marine protected areas with five key features' (2014) 506 Nature 216.
[110] Ribeiro and Olsen, 'Achieving Ecologically Coherent MPA Networks in Europe: Science Needs and Priorities', 51.
[111] E.g., Enric Sala and Sylvaine Giakoumi, 'No-take marine reserves are the most effective protected areas in the ocean' (2018) 75 ICES Journal of Marine Science 1166.
[112] Enric Sala and others, 'Assessing real progress towards effective ocean protection' (2018) 91 Marine Policy 11, 12-13.
[113] Linwood H Pendleton and others, 'Debating the effectiveness of marine protected areas' (2018) 75 ICES Journal of Marine Science 1156, 2.

open access areas,[114] no-take MPAs generally show greater benefits, in terms of increases in biomass density, species richness and size of organisms within their boundaries.[115] Research also backs the view that 'fully protected' MPAs are more likely to support climate resilience[116] and there have been calls for stricter levels of protection for carbon rich ecosystems and for areas of very high biodiversity value, which are more vulnerable to climate change.[117] It has also been demonstrated that 'no take' areas increase the resilience of marine populations to mass mortality caused by extreme climatic events.[118] There is an increasing recognition of the value of 'highly' or 'strictly' protected MPAs, with the EU recently recommending that at least 10% of MPAs should be 'strictly protected',[119] and the UK Government commissioning an independent review into how 'Highly Protected Marine Areas' can be introduced into their waters.[120] An earlier draft of the post 2020 global biodiversity framework text had included a requirement that at least 10% of protected areas should be under 'strict' protection,[121] but later drafts removed it. However, when discussing no take MPAs, it is very important to consider the human dimension. As Ong notes, "as compelling as such evidence for MPA designation might be from a natural science perspective […], other studies that take on a more explicitly 'human/environment' interactional view of the designation of 'no-take' MPAs have arrived at more nuanced and mixed assessments as to their overall

[114] On the effectiveness of partially protected areas, see Mirta Zupan and others, 'Marine partially protected areas: drivers of ecological effectiveness' (2018) 16 Frontiers in ecology and the environment 381.
[115] E.g., Sarah E Lester and Benjamin S Halpern, 'Biological responses in marine no-take reserves versus partially protected areas' (2008) 367 Marine Ecology Progress Series 49.
[116] Amanda E Bates and others, 'Climate resilience in marine protected areas and the 'Protection Paradox'' (2019) 236 Biological Conservation 305; Charlotte Rachael Hopkins, David Mark Bailey and Tavis Potts, 'Perceptions of practitioners: Managing marine protected areas for climate change resilience' (2016) 128 Ocean & Coastal Management 18, 26.
[117] See e.g., European Commission, Commission Staff Working Document, *Criteria and guidance for protected area designations*, SWD (2022) 23 final, 2.
[118] Fiorenza Micheli and others, 'Evidence that marine reserves enhance resilience to climatic impacts' (2012) 7 PloS one e40832 cited in Smith, 'A global network of MPAs: an important tool in addressing climate change' 435.
[119] European Commission *EU Biodiversity Strategy for 2030. Bringing nature back into our lives* COM (2020) 380 final, 4. However, the EU has not yet defined precisely what it means by 'strictly protected' in this context.
[120] Benyon Review into Highly Protected Marine Areas. Final Report. June 2020. Available at https://www.gov.uk/government/publications/highly-protected-marine-areas-hpmas-review-2019.
[121] Target 2 of the Zero Draft of the Post 2020 Global Biodiversity Framework, CBD/WG2020/2/3, 6 January 2020, available at: https://www.cbd.int/conferences/post2020/post2020-prep-01/documents.

benefits."[122] For more discussion on the socio-economic context within which MPA designation occurs, see the next section on management and enforcement, which also deals with equity considerations. It is also important to acknowledge the phenomenon of 'ocean grabbing' in an MPA context, whereby rights and access to marine resources and spaces are reallocated through private or governmental initiatives, including for conservation purposes, which have resulted in small-scale fishers being deprived of resources, the dispossession of vulnerable populations of coastal lands, and/or the undermining of historical access to areas of the sea.[123]

Studies of large scale MPAs have demonstrated their potential to provide added ecological value relative to smaller MPAs by protecting entire ecosystems, particularly offshore habitats, such as the deep sea, seamounts, and pelagic realms.[124] For example, Wilson argues for the protection of large reserves, whether stand alone or connected, as they harbour more ecosystems and diversity of life.[125] In addition, large scale MPAs directly protect highly mobile species such as tunas, billfish, sharks as well as sea turtles, marine mammals, seabirds and other pelagic species, which are often taken as by-catch.[126] Given that large scale MPAs preserve a greater diversity of environmental conditions and larger populations, they are more resilient to climate variation.[127] However they are often not feasible in many parts of the world for socio-economic reasons.[128] Concerns have also been raised regarding the designation of 'residual' MPAs in more remote areas with

[122] David M. Ong, 'Implications of the Chagos Marine Protected Area Arbitral Tribunal Award for the Balance Between Natural Environmental Protection and Traditional Maritime Freedoms', in Stephen Allen & Chris Monaghan (eds.) *50 Years of the British Indian Ocean Territory* (Springer 2018), 267, citing inter alia Rebecca L Gruby and others 2016. 'Toward a social science research agenda for large marine protected areas' (2016) *Conservation Letters* 9 (3): 153-163 and Elizabeth M De Santo, 'Missing marine protected area (MPA) targets: how the push for quantity over quality undermines sustainability and social justice' (2013) *Journal of environmental management* 124: 137-146.
[123] See e.g., Nathan James Bennett, Hugh Govan and Terre Satterfield, 'Ocean Grabbing' (2015) 57 Marine Policy 61.
[124] Patrick Christie and others, 'Why people matter in ocean governance: Incorporating human dimensions into large-scale marine protected areas' (2017) 84 Marine Policy 273, 274.
[125] Wilson, *Half-earth: our planet's fight for life*.
[126] Christie and others, 'Why people matter in ocean governance: Incorporating human dimensions into large-scale marine protected areas', 274.
[127] Bethan C O'Leary and others, 'Addressing criticisms of large-scale marine protected areas' (2018) 68 Bioscience 359.
[128] Smith, 'A global network of MPAs: an important tool in addressing climate change', 434; IUCN-WCPA, *Establishing Marine Protected Area Networks-Making It Happen*, 10.

minimal human activities, thereby essentially not increasing protection to support biodiversity conservation.[129]

The IUCN therefore favours prioritising the creation of MPA networks, which could include a diversity of MPA types and sizes over increasing the size of a few isolated MPAs.[130] Historically, MPAs have been established on an individual *ad hoc* basis, over varying timescales and with different conservation objectives, rather than through a systematic, planned process.[131] However, following developments in the field of terrestrial conservation, the idea of protected area networks took hold as a better strategy to protect and restore marine biodiversity than could be possible with single, isolated MPAs.[132] Now MPA designation is evolving globally from the protection of individual sites to a more holistic design of 'ecologically coherent'[133], 'ecologically representative' and 'well-connected' networks of MPAs based on an ecosystem approach, a process which will be discussed in detail in Chapter Four.

ii. Management and Enforcement

Design and designation are only the beginning of the process. Much of the success of an MPA depends on how well it is managed and enforced.[134] Research has shown that well managed protected areas yield three times the benefits of poorly managed areas.[135] Limitations include political will, financial resources, human education and capacity, the lack of ability of governments to plan and execute integrated cross sectoral programmes and inadequate consideration of social and economic issues, all of which apply equally to developed and developing countries.[136] Insufficient budget for basic management

[129] Rodolphe Devillers and others, 'Residual marine protected areas five years on: Are we still favouring ease of establishment over need for protection?' (2020) 30 Aquatic Conservation 1758.
[130] Jodi Hilty and others, 'Guidelines for conserving connectivity through ecological networks and corridors' Best Practice Protected Area Guidelines Series 30 (IUCN, 2020), 21.
[131] Caitlyn Toropova and others, *Global ocean protection: present status and future possibilities* (IUCN 2010).
[132] Barbara Lausche, David Farrier, Jonathan Verschuuren, Antonio G. M. La Viña, and Charles-Hubert Born Arie Trouwborst, Lawrence Aug, 'The Legal Aspects of Connectivity Conservation. Volume 1 – A Concept Paper' (IUCN 2013), 152.
[133] 'Ecologically coherent' is a term used in Europe, for example by the EU in the Marine Strategy Framework Directive (fn. 50), Article 13(4) and OSPAR (see further Chapter Four, Section 3).
[134] Wells and others, 'Building the future of MPAs – lessons from history', 118.
[135] David A Gill and others, 'Capacity shortfalls hinder the performance of marine protected areas globally' (2017) 543 Nature 665, cited in Laffoley and others, 'Marine protected areas', 552.
[136] Wells and others, 'Building the future of MPAs – lessons from history', 118.

needs and inadequate on-site staff capacity are common themes.[137] Weak enforcement of MPA regulations has also been implicated in poor management effectiveness.[138]

Equity is a key and often neglected component of Aichi Target 11.[139] Equitable management essentially refers to the human dimension of MPAs and the provision of socio-economic benefits. The CBD Secretariat has described equitable management of protected areas in the following terms: "protected areas should […] be established and managed in close collaboration with, and through equitable processes that recognize and respect the rights of indigenous and local communities, and vulnerable populations. These communities should be fully engaged in governing and managing protected areas according to their rights, knowledge, capacities and institutions, should equitably share in the benefits arising from protected areas and should not bear inequitable costs".[140] While this element of Target 11 is difficult to monitor, there is emerging evidence that elements of equity are positively correlated with the success of protected areas in conserving nature.[141] It has been suggested that progressive MPA planning not only focuses on ecological design but on how protected areas will affect environmental and social outcomes.[142]

However, it remains the case that human pressures within MPAs continue to be problematic, in particular fishing and its associated impacts. Questions have been raised about the strength and efficacy of MPAs in which high levels of fishing and destructive bottom trawling occur.[143] Recent research has shown that 94% of existing MPAs allow

[137] Sean L Maxwell and others, 'Area-based conservation in the twenty-first century' (2020) 586 Nature 217, 222.
[138] Ibid.
[139] Spalding and others, 'Building towards the marine conservation end-game: consolidating the role of MPAs in a future ocean: Consolidating the role of MPAs in a future ocean', 190.
[140] CBD Secretariat, Strategic Plan for Biodiversity 2011-2020: Further Information Related to the Technical Rationale for the Aichi Biodiversity Targets, Including Potential Indicators and Milestones. UNEP/CBD/COP/10/INF/12/Rev.1. 14/03/2011.
[141] See further C Klein and others, 'Social equity and the probability of success of biodiversity conservation' (2015) Glob. Environ. Change 35, 299-306 and J Oldekop and others (2016) 'A global assessment of the social and conservation outcomes of protected areas' Conserv. Biol. 30, 133-141.
[142] Agardy, Claudet and Day, ''Dangerous Targets' revisited: Old dangers in new contexts plague marine protected areas', 13.
[143] Sala and others, 'Assessing real progress towards effective ocean protection', 11-13.

fishing activities.[144] In Europe it was found that 59% of MPAs are commercially trawled, leading to a 69% decrease in the abundance of sensitive species in those protected areas.[145] Paradoxically, the authors of this study discovered that average trawling intensity is higher across MPAs than in non-protected areas and conclude that widespread industrial exploitation of MPAs obviously undermines global biodiversity conservation targets.[146] As causation, the study cites the sectoral disconnect between marine conservation and fisheries management in the EU as well as a lack of transparent international MPA standards.[147] Furthermore, of the MPAs studied, 50% did not report a management plan, more than 90% were not classified according to IUCN criteria (see section 2(b)(i) below), and more than 99% had no information on no-take areas.[148]

These findings challenge the assessment of progress towards conservation targets based on area coverage alone.[149] Edgar and others have also shown that global conservation targets constructed in this manner will not optimize protection of marine biodiversity and have argued for more emphasis on better MPA design, durable management and compliance to ensure that MPAs achieve their desired conservation outcomes.[150]

b. Marine Protected Area Definitions: Confusion and Ambiguity

The diversity of MPAs in existence, and the variety of definitions has understandably resulted in confusion amongst stakeholders. As a possible explanation for the lack of homogeneity, Agardy and others[151] suggest that given MPAs can have multiple objectives and various reasons for designation, their definitions are often deliberately vague and open-ended in order to be as flexible and accommodating as possible.[152] For example, the Food and Agriculture Organization of the United Nations (FAO) has adopted a broad

[144] Mark J Costello and Bill Ballantine, 'Biodiversity conservation should focus on no-take Marine Reserves: 94% of Marine Protected Areas allow fishing' (2015) 30 Trends in Ecology & Evolution 507.
[145] Manuel Dureuil and others, 'Elevated trawling inside protected areas undermines conservation outcomes in a global fishing hot spot' (2018) 362 Science 1403.
[146] Ibid.
[147] Ibid, 1405.
[148] Ibid.
[149] Horta e Costa and others, 'A regulation-based classification system for Marine Protected Areas (MPAs)', 192.
[150] Edgar and others, 'Global conservation outcomes depend on marine protected areas with five key features', 216. 6
[151] Agardy, Claudet and Day, ''Dangerous Targets' revisited: Old dangers in new contexts plague marine protected areas', 12.
[152] See also Wright and others, 'Marine protected areas in areas beyond national jurisdiction', 275.

definition, which includes the objectives of biodiversity conservation and fisheries management:

> "Any marine geographical area that is afforded greater protection than the surrounding waters for biodiversity conservation or fisheries management purposes".[153]

It has been suggested that this merely relative standard of protection is meant to accommodate a variety of different types of protected areas rather than provide a comprehensive definition.[154] Sala and others refer to the multiplicity of MPAs as a "catchall bucket" where the term MPA is currently used so loosely that it no longer connotes meaningful protection.[155] Leading scholars agree that the "lingering uncertainty" over what is meant by the term 'MPA' and what constitutes actual protection has played into the controversy surrounding the use of targets.[156] This confusion serves to enable States to claim measures are being taken to protect marine biodiversity when in fact they are not,[157] leading to increasing critique of MPA effectiveness. The IUCN contends that much of the confusion surrounding what counts as an MPA stems from a misunderstanding about the core principles of MPAs, coupled with equating the legal establishment of an area with effective management and governance.[158] This confusion and uncertainty is one of the main reasons why an international system for categorizing protected areas is essential.[159]

The IUCN has done significant work in terms of defining and categorising MPAs and is responsible for one of the most widely accepted and influential MPA definitions in use globally; given that it has provided the foundation for most of the international reporting

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[153] FAO Technical guidelines for responsible fisheries No. 4 suppl.4. Fisheries management and marine protected areas (2011). Available at http://www.fao.org/3/i2090e/i2090e01.pdf
[154] Nele Matz-Lück and Johannes Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?' (2014) 49 Marine Policy 155, 156.
[155] Sala and others, 'Assessing real progress towards effective ocean protection', 12.
[156] Agardy, Claudet and Day, ''Dangerous Targets' revisited: Old dangers in new contexts plague marine protected areas', 12.
[157] Ibid.
[158] IUCN-WCPA, *Applying IUCN's Global Conservation Standards to Marine Protected Areas (MPA). Delivering effective conservation action through MPAs, to secure ocean health & sustainable development.*
[159] Laffoley and others, 'Marine protected areas', 554.

on MPAs.[160] The IUCN definition and others were influenced by the CBD definition of protected area, which applies to both marine and terrestrial sites and is defined in Article 2 of the Convention as:

> "a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives".[161]

In 2004 the Conference of Parties (COP) to the CBD expanded on the broad definition contained in Article 2 and defined an MPA as: "an area within or adjacent to the marine environment, together with its overlying waters and associated flora, fauna, and historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine/and or coastal biodiversity enjoys a higher level of protection than its surroundings."[162] The IUCN also previously utilised a distinct MPA definition as follows: "Any area of intertidal or sub-tidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment",[163] reflecting the general trend to treat MPAs distinctly from their terrestrial counterparts. This distinction was rejected during the negotiations leading up to the 2008 revision during which the importance of having a single classification scheme that covered both terrestrial and marine habitat was underlined.[164] This is particularly important for many coastal protected areas, which contain both terrestrial and marine components.[165] Therefore, the updated 2008 IUCN definition defines a protected area, whether marine or terrestrial as:

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[160] Humphreys and Clark, 'Chapter 1 - A critical history of marine protected areas', 5.
[161] European Commission Report from the Commission to the European Parliament and the Council on the progress in establishing marine protected areas (as required by Article 21 of the Marine Strategy Framework Directive 2008/56/EC) 2015, Annex I, 1.
[162] CBD Decision VII/5.
[163] Graeme Kelleher, *Guidelines for marine protected areas* (IUCN, 1999).
[164] Nigel Dudley and others, 'Defining marine protected areas: A response to Horta e Costa et al' (2017) 77 Marine Policy 191, 191.
[165] Ibid.

> "a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values".[166]

The IUCN has stated that if a marine area does not meet this definition, it should not be considered an MPA.[167] Table 2.1 breaks down selected elements of the above definition and applies them in a marine context.

Table 2.1 IUCN MPA Definition[168]

Definition	Application to Marine Environment
Clearly defined	Implies a spatially defined area with agreed and demarcated borders. This means that MPAs must be mapped and have boundaries that are legally defined.
Geographic Space	Includes land, inland water, marine and coastal areas or a combination. An MPA should have a clear description of the dimensions that are actually protected i.e., airspace above sea surface, water surface, water column, seabed, sub-seabed or a combination.
Recognized	Implies that protection can include a range of governance types e.g., government, shared, private, indigenous, but that such sites should be recognised in some way, for example, through listing on the World Database of Protected Areas (WDPA).
Dedicated	Implies specific binding commitment to conservation in the *long term*, through e.g., international conventions and agreements, national, provincial and local law, customary law, covenants of NGOs, private trusts and company policies, certification schemes.
Managed	Assumes active steps to conserve the natural (and possibly other) values for which the MPA was established.

[166] Dudley, *Guidelines for Applying Protected Area Management Categories*, 8.
[167] Day and others, 'Guidelines for applying the IUCN protected area management categories to marine protected areas' (2019), 14.
[168] This table is a summary of information contained in ibid 14- 16.

Legal or other effective means	MPAs must either be gazetted (recognised under statutory civil law), recognized through an international convention or agreement, or managed through other effective but non-gazetted means, such as recognised traditional rules or the policies of established non-Governmental organizations.
To Achieve	Implies some level of effectiveness, requiring that the MPA be subject to monitoring, reporting and evaluation.

Following efforts to update the MPA definition in 2008, transboundary protected areas have been defined by the IUCN as:

> "a clearly defined geographical space that consists of protected areas that are ecologically connected across one or more international boundaries and involves some form of cooperation".[169]

This definition applies to both terrestrial and marine protected areas and its focus is on ecological connection.[170] The focus on ecological connectivity means that protected areas do not have to be physically contiguous across borders. In this sense it encompasses both adjacent and non-adjacent MPAs. This is an important point for the case studies in Chapters Six and Seven which contain both transboundary MPAs that are not physically contiguous, and adjacent MPAs. The IUCN definition thus allows for two kinds of TBMPA:

- "Two or more contiguous protected areas across international boundary.
- A cluster of protected areas located in two or more countries but separated by areas that are not protected." [171]

It is important to underline that the definition focuses on international rather than sub national boundaries. This is because there are more significant qualitative differences in working across international borders such as different legal systems and institutional frameworks, distinct management systems, as well as different languages and political

[169] Vasilijević, *Transboundary Conservation: A systematic and integrated approach*, xi.
[170] Ibid, 9.
[171] Ibid.

cultures.[172] The IUCN-WCPA uses the generic term 'transboundary conservation area' which encompasses TBMPAs as well as larger transboundary conservation areas, known as 'Transboundary Conservation Seascapes'[173] and 'Transboundary Migration Conservation Areas',[174] which are larger areas encompassing both MPAs and other types of ABMTs (see Chapters Three, Section 3 and Four, Section 3a.)

The current draft text of a new treaty under UNCLOS for the conservation and sustainable use of marine biodiversity beyond national jurisdiction (BBNJ),[175] suggests two options for definitions, both of which encompass ABMTs and MPAs in a single definition. Option A defines an ABMT as follows: "a tool, including a marine protected area, for a geographically defined area through which one or several sectors or activities are managed with the aim of achieving particular conservation and sustainable use objectives in accordance with this Agreement."[176] Option B includes the preceding sentence and adds two sub sections:

> "(a) in the case of marine protected areas, conservation objectives;
>
> (b) in the case of other area-based management tools, conservation objectives or conservation and sustainable use objectives."

It is submitted that Option B is more appropriate given that it distinguishes clearly between ABMTs and MPAs, highlighting that MPAs have a conservation focus. At the most recent round of negotiations, one delegation called for more precise definitions of ABMTs in order to not undermine the mandates of existing organizations.[177] An MPA is

[172] Ibid, 7.
[173] Defined as an "ecologically connected area that sustains ecological processes and crosses one or more international boundaries, and which includes both protected areas and multiple resource use areas, and
involves some form of cooperation." Ibid, xi
[174] Defined as "wildlife habitats in two or more countries that are necessary to sustain populations of migratory species and involve some form of cooperation." Ibid.
[175] Further revised Draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction. Note by the President. Advance, unedited version, 30 May 2022.
[176] Draft Article 1 (3) Use of terms.
[177] IISD, 'Summary of the Fourth Session of the Intergovernmental Conference on an International Legally Binding Instrument under the UN Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biodiversity of Areas Beyond National Jurisdiction: 7-18 March 2022', (2022) 25 Earth Negotiations Bulletin 225, 6.

also defined separately in draft Article 1 of the text as a "geographically defined marine area that is designated and managed to achieve specific [long-term biodiversity] conservation [and sustainable use] objectives."[178]

While some elements of this definition are in line with the CBD and IUCN MPA definitions, for example, the references to geographically defined area, designation, management and achieving conservation objectives, it is concerning that a reference to sustainable use remains, albeit in square brackets, given that a defining feature of MPAs is their conservation focus. The IUCN has recommended its removal.[179] There is no specific reference to TBMPAs, but the draft text does explicitly recognize ecological connectivity in the list of indicative criteria for identification of ABMTs and MPAs,[180] and aims to establish a network of ecologically connected MPAs,[181] elements which would support the establishment of TBMPAs. Hereinafter references to transboundary MPAs in this thesis also include transboundary networks of MPAs, unless otherwise specified.

i. *Categorizing a Marine Protected Area*

In an attempt to achieve a common understanding, the IUCN created six different protected area categories, based on management objectives, known as the *Protected Area Management Categories* system.[182]

- **Category I** Strict protection is subdivided into Ia) Strict nature reserve and Ib) Wilderness area
- **Category II** Ecosystem conservation and protection (i.e., National park)
- **Category III** Conservation of natural features (i.e., Natural monument)
- **Category IV** Conservation through active management (i.e., Habitat/species management area)

[178] Draft Article 1 (12) Use of terms, ibid.
[179] IUCN Commentary on the further revised draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (A/CONF.232/2022/5), 8 August 2022, 10.
[180] Annex I, Further revised draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction. Note by the President. Advance, unedited version, 30 May 2022.
[181] Draft Article 14(b).
[182] Dudley, *Guidelines for Applying Protected Area Management Categories.*

- **Category V** Landscape/seascape conservation and recreation (i.e., Protected landscape/seascape)
- **Category VI** Sustainable use of natural resources (i.e., Managed resource protected area).

The six management categories range from strictly protected to areas managed for the sustainable use and have been recognized by many international organizations (e.g., CBD, UN Regional Seas Programmes) and Governments as the global standard for defining and recording protected areas.[183] Table 2.2 explains how the categories apply in the marine environment.

Table 2.2: Application of IUCN Management Categories to MPAs[184]

	Definition	Primary Objective	Application to marine environment
Ia	Strictly protected areas set aside to protect biodiversity. Human uses strictly controlled.	To conserve outstanding ecosystems, species and/or geodiversity features.	***Strict Nature Reserve*** The objective in these MPAs is preservation of the biodiversity and other values in a strictly protected area. No-take areas/marine reserves are the specific type of MPA that achieves this outcome. They may comprise a whole MPA or be a separate zone within a multiple-use MPA. Any removal of marine species and modification, extraction or collection of marine resources (e.g., through fishing, harvesting, dredging, mining or drilling) is not compatible with this category, with exceptions such as scientific research. Human visitation is limited.
Ib	Typically large unmodified or slightly	To protect the long-term ecological	***Wilderness Area*** Category Ib areas in the marine environment should be sites of

[183] Ibid, Introduction; Laffoley and others, 'Marine protected areas', 556.
[184] This table merges information contained in Dudley, *Guidelines for Applying Protected Area Management Categories;* Jon Day and others, *Guidelines for applying the IUCN protected area management categories to marine protected areas* (IUCN 2012) and Day and others, 'Guidelines for applying the IUCN protected area management categories to marine protected areas' (2019).

	modified areas, retaining their natural character and influence, without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.	integrity of natural areas that are undisturbed by significant human activity.	relatively undisturbed seascape, significantly free of human disturbance, works or facilities and capable of remaining so through effective management.
II	Large natural or near natural areas set aside to protect large-scale ecological processes, along with the species and ecosystems characteristic of the area; compatible spiritual, scientific, educational, recreational and visitor opportunities permitted.	To protect natural biodiversity along with its underlying ecological structure and supporting environmental processes, and to promote education and recreation.	***National Park*** Category II areas present a particular challenge in the marine environment, as they are managed for "ecosystem protection", with provision for visitation, recreational activities and nature tourism. In marine environments, extractive use as a key activity is generally not consistent with the objectives of category II areas.
III	Areas set aside to protect a specific natural monument, which can be a landform, seamount, submarine caverns, geological feature such as a caves or even a living feature such as an ancient	To protect specific outstanding natural features and their associated biodiversity and habitats.	***Natural Monument*** Localized protection of features such as seamounts has an important conservation value, while other marine features may have cultural or recreational value to particular groups, including flooded historical/archaeological landscapes. Category III is likely to be a relatively uncommon designation in marine ecosystems.

	grove. They are generally quite small protected areas and often have high visitor value.		
IV	Protected areas which aim to protect particular species or habitats.	To maintain, conserve and restore species and habitats.	***Habitat/Species Management Area*** Category IV areas in marine environments should play an important role in the protection of nature and the survival of species (incorporating, as appropriate, breeding areas, spawning areas, feeding/foraging areas) or other features essential to the well-being of nationally or locally important flora, or to resident or migratory fauna. Category IV is aimed at protection of particular species or habitats, often with active management intervention (e.g., protection of key benthic habitats from trawling or dredging). Protection regimes aimed at particular species or groups, where other activities are not curtailed, would often be classified as category IV, e.g., whale sanctuaries. Time-limited protection, as in the case of seasonal fishing bans or protection of turtle nesting beaches during the breeding season, might also qualify as category IV.
V	Areas where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic	To protect and sustain important landscapes/ seascapes and the associated nature conservation and other values created by interactions with	***Protected Landscape/Seascape*** Category V protected areas stress the importance of the "interaction of people and nature over time". In a marine situation Category V might most typically be expected to occur in coastal areas.

	value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.	humans through traditional management practices.	
VI	Areas which conserve ecosystems and habitats together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in natural condition, where a proportion is under sustainable natural resource management and where low-level non industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area.	To protect natural ecosystems and use natural resources sustainably, when conservation and sustainable use can be mutually beneficial.	***Managed Resource Protected Area*** MPAs that maintain predominantly natural habitats but allow the sustainable collection of particular elements, such as particular food species or small amounts of coral or shells for the tourist trade.

When applying the categories, the first step is to determine whether a site meets the IUCN

definition of an MPA and then decide on the most suitable category for the site.[185] The IUCN categories classify sites based on the primary stated management objective of the MPA which must apply to at least 75% of the MPA, or a zone within an MPA.[186] The IUCN recognises that other areas within a protected area can be managed for other purposes so long as these are compatible with the primary objective of the protected area.[187] The objectives of MPAs are extremely important as the differences between MPA objectives and the objectives of users of a given area are at the root of many MPA governance challenges.[188] The issue of objectives has proven to be contentious as there is not yet agreement on the terms that capture the objectives of each type of MPA or how exactly a MPA meets its objectives.[189]

In the case of conflict, nature conservation must be the priority. The IUCN has clarified in various guidelines that only those sites whose main goal is nature conservation should be considered MPAs.[190] This is considered to be one of the guiding principles for the use of the definition and categories.[191] Area-based measures where the primary goals are something other than nature conservation, such as sustainable fishing, do not qualify as an MPA.[192] This means that fishing and other extractive activities in MPAs, if appropriate at all, have to have low ecological impact, be sustainable, compatible with the MPA objectives, with the IUCN protected area definition and category, and well managed as part of an integrated approach.[193] Any environmentally damaging industrial or

[185] Dudley, *Guidelines for Applying Protected Area Management Categories*, 8.
[186] A zone within an MPA must be clearly mapped, recognised by legal or other effective means, and have clear management aims that can be assigned to a particular category. Day and others, *Guidelines for applying the IUCN protected area management categories to marine protected areas*, (2012), 9.
[187] Dudley, *Guidelines for Applying Protected Area Management Categories,* 35-36.
[188] Jones, *Governing marine protected areas: resilience through diversity*, 15.
[189] Agardy, Claudet and Day, ''Dangerous Targets' revisited: Old dangers in new contexts plague marine protected areas', 12.
[190] See e.g., Day and others, 'Guidelines for applying the IUCN protected area management categories to marine protected areas' (2019), 8, 10.
[191] See further ibid, 15.
[192] Ibid.
[193] IUCN-WCPA, *Applying IUCN's Global Conservation Standards to Marine Protected Areas (MPA). Delivering effective conservation action through MPAs, to secure ocean health & sustainable development*, 2; Dudley, *Guidelines for Applying Protected Area Management Categories*, 59.

infrastructural activity (e.g. industrial fishing, mining, oil and gas extraction) is not compatible with MPAs.[194]

As stated earlier, the IUCN definition and category system have been embraced at global, regional and national levels. For example, the CBD has recognized the IUCN definition and categories as the basis for defining what an MPA is and the type of management objectives and roles MPAs may entail.[195] For the purposes of compiling its MPA statistics, WCPA encourages States to report only on areas that meet the IUCN or the CBD definitions.[196] Some scholars have explained that the reason the categories have been popular among some international organizations and countries is the practical utility and flexibility of Category V which theoretically allows one to protect and exploit within an area at the same time.[197]

Despite the popularity of the categories among many States and international organizations, they have not been without criticism and the IUCN itself has admitted that application of the categories to MPAs has often been inaccurate and inconsistent.[198] Even though the IUCN has made it clear that the assignment of an MPA to a category should be based on the management objectives of the site, rather than the names of the categories,[199] it revealed in 2012 that about 50% of categorized MPAs have been wrongly allocated because the name of the MPAs had been used to determine the category.[200] Given the multiplicity of MPAs in existence, it is not hard to imagine the confusion generated:

> "Biosphere reserve, buffer zone, conservation area, customary management area, ecological reserve, fish habitat area, fishery closure area, fully protected area,

[194] Ibid. 2.
[195] CBD Decision VII/5, para 10. Diz and others, 'Mainstreaming marine biodiversity into the SDGs: The role of other effective area-based conservation measures (SDG 14.5)', 252.
[196] https://www.protectedplanet.net/en/resources/calculating-protected-area-coverage
[197] Alexander Gillespie, 'Science, Values and People: The Three Factors that Will Define the Next Generation of International Conservation Agreements' (2012) 1 Transnational Environmental Law 169, 172; Jones, *Governing marine protected areas: resilience through diversity*, 42.
[198] Day and others, *Guidelines for applying the IUCN protected area management categories to marine protected areas* (2012), 11.
[199] Dudley, *Guidelines for Applying Protected Area Management Categories*, 10-11.
[200] Day and others, *Guidelines for applying the IUCN protected area management categories to marine protected areas* (2012), 11.

> general use zone, habitat management area, habitat protection zone, historic shipwreck, managed resource protected area, marine and coastal protected area, marine conservation area, marine management area, marine monument, marine park, marine refugia, marine reserve, marine sanctuary, marine wilderness area, multiple use area, no-take area/zone, preservation zone, protected seascape, remote natural area, replenishment area/reserve, sanctuary, sanctuary zone, scientific reference area, scientific research area, seascape protection zone, sensitive sea area, special purpose area/zone, species management area, strict nature reserve, strictly protected area."[201]

Moreover, names or titles of MPAs may mean different things in different countries. For example, in Kenya 'marine reserves' have a multiple use approach while in neighbouring Tanzania 'marine reserves' are strictly no-take.[202] The complexity of MPA nomenclature has been attributed to various national and supranational governmental organisations setting up MPAs based on many different legislative instruments and variations over time in the nature of MPA aims and restrictions, and use of terminology.[203] In addition to the misguided use of names to categorize MPAs, confusion has also arisen when sites have been incorrectly assigned on the basis of activities that occur rather than using the stated management objectives.[204] Furthermore, where protected areas include both land and sea, the objectives for the marine component of the protected area are often not considered when assigning the site's category.[205] These problems have been attributed to inexperience in dealing with MPAs given the dominance of terrestrial protected areas at the time.[206] Many of the denominations listed above derive from terrestrial protected area types, which were established before equivalent marine sites existed.[207] Supplementary guidelines have since been issued on how to apply IUCN guidance specifically to

[201] Ibid, 19; Laffoley and others, 'Marine protected areas', 553.
[202] Ibid.
[203] Humphreys and Clark, 'Chapter 1 - A critical history of marine protected areas', 4.
[204] Day and others, *Guidelines for applying the IUCN protected area management categories to marine protected areas* (2012), 19.
[205] Ibid.
[206] Ibid, 11.
[207] Humphreys and Clark, 'Chapter 1 - A critical history of marine protected areas', 4.

MPAs.[208] The IUCN has acknowledged that inconsistencies in the application and reporting of the categories were reducing the efficacy and use of the system as a global classification scheme.[209]

Horta e Costa and others argue that the IUCN MPA category system is problematic for several reasons:[210]

- The main objectives are often vaguely mentioned in management plans.
- There is too large a variability within categories; meaning the system does not capture the many kinds of regulations within MPAs, which may be inconsistent with the stated objectives, thus misinterpretations are likely to occur.
- Many MPAs are multipurpose and contain different zones with different rules which are not being effectively differentiated by the current IUCN system.

The authors maintain that better reporting which reduces uncertainty is urgently needed if progress towards ocean conservation targets is to be based on an accurate understanding of what is effectively being protected. As an alternative they suggest a different kind of classification system based on the impacts of allowed uses.[211] The creators of the IUCN category system accept that the current system has weaknesses but believe that introducing a different approach for MPAs now would create more confusion in the global policy arena.[212] They counterargue that problems arose due to misunderstanding of the categories rather than inherent problems with the system itself and claim that governments have been reluctant to invest in understanding and describing their systems of protected areas, which has led to mis-categorization of protected areas.[213] They also cite political reasons as a factor, claiming that many States are eager to demonstrate that

[208] Day and others, *Guidelines for applying the IUCN protected area management categories to marine protected areas*, in 2012, which were updated in 2019 by Day and others, 'Guidelines for applying the IUCN protected area management categories to marine protected areas'.
[209] Day and others, *Guidelines for applying the IUCN protected area management categories to marine protected areas* (2012), 11.
[210] Horta e Costa and others, 'A regulation-based classification system for Marine Protected Areas (MPAs)', 193.
[211] See further http://www.classifympas.org/en/. This is one of a series of attempts to provide new approaches to classifying MPAs. See also Dalal Al-Abdulrazzak and Stephen C Trombulak, 'Classifying levels of protection in Marine Protected Areas' (2012) 36 Marine policy 576.
[212] Dudley and others, 'Defining marine protected areas: A response to Horta e Costa et al', 191-192.
[213] Ibid, 192.

they have highly protected systems of MPAs irrespective of the activities that occur within them.[214]

In sum, while the IUCN classification is not universally accepted, it has been endorsed by a large majority of international organizations and national governments. It is therefore preferrable to many States to work on improving the current system rather than create a new one. In an EU context, it has been recommended to maintain the use of the IUCN categories, given their widespread acceptance globally, but with slight modifications to better suit the specific requirements of the EU MPA network.[215] It may be the case that the EU wishes to continue with the use of the IUCN categories due to the lack of clarity on what counts as an MPA in an EU context. The term MPA has not been defined in EU law, rather 'Special Areas of Conservation' and 'Special Protection Areas', as defined under the Birds and Habitats Directives, continue to dominate.[216] Humphreys and Clark acknowledge the administrative value of the category system for MPA reporting purposes but consider them outdated in light of developments in thinking such as the ecosystem approach.[217] Given the additional complexities brought about by TBMPAs, it is submitted that efforts to streamline, modernize and simplify the category system would be beneficial.

ii. Quality Matters: MPA Effectiveness

Aichi Target 11 and the IUCN definition require that MPAs be 'effective', which essentially means that MPAs should make a difference on the water.[218] However many sites which are not managed effectively continue to be included in global tabulations. Inclusion in these databases has mostly been based on intended outcomes of designations.[219] Substantial discrepancies continue to exist over how to count an area as

[214] Ibid.
[215] Deltares *Proposal for an assessment method of the ecological coherence of networks of marine protected areas in Europe*, (2015) 2065339, 13.
[216] See Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992) and Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version). Originally published as Council Directive 79/409/EEC of 2 April 1979 on the Conservation of Wild Birds.
[217] Humphreys and Clark, 'Chapter 1 - A critical history of marine protected areas', 4.
[218] Spalding and others, 'Building towards the marine conservation end-game: consolidating the role of MPAs in a future ocean: Consolidating the role of MPAs in a future ocean', 189.
[219] Ibid.

'protected',[220] and there remains no international obligation to verify the performance of MPAs.[221] The official primary source for global marine and terrestrial protected coverage statistics is the World Database on Protected Areas (WDPA), a joint project of IUCN and UNEP.[222] IUCN describes it as "the most comprehensive global database on terrestrial and marine protected areas based on data that has been compiled since 1981 working with governments and NGOs."[223] The WDPA collects self-reported MPA information from individual countries and utilizes this data to generate global and regional statistics.[224] When compiling its statistics, the WCPA encourages States to report only on areas that meet the IUCN or the CBD definitions.[225] Despite this, many of the MPAs counted in their statistics do not meet the IUCN definition[226] and the statistics provided by the WDPA have been criticized as an inaccurate reflection of 'protection'. As explained above in Section 2.a, MPAs exist on a continuum with various levels of protection possible. However, WDPA numbers do not differentiate between the varying protection levels among reported MPAs.[227] Neither do they indicate the stated conservation objectives of the site, its design features, the coverage of biodiversity or provision of ecosystem services, the level to which sites are being effectively or equitably managed or the efficacy of such sites in achieving their conservation objectives.[228] Spalding and others have opined that if spatial targets continue to dominate the vision for ocean conservation, then a more comprehensive suite of indicators needs to be applied which are specific to the realities and requirements for different elements of biodiversity and ecosystem service conservation objectives.[229]

In 2018, several leading scientists claimed that WDPA numbers were overestimated and reflected a merging of three distinct stages in the process of creating a protected area:

[220] Grorud-Colvert and others, 'The MPA Guide: A framework to achieve global goals for the ocean', 1.
[221] Humphreys and Clark, 'Chapter 1 - A critical history of marine protected areas', 7.
[222] https://www.iucn.org/resources/conservation-tools/protected-planet
[223] Ibid.
[224] https://marine-conservation.org/on-the-tide/2020-is-here-will-we-meet-global-conservation-targets-for-marine-protected-areas/
[225] https://www.protectedplanet.net/en/resources/calculating-protected-area-coverage
[226] Grorud-Colvert and others, 'The MPA Guide: A framework to achieve global goals for the ocean', 1.
[227] https://marine-conservation.org/on-the-tide/2020-is-here-will-we-meet-global-conservation-targets-for-marine-protected-areas/
[228] Spalding and others, 'Building towards the marine conservation end-game: consolidating the role of MPAs in a future ocean: Consolidating the role of MPAs in a future ocean', 186.
[229] Ibid, 196.

announcement of an intent or commitment to create an MPA, legal designation of an MPA and actual implementation of an MPA.[230] Sala and others suggest that a more accurate approach would be to count only the final stage as 'protection' given that merely designating an MPA on a map does not guarantee implementation of the changes needed for real protection to take place.[231] In reality, the process of fully implementing an MPA's regulatory structure, designing and implementing management plans and ensuring adequate monitoring and enforcement can take many years after designation.[232]

In order to clarify some of the confusion surrounding what actually counts as an MPA, IUCN and partners developed *The MPA Guide* in 2019 (see Table 2.3), which has been described as a "science based, policy relevant framework to categorize, evaluate and plan MPAs" which aims to complement the IUCN categories and assist with the MPA reporting framework of the WDPA.[233] It focuses on separating out the different stages of establishment and varying levels of protection into clear and distinct categories, aspects which are absent in the IUCN Category system.

Table 2.3: The MPA Guide[234]

MPA Establishment	
Proposed	The intent to create an MPA is made public.
Designated	An MPA is recognized via statutory instrument or other legal means and now exists 'on paper'.
Implemented	An MPA transitions from 'on paper' to being operational on the water with management in place to ensure compliance and enforcement.
Actively Managed	Ongoing monitoring, evaluation, adaptive management and enforcement.

[230] Sala and others, 'Assessing real progress towards effective ocean protection', 12. However, according to information provided by the WDPA in 2021, *proposed* protected areas are not counted in their coverage analysis. https://www.protectedplanet.net/en/resources/calculating-protected-area-coverage. Last updated 17 May 2021. [Accessed 10 September 2022]
[231] Ibid.
[232] https://marine-conservation.org/on-the-tide/2020-is-here-will-we-meet-global-conservation-targets-for-marine-protected-areas/
[233] Grorud-Colvert and others, 'The MPA Guide: A framework to achieve global goals for the ocean', 2.
[234] Table adapted from The MPA Guide (2019), available at https://www.protectedplanet.net/en/resources/mpa-guide.

Level of Protection	
Fully protected	No extractive or destructive activities allowed, and all impacts minimized.
Highly protected	Only light extractive activities are allowed, and other impacts minimized to extent possible.
Lightly protected	Some protection exists but moderate to significant extraction and impacts allowed.
Minimally protected	Extensive extraction and other impacts are allowed while still providing some conservation benefit to the area.

Spalding and others cite two main reasons for MPA ineffectiveness: inadequacy of design and failure of implementation.[235] In order to improve the effectiveness of MPAs, the IUCN has also recommended that MPAs meet the following standards: have a conservation focus with nature as the priority, have defined goals and objectives which reflect nature conservation values, be of a suitable size, location and design that will enable conservation of values, have a defined and agreed-upon boundary, have a management plan or equivalent which addresses the conservation needs of the site, and the resources and capacity to implement.[236]

3. Other Effective Area-Based Conservation Measures (OECMs)

Perhaps adding to the confusion and complexity surrounding what counts as an MPA, the CBD introduced the notion of 'other effective area-based conservation measures' (OECMs) in Aichi Target 11. The purpose of this addition was to enable the inclusion of sites that are often not accounted for in the national databases, but which have significant

[235] Spalding and others, 'Building towards the marine conservation end-game: consolidating the role of MPAs in a future ocean: Consolidating the role of MPAs in a future ocean', 189.
[236] Day and others, 'Guidelines for applying the IUCN protected area management categories to marine protected areas' (2019), 8.

biodiversity value, such as traditionally owned and managed areas or fisheries reserves.[237] OECMs were only formally defined in 2018, therefore limited information is available about their extent.[238] They have been defined as "a geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in-situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio–economic, and other locally relevant values." [239] Technical and scientific guidance on identification of OECMs was issued by State parties to the CBD in 2018,[240] and declares that OECMs that fulfil the identification criteria listed in the guidance contribute to both quantitative (i.e., the 10% coverage element) and qualitative elements (i.e., representativity, coverage of areas important for biodiversity, connectivity and integration in wider landscapes and seascapes, management effectiveness and equity) of Aichi Biodiversity Target 11.[241]

OECMs have been described as complementary to protected areas and as contributing to the coherence, connectivity and strengthening of protected area networks (see further Chapter Four).[242] 'Sustainable' human activities are permitted but there must be a clear benefit to biodiversity conservation. [243] As IUCN guidance puts it, OCEMs may be managed for many different objectives but they must deliver effective conservation.[244] Areas that may be included as an OECM include private, local, community managed or non-statutory protected areas, areas where protection levels are increased for biodiversity conservation or resource management, such as Locally Managed Marine Areas[245] and

[237] Spalding and others, 'Building towards the marine conservation end-game: consolidating the role of MPAs in a future ocean: Consolidating the role of MPAs in a future ocean', 187.
[238] Secretariat of the Convention on Biological Diversity *Global Biodiversity Outlook 5*, 191. See also https://www.protectedplanet.net/en/thematic-areas/oecms?tab=OECMs
[239] CBD Decision 14/8, para. 2, available at https://www.cbd.int/doc/decisions/cop-14/cop-14-dec-08-en.pdf
[240] Ibid, Annex III.
[241] Ibid, Annex III, C. 2. (a), 14.
[242] Ibid, Annex III, A. (b), 10.
[243] Ibid, Annex III, A. (c), 10.
[244] IUCN-WCPA, 'Guidelines for recognising and reporting other effective area-based conservation measures' (2019).
[245] See further https://lmmanetwork.org/

areas of 'incidental' or 'de facto' conservation benefits, such as military areas and renewable energy sites.[246]

OECMs should not be viewed as a replacement for MPAs that qualify under Target 11, rather they should complement or contribute to these MPA networks.[247] Fears have been raised that by including OECMs in MPA networks, they could be used to 'game' the system by States seeking to claim success rather than achieve real conservation.[248] In 2019, the World Database on Other Effective Area-based Conservation Measures (WD-OECM) was established by UNEP to compile and report data on OECMs and the 2020 *Protected Planet* report was the first to include data on OECMs in addition to protected areas.[249] They are not yet being counted towards MPA targets at EU level due to lack of guidance,[250] however they are likely to play an important role at the global level going forward as State parties move to increase MPA targets and coverage. As of 2022, *Protected Planet* figures claim there are a total of 194 marine OECMs globally, covering 0.09% of the ocean.[251]

4. Managing the Complexities of Transboundary MPAs: A Soft or Hard Approach?

This Chapter has set out the general conceptual framework for MPAs in order to lay the groundwork for the rest of the thesis, which will explore the evolution of MPAs from individual sites to transboundary networks across international jurisdictions and associated legal challenges. While the development of MPAs in a transboundary direction is a necessary evolution in line with an ecosystem approach to marine management (see Chapter Four), and will certainly assist States in meeting their obligations under global targets - given the greater percentage of area covered by

[246] Diz and others, 'Mainstreaming marine biodiversity into the SDGs: The role of other effective area-based conservation measures (SDG 14.5)', 252.
[247] Ibid.
[248] Spalding and others, 'Building towards the marine conservation end-game: consolidating the role of MPAs in a future ocean: Consolidating the role of MPAs in a future ocean', 187-188; Lemieux and others, 'How the race to achieve Aichi Target 11 could jeopardize the effective conservation of biodiversity in Canada and beyond'; Humphreys and Clark, 'Chapter 1 - A critical history of marine protected areas', 8.
[249] Chapter Two, *Protected Planet 2020*. https://livereport.protectedplanet.net/chapter-2
[250] Sabrina Agnesi and others, 'Spatial analysis of marine protected area networks in Europe's seas III' (2020) 3 ETC/ICM Technical Report 40.
[251] https://www.protectedplanet.net/en/thematic-areas/oecms?tab=OECMs. [Accessed 5 August 2022].

TBMPAs and the added element of connectivity - it is submitted that the basic elements of MPA designation and management, as outlined in this chapter, need to be achieved to a satisfactory level before embarking on such a complex task requiring a significant level of harmonization across national jurisdictions.

According to some authors, the success of transboundary protected areas on land demonstrates their institutional feasibility and provides examples of successful implementation.[252] However, designating a protected area in the marine environment is a much more daunting task than on land. The challenges of undertaking direct observations in many parts of the marine environment, such as the deep sea, mean that knowledge about the ocean remains incomplete. Furthermore, the dynamic, interconnected and three-dimensional nature of the marine environment[253] adds a significant layer of complexity when it comes to demarcating boundaries and protecting species on the move.[254] As mentioned in Section 2(ii)(b) of this chapter on definitions, TBMPAs do not need to be physically contiguous across borders due to the concept of ecological connectivity. They may be both adjacent and non-adjacent. Bearing this in mind, we can deduce three types or categories of TBMPAs which need to be considered in terms of their legal implications for other uses of the seas.

i) TBMPAs that lie across two adjoining (200-nm) EEZs or more, whether adjacent or non-adjacent;

ii) TBMPAs that span across an EEZ & the High Seas; whether adjacent or non-adjacent

iii) TBMPAs that lie across at least two adjoining EEZs as well as the High Seas beyond them, whether adjacent or non-adjacent.

The case study in Chapter Seven falls under (i) while Chapter Six falls under (iii). This chapter has attempted to illustrate the range of challenges surrounding the use of MPAs

[252] Christopher Costello and Renato Molina, 'Transboundary marine protected areas' (2021) 65 Resource and Energy Economics 101239, 2.
[253] Noam Levin, Salit Kark and Roberto Danovaro, 'Adding the third dimension to marine conservation' (2018) 11 Conservation Letters e12408. On connectivity, see further Chapter Four.
[254] Malin L Pinsky and others, 'Preparing ocean governance for species on the move' (2018) 360 Science 1189

as a conservation management tool, which naturally become more complicated in a transboundary context. As noted by Humphreys and Clark, the defining attributes of MPAs have legal and political consequences.[255] For example, the lack of a uniform definition for MPAs has been cited as a potential hurdle to effective conservation as it may hamper the establishment and execution of legal authority for the creation or expansion of MPAs.[256] The CBD and IUCN MPA definitions, which are the most widely accepted, both contain the following common elements:

- boundaries must be clearly defined, and
- the marine area must be legally recognized and effectively managed.

In order to have an effective transboundary MPA or network of MPAs across international boundaries, there would naturally need to be some level of coherence across these elements in each State. This is where specific legal challenges begin to arise. There are differences in national legal and administrative systems, varying national commitments to marine conservation, and differences in ratification of international protocols or conventions that need to be considered.[257] In practical terms, in order to establish and manage a TBMPA, it would be necessary to identify commonalities and differences between the different State legal systems in relation to the specific requirements of the TBMPA (e.g., laws on bycatch, illegal fishing), and have a forum to facilitate the harmonization of key divergent legal and institutional responses. These difficulties are exacerbated when we consider the different rules and regulations concerning establishment and management of MPAs in different maritime zones, which will be explained in the next chapter.

Sections 1 and 2 of this Chapter demonstrated how MPAs have been recognized across multiple international policy processes such as the Earth Summits, UN General Assembly Resolutions and the 2030 Agenda for Sustainable Development. Section 3 discussed attempts to define, categorize and standardize MPAs, as well as efforts to improve their

[255] Humphreys and Clark, 'Chapter 1 - A critical history of marine protected areas', 5.
[256] Environmental Law Institute *Legal Tools for Strengthening Marine Protected Area Enforcement* 2016, 12.
[257] Unger, *Managing Across Boundaries: The Dogger Bank-a Future International Protected Area*, 35, cited in Techera, 'Marine protected areas: Contemporary challenges and developments', 167.

effectiveness. While this work is significant and influential, it must be highlighted that it is non-binding in nature. This is not necessarily a negative, in fact soft law is increasingly supplanting formal international law in many policy arenas, including ocean governance.[258] For example, even though the Rio Declaration and Agenda 21 are not legally binding, they have helped to guide State action.[259] Similarly, UNGA resolutions have been said to have played an influential role in the development of international measures for the conservation of marine biodiversity and ecosystems.[260] Even the work of the CBD COP in developing the global spatial protection targets via Decisions is of a relatively 'soft' law nature. [261] Despite this, it has had significant impact in shaping the policy and legal processes around MPAs. According to Wells and others, the targets and principles established by the CBD in 2004 had a significant impact on the scale of work on protected areas, both terrestrial and marine, with numerous countries and regions developing their own national targets and adopting systematic conservation planning approaches to facilitate the development of ecologically representative systems.[262]

While there is no universally accepted definition of 'soft law', Shelton describes it as "any international instrument other than a treaty that contains principles, norms, standards, or other statements of expected behaviour".[263] By avoiding the slow pace and difficult compromises that must be made to achieve binding commitments, non-binding alternatives allow for a broader engagement across State and non-State actors and have been described as "more agile and flexible in responding to emerging issues or problems too pressing to wait for a formal consensus."[264] It is for this reason perhaps that soft law is considered particularly useful in the context of transboundary governance, where competing sovereign interests can delay the negotiation of intergovernmental

[258] Hugh Kirkman and Peter Mackelworth, 'Defining approaches to the management of large marine systems' in Mackelworth *Marine transboundary conservation and protected areas* (Routledge 2016), 39 citing Harold Hongju Koh, 'Twenty-First-Century International Lawmaking' (2012) 101 Geo LJ 725. See also Dinah Shelton, 'Normative Hierarchy in International Law' (2006) 100 The American journal of international law 291, 319.
[259] Tanaka, *The International Law of the Sea*, 406.
[260] Sands and others, *Principles of international environmental law*, 550.
[261] Matthieu Wemaere and others, 'What legal options for the international agreement on biodiversity in 2020? A first look at the possibilities' (2018) IDDRI, *Issue Brief* N°12/18, 3.
[262] Wells and others, 'Building the future of MPAs – lessons from history', 111.
[263] Shelton, 'Normative Hierarchy in International Law', 319.
[264] Michelle Voyer and others, 'The role of voluntary commitments in realizing the promise of the Blue Economy' (2021) 71 Global Environmental Change 102372, 5.

agreements.[265] Given that non-binding mechanisms can be designed in a more inclusive and aspirational manner, they often capture the imagination of citizens and NGO groups who frequently cite soft law to apply pressure on governments.[266] For example, the purpose of the *Strategic Plan for Biodiversity 2011-2020* explicitly aims to "inspire broad-based action by all parties and stakeholders." [267] The process of soft law formation and its compliance mechanisms, such as regular reporting and meetings of parties, can be useful to facilitate knowledge exchange, generate technical guidance and provide evidence for the impact of the non-binding agreement on a particular policy issue.[268] Soft law compliance mechanisms often mimic those used in treaties,[269] therefore it is not hard to see how soft law can help with consensus building and legal grounding, thus paving the way for an eventual binding agreement. Shelton has also outlined how soft law has been used as evidence for emerging norms of customary international law.[270] It is particularly useful for emerging concepts, which may not yet have sufficient political consensus or scientific justification, thus challenging the legal certainty required by 'hard' law mechanisms. As will be seen in Chapter Four, this has been the case with the development of nebulous concepts such as the ecosystem approach, which have crossed over from ecology to law. In a sense, soft law enables a new concept or perspective to be tested or "tamed" [271] before being admitted to general international law.

Despite its many advantages, soft law is not the answer to all problems faced by international environmental agreements, and in some cases, it can be contradictory and lack coordination with existing legal commitments.[272] In the case of the CBD for example, Morgera and Tsioumani have argued that the interpretation of the Convention and the overall coherence of the various instruments adopted by the COP have been

[265] Ibid.
[266] Kirkman and Mackelworth, 'Defining approaches to the management of large marine systems', 29.
[267] CBD Decision X/2, Annex, para. 1.
[268] Kirkman and Mackelworth, 'Defining approaches to the management of large marine systems', 40.
[269] Shelton, 'Normative Hierarchy in International Law', 319.
[270] Ibid, 320-321.
[271] Pierre-Marie Dupuy and Jorge E. Viñuales, *International environmental law* (Cambridge University Press 2015), 58.
[272] Kirkman and Mackelworth, 'Defining approaches to the management of large marine systems', 40 citing Shiro Hori, 'The Evolution of International Environmental Regimes: Responding to the Difficulty of Effective Implementation in Developing Countries' (2015) 25 The Waseda Journal of Social Sciences 113.

obscured by the "convoluted, repetitious and disorderly" drafting of COP Decisions.[273] Soft law also lacks enforcement mechanisms and is sometimes employed as a means of politically pressuring dissenting States into agreement.[274] Shelton argues that the reality of international law making is more complex than a binary division between soft and hard law.[275] She refers to a "dynamic interplay" between soft and hard obligations, whereby soft law is often a precursor or a supplement to hard law.[276] This may well be the case in the Eastern Tropical Pacific (Chapter Seven), whereby after nearly two decades of soft law, States have now committed to exploring options for a legally binding treaty to underpin the marine corridor. In fact, as will be seen throughout this thesis, there are various examples whereby soft law offers State parties a means to clarify ambiguities in a binding text or fill gaps. As is especially evident in the field of ocean governance, the international system has become increasingly fragmented and complex, with a multitude of rulemaking instruments and regimes at play (see Chapters Three-Five). Shelton notes the rise in popularity of the Memorandum of Understanding (MoU) as a common form of undertaking in intergovernmental cooperative arrangements[277] as a means to possibly "circumvent […] political constraints, economic costs, and legal rigidities that often are associated with formal and legally binding treaties".[278] The wide use of the MoU can be observed in both Chapters Six and Seven, in particular with regard to engagement and compliance efforts with third parties in the region.

Sounding a positive note, Shelton argues that the considerable recourse to and compliance with non-binding norms may represent a maturing of the international system, reflecting the realities of a more complex, globalized world where not all expectations between States need to be formalized in legal instruments.[279] Scott has observed a trend of

[273] Elisa Morgera and Elsa Tsioumani, 'Yesterday, Today, and Tomorrow: Looking Afresh at the Convention on Biological Diversity' (2010) 21 Yearbook of International Environmental Law 3, 6.
[274] Kirkman and Mackelworth, 'Defining approaches to the management of large marine systems', 40 citing Gregory C Shaffer and Mark A Pollack, 'Hard vs. soft law: Alternatives, complements, and antagonists in international governance' (2009) 94 Minn L Rev 706.
[275] Shelton, 'Normative Hierarchy in International Law', 320-321.
[276] Ibid, 320.
[277] For example, the Convention on the Conservation of Migratory Species of Wild Animals (1979) 1651 UNTS 333, discussed in Chapter Three. See also examples furnished in the case studies in Chapters Six and Seven.
[278] Shelton, 'Normative Hierarchy in International Law', 320 citing Douglas M Johnston, Consent and Commitment in the World Community (1997), xxxiv.
[279] Ibid, 322.

increasing and *deliberate* blurring of the distinction between soft and hard law in the field of international environmental law, which is particularly apparent in the influential nature of the Aichi targets and the SDGs.[280]

It could be argued that the complexity and myriad of cross border challenges involved in TBMPAs warrant a legally binding agreement over a soft law mechanism to create certainty and a real sense of accountability. Many of the legal difficulties inherent in establishing and managing TBMPAs have rarely been discussed in the context of global MPA targets apart from general references to the need for cooperation. On the other hand, given the increasing pace of transboundary activity in some parts of the world (see e.g., Chapter Seven), which in some cases is overtaking existing governance arrangements, one could argue that a dynamic and more flexible response is required which is more likely to occur via soft law. Bearing in mind the above discussion, the next Chapter will examine the existing legally binding instruments in international law for the establishment of MPAs and specifically assess whether they provide supportive and enabling conditions for the establishment of transboundary MPAs across international jurisdictions.

[280] Karen N Scott, 'The dynamic evolution of international environmental law' (2018) 49 Victoria University of Wellington Law Review 607, 618.

Chapter Three: The International Legal Framework for Marine Protected Areas: A Challenge for Transboundary Marine Conservation

1. Fragmentation of the International Legal Framework for Marine Biodiversity Protection

The processes, institutions and laws which govern the oceans have been described as "chronically fragmented".[1] The vast typology of marine protected areas (MPAs) in national, regional and global instruments is illustrative of this (see Chapter Two, Section 2(b)(i)). As will be demonstrated in this chapter, the conservation of marine biodiversity is addressed by a number of international treaties to different degrees using a diverse, often complementary but at times conflicting range of approaches.[2] Under the current international legal framework for the protection of marine biodiversity, jurisdictional responsibility is allocated either to coastal States or to a complex, incoherent array of international treaty regimes.[3] At the national level, marine governance regimes are unfortunately also characterized by "high levels of sector specific, uncoordinated institutional fragmentation"[4] while in areas beyond national jurisdiction (ABNJ) the situation is even more challenging with sectoral fragmentation "compounded by substantive inadequacy and regulatory ineffectiveness."[5]

It has generally been accepted that governance, regulatory and substantive gaps hinder the ability of these regimes to adequately address both existing and emerging threats to marine biodiversity, including the impacts of climate change.[6] For example, the 2019

[1] Mara Ntona and Elisa Morgera, 'Connecting SDG 14 with the other Sustainable Development Goals through marine spatial planning' (2018) 93 Marine Policy 214, 215.
[2] Daniela Diz, 'Marine biodiversity: Unravelling the intricacies of global frameworks and applicable concepts' in Razzaque J and Morgera E (eds.) *Biodiversity and Nature Protection* (Edgar Encyclopedia of Environmental Law, Volume III, 2017), 125.
[3] Rosemary Rayfuse, 'Climate change, marine biodiversity and international law' in Bowman M, Davies PGG and Goodwin EJ (eds.) *Research Handbook on Biodiversity and Law* (Edward Elgar Publishing 2016), 129.
[4] Ibid, 125.
[5] Ibid.
[6] E.g., ibid and Kristina M Gjerde and others, 'Regulatory and governance gaps in the international regime for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction' (IUCN 2008).

IPCC *Special Report on the Ocean and Cryosphere*[7] specifically pointed out that governance arrangements are too fragmented across administrative boundaries and sectors to provide integrated responses to the increasing risks from climate related changes to the ocean.[8] Sands and others underline the need for a "connecting thread" to be woven through all previously disconnected areas of regulation, which could help to overcome some of the initial fragmentation created by UNCLOS.[9] Efforts have begun at the regional level, as will be discussed in Chapter Five, but challenges remain.

The transformation of ocean ecosystems as a result of human activities poses significant challenges for the existing international ocean governance framework. As Rayfuse observes, these regimes were designed for "more biologically stable conditions" and are generally considered to be insufficient to support the resilience of marine ecosystems in an increasingly dynamic environment.[10] The transboundary nature of stressors such as climate change and pollution and the migratory nature of many marine species means that the impact of many activities carried out by one State within its own jurisdiction can have implications for many other States.[11] In a context where the ocean has been recognized as "a complex set of systems that are all interconnected",[12] individual action by States is clearly not enough to address the protection of marine biodiversity.[13] The paradox facing ocean governance is that biologically the oceans are an ecosystem, or a series of interlocking ecosystems, but legally, as described in this chapter, they have been divided into arbitrary jurisdictional zones, which ecological processes do not respect.[14] This

[7] Hans-Otto Pörtner and others, 'IPCC special report on the ocean and cryosphere in a changing climate' Intergovernmental Panel on Climate Change (IPCC 2019).
[8] Ibid, para. C1.2, 34.
[9] Philippe Sands and others, *Principles of international environmental law* (Fourth edn, Cambridge University Press 2018), 556.
[10] Rayfuse, 'Climate change, marine biodiversity and international law', 124.
[11] James Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment* (First edn, Oxford University Press 2017), 2.
[12] The First Global Integrated Marine Assessment (United Nations World Ocean Assessment I), UN Doc. A/70/112, 22 July 2015, Summary, 9.
[13] Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, 2.
[14] Patricia W. Birnie, Alan E. Boyle and Catherine Redgwell, *International law and the environment* (3rd edn, Oxford University Press 2009), 704; UNEP-WCMC, *Marine connectivity across jurisdictional boundaries: An introduction.* (UN Environment World Conservation Monitoring Centre 2018), 1.

divergence between the law and nature is a serious deficiency in the traditional zonal management approach to ocean governance.[15]

The first United Nations *World Ocean Assessment*, published in 2016, has described the development of ocean management as progressing from "no regulation to the regulation of specific impacts, to the regulation of sector-wide impacts and, finally, to regulation taking account of aspects of all relevant sectors."[16] The ongoing degradation of ecosystems has forced an acknowledgement of the limitations of traditional zonal, sectoral and species-specific approaches to marine environmental protection, leading to a push for holistic governance alternatives which emphasise connectivity, integration and cooperation.[17] Despite these developments at the conceptual level, fragmentation of the international legal framework for ocean governance continues to be an ongoing problem for management of the oceans in practice.[18]

Fragmentation not only affects management of the oceans but has been a feature of international law and its offshoots, such as international environmental law, for some time.[19] According to the International Law Commission (ILC), fragmentation of international law emerged in conjunction with the 'functional differentiation' feature of late international modernity and globalisation, which led to increasing specialization of

[15] Yoshifumi Tanaka, *The international law of the sea* (Second edn, Cambridge University Press 2015), 4.
[16] The First Global Integrated Marine Assessment, 9. For commentary see Karen Evans and others, 'The global integrated world ocean assessment: linking observations to science and policy across multiple scales' (2019) 6 Frontiers in Marine Science 298. The second World Ocean Assessment was published in April 2021. https://www.un.org/regularprocess/woa2launch
[17] See, *inter alia*, Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, 13; Arie Trouwborst, 'The Precautionary Principle and the Ecosystem Approach in International Law: Differences, Similarities and Linkages' (2009) 18 Review of European Community & International Environmental Law 26; Yoshifumi Tanaka, 'Zonal and Integrated Management Approaches to Ocean Governance: Reflections on a Dual Approach in International Law of the Sea' (2004) 19 The International Journal of Marine and Coastal Law 483; GESAMP *A Sea of Troubles*, GESAMP Report and Studies No. 70 (2001), 3.
[18] Catherine Blanchard, Carole Durussel and Ben Boteler, 'Socio-ecological resilience and the law: Exploring the adaptive capacity of the BBNJ agreement' (2019) 108 Marine Policy 103612, 6.
[19] On fragmentation see, *inter alia*, International Law Commission, *Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law*, UN Doc A/CN.4/L.682 (13 April 2006); Martti Koskenniemi and Päivi Leino, 'Fragmentation of International Law? Postmodern Anxieties' (2002) 15 Leiden Journal of International Law 553; Timo Pankakoski and Antto Vihma, 'Fragmentation in International Law and Global Governance: A Conceptual Inquiry' (2017) 12 Contributions to the History of Concepts 22; Karen N. Scott, 'International environmental governance : managing fragmentation through institutional connection' (2011) 12 Melbourne Journal of International Law 177.

parts of society and consequently autonomous spheres of social action and structure.[20] This was accompanied by the "emergence of specialized and (relatively) autonomous rules or rule-complexes, legal institutions and spheres of legal practice."[21] What was once governed by 'general international law' has now become the subject of a specialized legal regime such as 'law of the sea' or 'international environmental law' or 'international biodiversity law', each possessing their own principles and institutions.[22] The fragmentation of the law through creation of new instruments and structures is not inherently negative; it illustrates a willingness to address specific issues[23] and a "responsiveness of legal imagination to social change".[24] Therefore it could be argued that fragmentation is a symptom of the success of international law.[25] For example, in the context of international environmental law, fragmentation has been described by the ILC as evidence of increasing concern for the state of the environment.[26] It becomes a problem, however, when these instruments and structures do not communicate and evolve in parallel,[27] as has been the case with the development of the scientific understanding of ecosystems, marine biodiversity, ecological connectivity and the slow pace of legal evolution in step with these developments. Usually such specialized law-making and institution-building has tended to take place with relative ignorance of developments in adjoining fields and of the general principles and practices of international law.[28] The result is conflicts between rules or rule-systems, deviating institutional practices and potentially the loss of an overall perspective on the law.[29]

[20] International Law Commission, *Fragmentation of International Law*, 11.
[21] Ibid.
[22] Ibid.
[23] Blanchard, Durussel and Boteler, 'Socio-ecological resilience and the law: Exploring the adaptive capacity of the BBNJ agreement', 6.
[24] Koskenniemi and Leino, 'Fragmentation of International Law? Postmodern Anxieties', 575.
[25] Owen McIntyre, 'Convergence in international environmental and natural resources law' (2022) Environmental Policy and Law 1, 3; See also Georges Abi-Saab, 'Fragmentation or unification: some concluding remarks' (1998) 31 NYUJ Int'l L & Pol 919.
[26] International Law Commission, *Fragmentation of International Law*,14.
[27] Blanchard, Durussel and Boteler, 'Socio-ecological resilience and the law: Exploring the adaptive capacity of the BBNJ agreement', 6.
[28] International Law Commission, *Fragmentation of International Law*, 11.
[29] Ibid.

Therefore, rather than bringing different sectors together, fragmentation emphasizes isolation and disconnection between legal regimes and institutions.[30] This is particularly apparent in the field of international environmental law, which has been described as "a complex regulatory field comprising multiple regimes and institutions giving rise to overlapping and, occasionally, conflicting legal and policy mandates."[31] It is a field which has been particularly affected by 'treaty congestion'[32] in the wake of the 1972 Stockholm Conference.[33] Caddell suggests that these practical difficulties are largely down to the inherent nature of international environmental law making, which "is often the product of disparate political motivations, pressures on certain valued natural resources, regulatory reactions to specific events, and the catalyzing effect of periodic inter-governmental processes to establish overarching global goals."[34] Fragmentation has now become an accepted feature of international law. Rather than focus on eliminating it, lawyers and policymakers are now concentrating on managing the consequences and risks as well as developing solutions and methods for maximising opportunities arising from it.[35]

McIntyre notes, for example, how the phenomenon of 'convergence' is occurring to counteract the threat of fragmentation.[36] This process of convergence can be observed in the ongoing elaboration of international environmental law, whereby different sub-fields

[30] Froukje Maria Platjouw, *Environmental law and the ecosystem approach: maintaining ecological integrity through consistency in law* (Routledge 2016), 100; Scott, 'International environmental governance : managing fragmentation through institutional connection', 177.
[31] Scott, 'International environmental governance : managing fragmentation through institutional connection', 178.
[32] See further Bethany Lukitsch Hicks, 'Treaty congestion in international environmental law: the need for greater international coordination' (1998) 32 U Rich L Rev 1643 at 1646.
[33] Richard Caddell, 'The Integration of Multilateral Environmental Agreements: Lessons from the Biodiversity-Related Conventions' (2011) 22 Yearbook of International Environmental Law 37, 37. The 1972 Stockholm Conference on the Human Environment led to a flurry of legislative activity in the subsequent decades.
[34] Ibid.
[35] See further Scott, 'International environmental governance : managing fragmentation through institutional connection', 181-182.
[36] McIntyre, 'Convergence in international environmental and natural resources law', 2. On convergence see also Mads Andenas, 'Reassertion and transformation: from fragmentation to convergence in international law' (2015) 46 Georgetown journal of international law 685; Matthew Craven, 'Unity Diversity and the Fragmentation of International Law', (2002) XIII *Finnish Yearbook of International* Law 1-31 and James Crawford, *Chance, Order, Change: The Course of International Law* (Hague Academy of International Law, General Course on Public International Law, 2014).

borrow normative forms and approaches from each other,[37] in a range of processes characterized by Cassese as involving "interpenetration and cross-fertilization".[38] A relevant example for the purposes of this work is the influence of the CBD on subsequent conservation agreements, which is highlighted at various instances throughout this thesis.[39] According to McIntyre, the phenomenon of convergence represents a maturing of international environmental law and a "process of normative consolidation" which largely address the concerns around fragmentation.[40] Therefore, it could be argued that despite the pervasive nature of fragmentation, the systemic nature of international law is not breaking down, due to the counteractive influence of convergence.[41] However, convergence, and its various forms and drivers, is much less studied than the concept of fragmentation. The work of the ILC and the International Court of Justice (ICJ) has been identified as facilitating normative convergence between different fields and regimes, a result of which Crawford has claimed that fragmentation poses "no real threat to international law as a system."[42] Another process contributing to convergence which is readily found in international law is that of 'systemic integration', a basic principle of international law and a fundamental component of the general rule of treaty interpretation.[43] This principle essentially requires the incorporation of a "sense of coherence and meaningfulness" into the process of legal reasoning, and involves interpreting international obligations by reference to their normative environment, taking into account the general principles of international law.[44] In the context of coordinating the conflicting legal regimes applicable to the same maritime area, Pineshi cites it as one of the most useful means for this endeavour.[45]

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[37] Ibid.
[38] Antonio Cassese, *International Law* (Oxford University Press 2001), 45.
[39] For further discussion see Scott, 'The dynamic evolution of international environmental law', 622.
[40] McIntyre, 'Convergence in international environmental and natural resources law', 2.
[41] Ibid, 2-3.
[42] James Crawford, *Chance, Order, Change: The Course of International Law* (Hague Academy of International Law, General Course on Public International Law, 2014), 291.
[43] Articulated in Article 31 (3) (c) of the Vienna Convention on the Law of Treaties (1969) 1155 *UNTS* 331.
[44] International Law Commission, *Fragmentation of International Law*, 208-209; 211. On systemic integration, see further, Campbell McLachlan, 'The principle of systemic integration and Article 31 (3)(c) of the Vienna Convention' (2005) 54 International & Comparative Law Quarterly 279.
[45] Laura Pineshi, 'Inter legality and the protection of Marine Ecosystems' in Jan Klabbers and Gianluigi Palombella, *The Challenge of Inter-legality* (Cambridge University Press 2019), 190.

Integration of the various processes, agencies and institutions of disparate regimes is also often cited as a means to counter the negative impact of fragmentation in ocean governance, yet precise methods for achieving this remain the subject of much debate and academic literature[46] and it is still unclear as to how it is supposed to operate in practice. Integration as a concept in international law first emerged in the context of sustainable development, requiring the integration of environmental, economic and social objectives.[47] In fact the 'principle of integration'[48] has been described as a core legal element of the concept of sustainable development.[49] The dictionary definition of integration is "the act of combining or adding parts to make a unified whole".[50] It is often understood as a procedural requirement.[51] For example, the United Nations (UN) has encouraged the development of formal cooperative arrangements or other institutional links between multi-lateral environmental agreements (MEAs) and their respective treaty bodies as a means of moving towards integration, however the ILC has observed that *systematic* institutional integration and compliance with environmental commitments are far from certain.[52] This is where convergence come in, which arguably has a more systematic effect.

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[46] See for example Scott, 'International environmental governance : managing fragmentation through institutional connection', Caddell, 'The Integration of Multilateral Environmental Agreements: Lessons from the Biodiversity-Related Conventions', Virginie Barral and Pierre-Marie Dupuy, *Principle 4: Sustainable development through integration* (Oxford University Press 2015).

[47] ILA, Committee on International Law on Sustainable Development, Resolution 07/12, and ILA Resolution 3/2002, annex as published as UN Doc. A/57/329, New Delhi Declaration of Principles of International Law Relating to Sustainable Development. Cited in Christina Voigt, 'The principle of sustainable development: integration and ecological integrity' in Christina Voigt (ed), *Rule of law for nature: new dimensions and ideas in environmental law* (Cambridge University Press 2013), 147-148. It is also an important element of European Union environmental law and is articulated in Article 11 of the Treaty on the Functioning of the European Union (TFEU) as follows "Environmental protection requirements must be integrated into the definition and implementation of the Union policies and activities, in particular with a view to promoting sustainable development". See further Ludwig Krämer, 'Giving a voice to the environment by challenging the practice of integrating environmental requirements into other EU policies', *European Perspectives on Environmental Law and Governance* (Routledge 2013).

[48] First described as a general principle of international law in *Iron Rhine Railway case* (PCA 2005, Belgium v Netherlands), para. 59. For discussion, see Barral and Dupuy, *Principle 4: Sustainable development through integration*, 13-14; 18-19.

[49] Sands and others, *Principles of international environmental law*, 218.

[50] Collins English Dictionary online. https://www.collinsdictionary.com/dictionary/english/integration. Accessed on 4 October 2019.

[51] Voigt, 'The principle of sustainable development: integration and ecological integrity', 147.

[52] International Law Commission, *Fragmentation of International Law*, 189.

In the field of ocean governance, integration has been deemed necessary to enable cross-sectoral cooperation, cooperation across scales, and to help develop and strengthen coalitions.[53] Voigt warns that integration must also have substance beyond the procedural context and needs to happen within a proper framework for decision-making, i.e., the rule of law, and be aligned with an overarching goal of achieving ecosystem integrity, otherwise it risks being meaningless.[54] Barral and Dupuy also distinguish between "substantive integration" and "institutional integration", with the former dealing with levels of decision making, norm creation and application.[55]

Convergence is an observed phenomenon occurring in international law through the efforts of the ICJ and ILC, among others, while it is submitted that integration is a more active process, at least in the context of sustainable development. Therefore, it could be argued that the processes of integration and convergence are complementary and necessary for moving towards the 'whole ocean' approach advocated by the IPCC and others in order to improve cooperation and linkages across ongoing global climate, biodiversity and sustainability regimes, a course of action deemed essential for tackling the triple crises of biodiversity loss, climate change and pollution facing the oceans.[56]

The next section will analyse the international legal framework for MPAs in light of the discussion on fragmentation, integration and convergence above. Section 4 will discuss the significant challenges that the phenomenon of fragmentation, in particular, poses for the establishment of transboundary MPAs (TBMPAs). This will be followed in Chapter Four by an exploration of an integrative solution, the ecosystem approach, which provides a conceptual framework for integrative action in ocean governance. Chapter Five will

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[53] Blanchard, Durussel and Boteler, 'Socio-ecological resilience and the law: Exploring the adaptive capacity of the BBNJ agreement', 6.
[54] Voigt, 'The principle of sustainable development: integration and ecological integrity', 147.
[55] Barral and Dupuy, *Principle 4: Sustainable development through integration*, 10.
[56] IPCC, 'The Ocean', in Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, 1655, 1711 cited in Rayfuse, 'Climate change, marine biodiversity and international law', 129; Carole Martinez, Christophe Lefebvre and Dorothée Herr, 'Strengthening the relationship between Marine Protected Areas and ocean protection and measures to deliver climate change adaptation and mitigation' in Simard, *Marine Protected Areas and climate change: Adaptation and mitigation synergies, opportunities and challenges*; Arie Trouwborst, 'Countering fragmentation of habitats under international wildlife regimes'; Dan Laffoley and others, 'Eight urgent, fundamental and simultaneous steps needed to restore ocean health, and the consequences for humanity and the planet of inaction or delay' (2020) Aquatic Conservation: Marine and Freshwater Ecosystems 30 (1): 194-208.

then analyse the duty to cooperate at the regional level and the opportunities it provides to ameliorate the effects of fragmentation. Finally, Chapters Six and Seven provide empirical examples of regional cooperation that attempt to achieve a certain level of integration and coherence in ocean governance via the establishment and management of TBMPAs.

2. The Legal Basis for MPAs in International Law

In his seminal work on the law of the sea, Tanaka observes that conservation of biological diversity attracted little attention in international law until after World War II.[57] Customary international law contains few rules on the subject, in light of the dearth of State practice, therefore international treaties are the primary source.[58] With regard to the protection of spaces, it has found legal expression in primarily two main ways: via a 'top down' approach and a 'bottom up' approach.[59] The 'top down' approach through which States undertake treaty obligations that they must fulfil by adopting domestic laws is the most common.[60]

The principal points of reference when seeking a legal basis for the establishment of MPAs are the United Nations Convention on the Law of the Sea (UNCLOS)[61] and the Convention on Biological Diversity (CBD).[62] These instruments do not explicitly mention transboundary MPAs (TBMPAs), however, given that they provide the primary legal framework for MPAs, it follows that they also contain the foundational legal basis to support establishment of TBMPAs.[63] UNCLOS and the CBD are complemented by a suite of regional governance mechanisms including Regional Seas Conventions, created under the auspices of the Regional Seas Programme, which provide a legal basis for

[57] Yoshifumi Tanaka, *The International Law of the Sea* (3 edn, Cambridge University Press 2019), 406.
[58] Ibid.
[59] The 'bottom up' approach involves engaging with different groups of stakeholders likely to be affected by the problem at hand to elaborate strategies. It is operationalized through participatory mechanisms that allow stakeholder groups to express their views and take part in the decision-making process. Pierre-Marie Dupuy and Jorge E. Viñuales, *International environmental law* (Cambridge University Press 2015), 172-173. It is less common that the 'top down' approach but is increasing in popularity.
[60] Ibid, 173.
[61] United Nations Convention on the Law of the Sea (1982) 1833 UNTS 397.
[62] Convention on Biological Diversity (1992) 1760 UNTS 79.
[63] José Guerreiro and others, 'The role of international environmental instruments in enhancing transboundary marine protected areas: An approach in East Africa' (2011) 35 Marine Policy 95, 101.

MPAs in a regional setting (Section 2.c) and other 'MPA related concepts' in international law (Section 3).

a. United Nations Convention on the Law of the Sea

UNCLOS, adopted in 1982, provides the overarching legal framework for the governance of the oceans and is considered the most important instrument in the modern law of the sea.[64] It took ten years to negotiate and today is binding on 168 States.[65] Many of its provisions are widely accepted as reflecting customary international law,[66] and it is often referred to as the 'Constitution for the Oceans'.[67] In relation to the protection of biodiversity however, UNCLOS must be viewed as a product of its time. Less was known about the extent of marine biodiversity and modern, science-based approaches to ocean management such as ecosystem-based management were just beginning to emerge and gain acceptance. Therefore, UNCLOS promotes a zonal and sectoral approach to ocean governance and contains no specific references to marine biodiversity or MPAs in its text. Rather it contains several general obligations pertaining to the protection of the marine environment.

The protection of the marine environment is explicitly listed as one of the objectives of UNCLOS in its Preamble and Part XII of the Convention deals explicitly with the 'protection and preservation of the marine environment' but in a general and framework manner. Within Part XII, Article 192 contains a general obligation for States to "protect and preserve the marine environment." This principle is broadly formulated and could potentially include all types of harm to the environment.[68] Article 194 deals with

[64] James Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment* (First edn, Oxford University Press 2017), 17.
[65] http://www.un.org/depts/los/reference_files/chronological_lists_of_ratifications.htm. Page last updated on 13 May 2022. Accessed 15 August 2022.
[66] Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, 17.
[67] See remarks of Tommy B. Koh, President of the Third United Nations Conference on Law of the Sea http://www.un.org/Depts/los/convention_agreements/texts/koh_english.pdf.
[68] This principle applies to all States and activities. See Southern Bluefin Tuna (Australia and New Zealand v. Japan), 39 ILM 1359 (2000), 4 August 2002.

measures to prevent, reduce and control pollution of the marine environment,[69] with Article 194(5) stating that:

> "The measures taken in accordance with this Part shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life".

Apart from these general obligations, UNCLOS contains no explicit provisions requiring coastal States to conserve marine biodiversity within waters under their jurisdiction or beyond and as a consequence the traditional zonal management approach continues to apply.[70] Perhaps in an attempt to overcome such delimitations, Article 197 of UNCLOS requires States to cooperate on a global or regional basis for the protection and preservation of the marine environment. It is submitted that a duty to cooperate to establish MPAs can be inferred from this provision. The duty to cooperate will be discussed in more detail in Chapter Five, section 2, with specific case studies on regional cooperation contained in Chapters Six and Seven.

Judicial interpretation of Part XII has served to shed some light on the application of these provisions beyond the restrictive context of pollution. For example, in the *Chagos Marine Protected Area* case, the Arbitral Tribunal held that Part XII is "not limited to measures aimed strictly at controlling marine pollution"[71] and clarified that Article 194 "extends to measures focused primarily on conservation and the preservation of ecosystems".[72] It has been suggested that the reasoning in the *Chagos* case implies a recognition of protected areas as a means to comply with the general obligation to protect the environment contained in Part XII.[73] In the *South China Sea Arbitration*[74] it was confirmed that Part

[69] In the same vein of pollution prevention, Article 196(1) places an obligation on States to prevent the introduction of alien species into the marine environment.
[70] Yoshifumi Tanaka, *The international law of the sea* (Second edn, Cambridge University Press 2015), 338-340.
[71] *Chagos Marine Protected Area Arbitration* (Mauritius v. United Kingdom), PCA Case number 2011–03, Final Award of 18 March 2015, para. 320.
[72] Ibid, para 538.
[73] Tore Henriksen, *Challenges of Integrating Newer Environmental Law into Law of the Sea*, Presentation given at Workshop Tendencies in Legal Approaches and Instruments for the Protection of Ecological Systems, 25-26 October 2018, Aarhus University, Denmark; see also Philippe Sands and others, *Principles of international environmental law*, 463.
[74] The South China Sea Arbitration (The Republic of Philippines v. The People's Republic of China), PCA Case 2013–19, Final Award of 12 July 2016.

XII extends beyond marine pollution to the conservation of living resources and the protection of fragile ecosystems.[75] It also confirmed that the Convention on the Conservation of Migratory Species of Wild Animals (CMS)[76] and other international agreements inform the interpretation and application of UNCLOS.[77]

i. UNCLOS Maritime Zones and Competence to Designate MPAs

Under UNCLOS, the oceans have been divided into different zones, which are essentially geo-political divisions and do not correspond with ecological boundaries. The first great divide is between areas under national jurisdiction, which are under individual State control, and areas beyond national jurisdiction (ABNJ), which are managed collectively as a 'global commons' under a complex array of international treaty regimes, reflecting different sectors and interests, such as fisheries, shipping, seabed mining and conservation.

1. Areas under National Jurisdiction

UNCLOS permits coastal States to establish different maritime zones under their national jurisdiction, each with different jurisdictional rights. These maritime zones are drawn from a 'baseline', which is normally fixed at the Low Water Mark.[78] As will be demonstrated below, States may establish MPAs in waters under their national jurisdiction, but each maritime zone presents different management challenges and a balancing of the legitimate freedoms and rights of States in terms of other uses of the sea.

Internal Waters are waters on the landward side of the baseline of the territorial sea.[79] They are subject to the legal regime of State sovereignty and governed by the rules of the coastal State's legal system, unencumbered by the rights of other States.[80] In sum, the coastal State can make laws, regulate uses and use any resource in this zone.[81] Therefore

[75] Ibid, para. 956.
[76] Convention on the Conservation of Migratory Species of Wild Animals (1979) 1651 UNTS 333.
[77] *Philippines v China*, para 959.
[78] Article 5 UNCLOS. See also Coalter Lathrop, 'Baselines', in Donald Rothwell and others, *The Oxford handbook of the law of the sea* (First edn, Oxford University Press 2015), 73.
[79] Article 8 UNCLOS.
[80] Lathrop *Baselines*, in Rothwell and others, *The Oxford handbook of the law of the sea*, 70
[81] Marine Protected Area Advisory Group, *Expanding Ireland's Marine Protected Area Network: A report by the Marine Protected Area Advisory Group.* Report for the Department of Housing, Local Government and Heritage, Ireland (2020), 37.

the State is free to establish MPAs in accordance with its own national legal system in this zone.

Territorial Seas are waters which extend up to 12 nautical miles (nm) from the seaward limit of internal waters, which is determined by a baseline from which the territorial sea is measured.[82] They fall under State sovereignty subject to the right of innocent passage of ships.[83] There is no explicit provision in UNCLOS to conserve marine biodiversity in waters under territorial sovereignty, therefore coastal States may designate MPAs within their territorial seas as part of their sovereign rights and regulate all human activities therein that may threaten biological diversity.[84] However, the right of innocent passage does limit to a certain extent the coastal State's competence to prescribe and enforce regulations with regard to the passage of foreign vessels through MPAs located in a territorial sea.[85]

The **Contiguous Zone** extends a further 12 nm from the territorial sea.[86] A coastal State can continue to enforce laws in relation to customs, taxation, immigration, and pollution in this zone.[87]

The **Exclusive Economic Zone (EEZ)** extends from the outer limit of the territorial sea (12nm) to 200 nm from the baseline.[88] It is a zone that must be claimed by a coastal State and within which the coastal State has sole exploitation rights over all natural resources.[89] In the EEZ, other States may enjoy the freedoms of navigation and overflight, and the laying of submarine cables and pipelines, subject to the regulation of the coastal State.[90] In terms of explicit provisions in UNCLOS concerning conservation of marine biological diversity in the EEZ, Article 61(2) provides for the conservation and management of all

[82] Article 3 UNCLOS; Tanaka, *The International Law of the Sea*, (2019), 95.
[83] Article 17 UNCLOS.
[84] Ingvild Ulrikke Jakobsen, *Marine protected areas in international law: An arctic perspective* (Brill 2016), 22.
[85] For a more detailed discussion on innocent passage and its impact on MPAs, see ibid, 22-34.
[86] Article 33 UNCLOS.
[87] Marine Protected Area Advisory Group, *Expanding Ireland's Marine Protected Area Network: A report by the Marine Protected Area Advisory Group,* 37; Tanaka, *The International Law of the Sea,* (2019), 145.
[88] Article 57 UNCLOS.
[89] Article 56(1) UNCLOS; Marine Protected Area Advisory Group, Expanding Ireland's Marine Protected Area Network: A report by the Marine Protected Area Advisory Group, 37.
[90] Article 58 UNCLOS.

living resources of the EEZ, as follows: "The coastal State, taking into account the best scientific evidence available to it, shall ensure through proper conservation and management measures that the maintenance of the living resources in the exclusive economic zone is not endangered by over-exploitation." Articles 63 and 64 of UNCLOS deal with straddling fish stocks occurring in the EEZs of two or more coastal States, and highly migratory species. In this regard, States are obliged to coordinate either directly or through appropriate regional and/or international organisations to ensure the conservation of such stocks and species.[91] Again we see here the creation of a duty to cooperate to conserve marine biological diversity, which will be elaborated upon further in Chapter 5, Section 2(a).

A coastal State may designate MPAs within its EEZ, with the limitation that it must have 'due regard' to the rights and duties of other States.[92] In the *Chagos* Arbitration, where Mauritius claimed, *inter alia*, that the MPA established by the UK government surrounding the Chagos archipelago (which is claimed by Mauritius) in the Indian Ocean had been designated without sufficient consultation with the Mauritius government, the Tribunal found unanimously that Articles 2(3)[93] and 56(2) of UNCLOS, required the United Kingdom to have due regard for Mauritian rights and to act in good faith with respect to its undertakings to Mauritius, in compliance with Article 300[94] of UNCLOS and the rules of general international law.[95] The Tribunal found that the meaning of 'due regard' for the rights of another State in this context will depend on the circumstances and nature of those rights but it declined to find any universal rule of conduct or uniform obligation.[96] Proper implementation of 'due regard' requires a balancing of the rights and

[91] Articles 63 and 64 UNCLOS.
[92] Article 56(2) UNCLOS states that "In exercising its rights and performing its duties under this Convention in the exclusive economic zone, the coastal State shall have due regard to the rights and duties of other States and shall act in a manner compatible with the provisions of this Convention."
[93] Article 2(3) UNCLOS states that "The sovereignty over the territorial sea is exercised subject to this Convention and to other rules of international law."
[94] Article 300 UNCLOS states that "States Parties shall fulfil in good faith the obligations assumed under this Convention and shall exercise the rights, jurisdiction and freedoms recognized in this Convention in a manner which would not constitute an abuse of right."
[95] For a more detailed discussion, see David Ong, 'Implications of the Chagos Marine Protected Area Arbitral Tribunal Award for the balance between natural environmental protection and traditional maritime freedoms' in S Allen and C Monaghan (eds.) *Fifty Years of the British Indian Ocean Territory: Legal Perspectives* (Springer, 2018), 277-78.
[96] *Chagos Marine Protected Area Arbitration*, para 519.

interests involved, consideration of alternative approaches and an assessment of the need for consultation with the other State concerned.[97] The *Chagos* case also indicates that the decision on how to implement 'due regard' rests on the State that is exercising its rights and does not require agreement of the other State concerned.[98] Ong notes that in the majority of cases, there will have to be at least some level of consultation with the rights holding State[99] and he opines that although the Court declined to articulate a legal threshold for such inter State consultation, "the Tribunal did apply a due diligence requirement on the duty of consultation placed on the initiating State for such proposals, based on the principle of non-discrimination between the different States to be consulted over any proposed changes".[100] In the *Chagos* case, the Tribunal compared the United Kingdom's level of consultation with Mauritius versus that with the United States and found it to be significantly lacking.

Matz-Lück and Fuchs are of the view that "rights – or even duties – to establish MPAs in zones of national jurisdiction and beyond cannot be derived from Part XII UNCLOS", noting that any such unilateral measures on the basis of Article 192 in conjunction with Article 194 (5) UNCLOS are "controversial even with regard to the EEZ".[101] In relation to the question of balancing of rights when establishing an MPA, the *Chagos* case again provides useful insights. The Tribunal did not exclude the possibility that environmental considerations could potentially justify, for the purposes of Article 194(4), the infringement of Mauritian fishing rights in the territorial sea.[102] Such justification,

[97] Alex G Oude Elferink, 'Coastal states and MPAs in ABNJ: ensuring consistency with the LOSC' (2018) 33 The International Journal of Marine and Coastal Law 437, 454; Chagos Marine Protected Area Arbitration, para 534-535.
[98] Chagos Marine Protected Area Arbitration, para 534-535.
[99] David M Ong, 'Implications of the Chagos Marine Protected Area Arbitral Tribunal Award for the balance between natural environmental protection and traditional maritime freedoms' in Allen and Monaghan (eds.) *Fifty Years of the British Indian Ocean Territory: Legal Perspectives* (Springer, 2018), 278-279.
[100] David M Ong, 'The interaction between an Agreement on Biodiversity Beyond National Jurisdiction and the law of the sea' in S Borg, Simone, F G Attard, and P M Vella de Fremeaux (Eds.) *Research Handbook on Ocean Governance Law.* (Edward Elgar Publishing 2023), 262.
[101] Nele Matz-Lück and Johannes Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?' (2014) 49 Marine Policy 155, 157.
[102] Ong, 'Implications of the Chagos Marine Protected Area Arbitral Tribunal Award for the balance between natural environmental protection and traditional maritime freedoms', in Allen and Monaghan *Fifty Years of the British Indian Ocean Territory: Legal Perspectives* (Springer, 2018), 281.

however, would require significant engagement with Mauritius to explain the need for the measure and to explore less restrictive alternatives.[103]

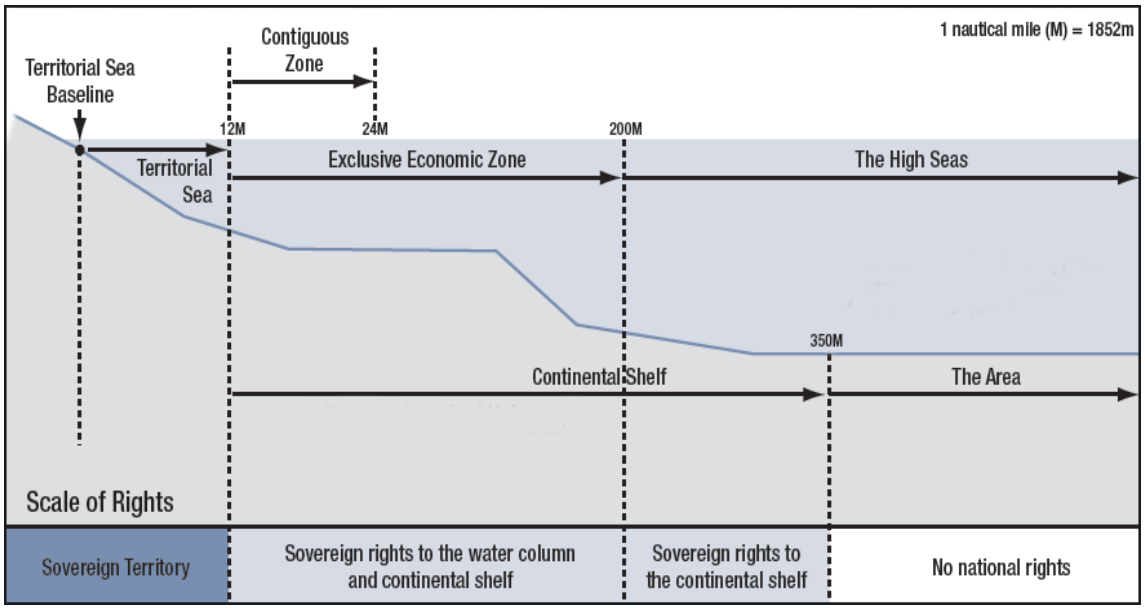
The **Continental Shelf** of a coastal State "comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance."[104] A State's continental shelf may exceed 200 nm until the natural prolongation ends.[105] The Commission on the Limits of the Continental Shelf (CLCS) was established under UNCLOS in order to assist States in determining the extent of the outer limit of the continental shelf beyond 200nm given the geographical, physical and legal complexities involved.[106]

The coastal State exercises sovereign rights over the continental shelf to explore and exploit its natural resources,[107] which consist of "the mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species".[108] In the exercise of these rights, the coastal State must not infringe on navigation or other rights and freedoms of other States as provided for in UNCLOS.[109] Therefore it is reasonable to conclude that States may establish MPAs on the Continental Shelf but must not interfere with other State's freedoms.[110] The extended Continental Shelf (ECS) presents additional legal complexities given that it lies under the high seas, therefore an MPA established on an ECS claimed by a State could potentially encompass both areas within and beyond national jurisdiction.[111] The legal consequences of

[103] Ibid.
[104] Article 76 (1) UNCLOS.
[105] Article 76 (6) UNCLOS. On the outer continental shelf, see further Joanna Mossop, *The Continental Shelf Beyond 200 Nautical Miles: Rights and Responsibilities* (Oxford University Press 2016).
[106] See Annex II UNCLOS and Article 76(8) UNCLOS.
[107] Article 77(1) UNCLOS.
[108] Article 77(4) UNCLOS.
[109] Article 78(2) UNCLOS
[110] Jakobsen, *Marine protected areas in international law: An arctic perspective*, 50.
[111] On this point, see further Joanna Mossop, 'Reconciling activities on the extended continental shelf with protection of the marine environment' in Rayfuse R, *Research handbook on international marine environmental law* (Edward Elgar Publishing 2015).

establishing MPAs in areas subject to ECS claims by States is discussed in the North East Atlantic case study in Chapter Six.

Figure 3.1 UNCLOS Maritime Zones[112]



2. Areas Beyond National Jurisdiction

ABNJ make up over two thirds of the ocean and include the high seas, which is the water column beyond the EEZs of coastal States,[113] and the 'Area' which is made up of the seabed, the ocean floor and its subsoil.[114] The high seas are governed by the principle of freedom whereas the Area is governed by the principle of common heritage of mankind, which as will be seen in the following discussion, imply two very different approaches to management of resources.

The High Seas

UNCLOS devotes Part VII to the high seas.[115] Article 86 defines the high seas as "all parts of the sea which are not included in the EEZ, in the territorial sea or in the internal

[112] Laura E Lallier and others, 'Access to and use of marine genetic resources: understanding the legal framework' (2014) 31 Natural product reports 612 LE.
[113] Glen Wright, Julien Rochette and Elisabeth Druel, 'Marine protected areas in areas beyond national jurisdiction' in Rayfuse, R (ed.) *Research Handbook on International Marine Environmental Law* (Edward Elgar Publishing 2015), 272.
[114] Article 1(1) UNCLOS.
[115] See generally Douglas Guilfoyle 'The High Seas' in Rothwell and others, *The Oxford handbook of the law of the sea*.

water of a State, or in the archipelagic waters of an archipelagic State". The high seas are considered a 'global commons' with no one State having overall competence.[116] One of the essential attributes of the commons under customary international law is the open access of all States to the resources of these areas,[117] which brings us to the principle of freedom of the high seas.

The customary principle of freedom of the high seas, first established in the early 19th century and now codified in UNCLOS, has two meanings.[118] First, as encapsulated by Article 89 of UNCLOS, it means that the high seas are free from national jurisdiction: "no State may validly purport to subject any part of the high seas to its sovereignty". Secondly, freedom of the high seas means freedom of activities there.[119] This notion is expressed in Article 87(1) of UNCLOS which seeks to ensure non-appropriation of the high seas and the freedom of various uses of the oceans such as navigation, overflight, laying submarine cables and pipelines, construction of artificial islands, fishing and marine scientific research for all States subject to other provisions of UNCLOS and of international law.[120] Freedom of the high seas is not absolute, however, and according to Article 87(2) must be exercised with 'due regard' for *inter alia* the interests of other States.[121] While Tanaka has suggested that this freedom may be qualified to some degree by specific treaties on conservation of marine living resources and marine environmental protection,[122] Brunnée posits that "prima facie, all States have access to the commons, and no State is legally in a position to impose a particular approach to their use or protection."[123]

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[116] Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, 22.
[117] Jutta Brunnée, 'Common areas, common heritage, and common concern' in Bodansky D, Brunnée J and Hey, E (eds.) *The Oxford handbook of international environmental law* (Oxford University Press 2008), 562.
[118] Tanaka, *The international law of the sea*, (2015), 155.
[119] Ibid, 156.
[120] Article 87(1) UNCLOS; ibid, 192; Cymie R Payne, 'Sustainable Management of High Seas Marine Resources: Scoping Note' (2016). Available at SSRN 3044103, 3.
[121] Article 87 (2) UNCLOS, "These freedoms shall be exercised by all States with due regard for the interests of other States in their exercise of the freedom of the high seas, and also with due regard for the rights under this Convention with respect to activities in the Area."
[122] Tanaka, *The international law of the sea*, (2015), 157.
[123] Brunnée, 'Common areas, common heritage, and common concern', 554.

Critics have noted that the freedom of the seas paradigm as espoused in UNCLOS inevitably leads to a 'tragedy of the commons'[124] promoting a 'winner takes all' mentality.[125] In terms of the open access policy to all States, in reality it is only those States with sufficient technological and financial resources who have the capacity to access the rich resources of the high seas. The principle is also in tension with other rights and duties, such as the duty to protect the marine environment and marine biodiversity, to the extent that it is used to assert a right of free access to take and use the marine environment unilaterally.[126] In terms of enforcement and compliance, the principle is underpinned by the principle of exclusive flag State jurisdiction[127] which means that enforcement of international rules can only be carried out by the flag State of a vessel, unless States have agreed on cooperative enforcement mechanisms.[128] This has led to major challenges in developing effective international rules in practice, especially in the shipping and fishing sectors.[129] Here we can see how the duty to cooperate in international law (see Chapter 5, section 5) may have a significant bearing on relationships with third parties in matters of compliance. For example, as will be illustrated in Chapter Six, in the case of an international treaty which permits the establishment of MPAs on the high seas, the Convention for the Protection of the Marine Environment of the Northeast Atlantic (OSPAR),[130] the relevant rules only apply to State parties to the Convention, not third parties. However, OSPAR has engaged soft law cooperative measures with third parties to encourage compliance, such as Memoranda of Understanding.

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[124] A concept first expressed by Garrett Hardin, 'The tragedy of the commons: the population problem has no technical solution; it requires a fundamental extension in morality' (1968) 162 Science 1243. See also Elizabeth M De Santo, 'Implementation challenges of area-based management tools (ABMTs) for biodiversity beyond national jurisdiction (BBNJ)' (2018) 97 Marine Policy 34, 35-37.

[125] Duncan French, 'Common concern, common heritage and other global (-ising) concepts: rhetorical devices, legal principles or a fundamental challenge?', *Research Handbook on Biodiversity and Law* (Edward Elgar Publishing 2016), 341.

[126] Payne, 'Sustainable Management of High Seas Marine Resources: Scoping Note', 3.

[127] Article 92(1) UNCLOS, "Ships shall sail under the flag of one State only and, save in exceptional cases expressly provided for in international treaties or in this Convention, shall be subject to its exclusive jurisdiction on the high seas […]."

[128] Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, 22.

[129] Ibid.

[130] Convention for the Protection of the Marine Environment of the North East Atlantic (1992) 2354 UNTS 67.

Designation of MPAs in the high seas is therefore a contentious matter and limited by the 'freedoms' of other States under UNCLOS. By their nature, establishing high seas MPAs involves closing a part of the marine space to certain human activities.[131] However given that no State can claim territorial sovereignty or sovereign rights over parts of the high seas in a strict sense, it follows that no State can unilaterally establish MPAs in the high seas under the current UNCLOS framework.[132] Any measure that attempts to restrict the exercise of other States' high seas freedoms (e.g. restriction of fishing activities) requires the consent of affected States to be effective.[133] Given this situation, UNCLOS[134] and the CBD[135] urge States to cooperate to establish MPAs in ABNJ, once again highlighting the importance of the duty to cooperate in terms of bridging seemingly irreconcilable gaps.

The Area

Article 1(1) UNCLOS defines the Area as "the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction." To be clear, the superjacent waters above the Area are always the high seas.[136] Article 136 of UNCLOS States that "The Area and its resources are the common heritage of mankind." The principle of common heritage of mankind (CHM) as espoused in UNCLOS is composed of four legal elements.[137] Firstly, the non-appropriation of the area as well as its natural resources is pronounced by Article 137(1), which rejects any reliance on the principle of sovereignty.[138] This is essentially ascribing the notion of the Area as a 'commons'. Secondly, Article 140 provides that the activities in the Area shall be carried out for the

[131] Yoshifumi Tanaka, *A dual approach to ocean governance: the cases of zonal and integrated management in international law of the sea* (Routledge 2008), 203.
[132] Ibid; Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, 22.
[133] David Freestone, 'The Limits of Sectoral and Regional Efforts to Designate High Seas Marine Protected Areas' (2018) 112 AJIL Unbound 129, 130.
[134] Article 197 UNCLOS.
[135] Article 5 CBD; CBD Decision X/2 (2010) Annex, Target 11, para 30.
[136] Tanaka, *The international law of the sea*, (2015), 155.
[137] Ibid, 180; Brunnée, 'Common areas, common heritage, and common concern', 562.
[138] Article 137(1) UNCLOS, "No State shall claim or exercise sovereignty or sovereign rights over any part of the Area or its resources, nor shall any State or natural or juridical person appropriate any part thereof. No such claim or exercise of sovereignty or sovereign rights nor such appropriation shall be recognized."

benefit of mankind as a whole[139] and calls for the equitable sharing of financial and other economic benefits derived from activities in the area.[140] Thirdly, the Convention also establishes an international organization, the International Seabed Authority (ISA), to act on behalf of the international community.[141] All State parties to UNCLOS are members of the Authority.[142] The ISA is granted power to adopt regulations for all seabed activities, including prospecting for minerals in the Area, while also ensuring effective environmental protection and the promotion of scientific research.[143] In terms of environmental protective measures, it can designate Areas of Particular Environmental Interest (APEIs) to protect biodiversity and ecosystem structure and functioning from the potential impacts of deep-sea mining.[144] However questions have been raised about the dual mandate invoking potential conflicts of interest, whereby the authority charged with issuing licences for prospecting in the seabed is also in charge of its environmental protection, and there have been allegations of unorthodox closeness with commercial mining companies.[145]

Despite the development of the principle of CHM by UNCLOS, it has not gained much traction since.[146] There is now a growing emerging scholarship calling for the application of the notion of common concern of humankind to global environmental problems of a

[139] Article 140 (1) UNCLOS.
[140] Article 140(2) UNCLOS.
[141] Article 153(1) UNCLOS
[142] Article 156(2) UNCLOS.
[143] Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, 12, 22; Daniela Diz and others, 'Mainstreaming marine biodiversity into the SDGs: The role of other effective area-based conservation measures (SDG 14.5)' (2018) 93 Marine Policy 251, 255.
[144] ISA, Decision of the Council of the International Seabed Authority relating to amendments to the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area and related matters. 2013; ISBA/19/C/17; Section V.31.6. Cited in Wright, Rochette and Druel, 'Marine protected areas in areas beyond national jurisdiction', 274.
[145] See Todd Woody and Evan Halper, *A gold rush in the deep sea raises questions about the authority charged with protecting it*, LA Times, 19 April 2022, available at https://www.latimes.com/politics/story/2022-04-19/gold-rush-in-the-deep-sea-raises-questions-about-international-seabed-authority. On deep sea mining and conservation management approaches, see further Daniel O. B. Jones and others, 'Existing environmental management approaches relevant to deep-sea mining' (2019) 103 Marine Policy 172 and Aline Jaeckel, Kristina M Gjerde and Jeff A Ardron, 'Conserving the common heritage of humankind–Options for the deep-seabed mining regime' (2017) 78 Marine Policy 150.
[146] Brunnée, 'Common areas, common heritage, and common concern', 563.

transboundary nature.[147] Common concern is conceptually more open-ended than the principle of CHM as it can be applied to both national jurisdictions and ABNJ.[148] The concept of common concern gained traction in the 1990s and is explicitly mentioned in the Preambles to the CBD and the UN Framework Convention on Climate Change (UNFCCC).[149] It is viewed as a more suitable framework for climate change and biodiversity, better reflecting the collective concerns relating to these issues.[150] Harrison has argued that the protection of the marine environment should also be considered a common concern of human kind akin to the protection of the global atmosphere and the conservation of biological diversity as it would underline that all States have an interest in the way in which activities affecting the marine environment are carried out.[151]

3. Area Based Management Tools in ABNJ

To date, international instruments establishing area-based management tools (ABMTs) in ABNJ have tended to be regional (see Section 2.c below) and sectoral (see Section 3) in nature.[152] As mentioned above, the ISA can designate APEIs, 13 of which have been approved for establishment in the Clarion-Clipperton Zone (CCZ) in the Eastern Pacific Ocean to date.[153] According to Diz and others, the term APEI was chosen to avoid confusion with other initiatives to establish MPAs.[154] They are seen by some as similar to MPAs, and in effect the design of the Environmental Management Plan for the CCZ (CCZ-EMP) is based on principles for MPA networks.[155] However, the CCZ-EMP includes a requirement to foster international collaboration to integrate APEIs into MPAs

[147] Chelsea Bowling, Elizabeth Pierson and Stephanie Ratté, 'The common concern of humankind: a potential framework for a new international legally binding instrument on the conservation and sustainable use of marine biological diversity in the high seas' (2016) White Paper 1, 3.
[148] Brunnée, 'Common areas, common heritage, and common concern', 564.
[149] United Nations Framework Convention on Climate Change (1992) 1771 UNTS 107.
[150] Tanaka, *The international law of the sea*, (2015), 342.
[151] Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, 2.
[152] Emily Marie Barritt and Jorge E Viñuales, 'Legal Scan: A Conservation Agenda for Biodiversity Beyond National Jurisdictions', *Cambridge Centre for Environment, Energy and Natural Resource Governance, University of Cambridge Working Paper* (2016), 51.
[153] ISA Decision of the Council relating to an environmental management plan for the Clarion-Clipperton Zone (2012) ISBA/18C/22 established nine APEIs in the CCZ. In December 2021, four more APEIs were approved for the CCZ. See Decision ISBA/26/C/58.
[154] Diz and others, 'Mainstreaming marine biodiversity into the SDGs: The role of other effective area-based conservation measures (SDG 14.5)', 258.
[155] Ibid.

in ABNJ, leading to suggestions that these measures are not MPAs themselves, but could be considered other effective area based conservation measures (OECMs) (see Chapter Two).[156] Other examples of ABMTs in ABNJ include two 'Special Areas' under the International Convention for the Prevention of Pollution from Ships (MARPOL)[157] in the Antarctic and the Mediterranean[158] and the Indian Ocean and Southern Ocean Sanctuaries, established by the International Whaling Commission (see further Section 3).[159] Another ABMT which may be deployed in ABNJ is a Particularly Sensitive Sea Area (PSSA), which may be designated by the International Maritime Organization (IMO) (see further Section 3). However, despite having jurisdiction to designate in ABNJ, to date there are no PSSAs within ABNJ.[160]

Freestone has observed that, as a result of the sectoral approach promoted by the UNCLOS framework, the adoption of protective measures for ABNJ has been left to States acting on an *ad hoc* basis through existing sector-based organizations, where conservation is usually a secondary concern, not a primary focus.[161] Whereas MPAs have cross-sectoral area-based conservation objectives, sectoral designations only apply to the specific sectoral impact concerned and therefore do not offer protection from other human activities.[162] Despite the fact that scientists have explicitly recognized that ecologically connected networks of MPAs are crucial for sustaining high seas ecosystems,[163] there is currently no overarching legal framework in place for the designation of MPAs in ABNJ,

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[156] Ibid.
[157] International Convention for the Prevention of Pollution from Ships (1973) 1340 UNTS 184 (MARPOL).
[158] See IMO Policy Brief, PrepCom 1 Conservation and Sustainable Use of Marine Biological Diversity of ABNJ (2016). Available at: www.un.org/depts/los/biodiversity/prepcom_files/IMO_Policy_Brief_BBNJ_PrepCom_1.pdf
[159] https://iwc.int/management-and-conservation/sanctuaries. For discussion see further Elisa Morgera, 'Whale sanctuaries: an evolving concept within the International Whaling Commission' (2004) 35 Ocean Development & International Law 319.
[160] https://www.imo.org/en/OurWork/Environment/Pages/PSSAs.aspx.
[161] Freestone, 'The Limits of Sectoral and Regional Efforts to Designate High Seas Marine Protected Areas' cited in Kristina M Gjerde, Nichola A Clark and Harriet R Harden-Davies, 'Building a Platform for the Future: the Relationship of the Expected New Agreement for Marine Biodiversity in Areas beyond National Jurisdiction and the UN Convention on the Law of the Sea' (2019) 33 Ocean Yearbook Online 1, 15.
[162] Diz and others, 'Mainstreaming marine biodiversity into the SDGs: The role of other effective area-based conservation measures (SDG 14.5)', 258.
[163] See e.g., Bethan C. O'Leary and Callum M. Roberts, 'Ecological connectivity across ocean depths: Implications for protected area design' (2018) 15 Global Ecology and Conservation e00431.

resulting in only 1% being protected.[164] The failure to adequately protect biodiversity beyond national jurisdiction (BBNJ) has been recognized as a serious gap in ocean governance[165] and a new treaty, to be adopted under UNCLOS, is currently being negotiated to address *inter alia* designation of MPAs, which will be discussed further in Section 4 of this chapter.

b. Convention on Biological Diversity

The regulation of biodiversity specifically was first targeted at the international level with the adoption of the CBD in 1992, which remains the leading global treaty for the conservation of biological diversity. The CBD is widely viewed as a framework convention, which provides a flexible conceptual structure for international cooperation and national implementation.[166] The Convention has a large number of State parties, including the European Union (EU) and all parties to UNCLOS,[167] and has been described as "one of the most important environmental commitments in the history of international cooperation on global issues affecting the ecosphere" which "highlights the important role of protected areas as a key strategy for biodiversity conservation and sustainable development".[168] It has also been credited with promoting the ecosystem approach as a landmark regulatory strategy,[169] and for recognizing that biodiversity is a cross-cutting issue and mainstreaming it into relevant sectoral or cross sectoral plans, programmes and policies.[170]

Article 8 (a) of the Convention sets out a legal obligation for State parties to establish protected areas: "Each Contracting Party shall, as far as possible and as appropriate: Establish a system of protected areas or areas where special measures need to be taken to

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[164] Protected Planet (2022), https://www.protectedplanet.net/en/thematic-areas/marine-protected-areas.
[165] See e.g., Gjerde, Clark and Harden-Davies, 'Building a Platform for the Future: the Relationship of the Expected New Agreement for Marine Biodiversity in Areas beyond National Jurisdiction and the UN Convention on the Law of the Sea'.
[166] Elisa Morgera and Elsa Tsioumani, 'Yesterday, Today, and Tomorrow: Looking Afresh at the Convention on Biological Diversity' (2010) 21 Yearbook of International Environmental Law 3, 3.
[167] See CBD website for a list of all Parties: https://www.cbd.int/information/parties.shtml.
[168] Christopher J. Lemieux and others, 'How the race to achieve Aichi Target 11 could jeopardize the effective conservation of biodiversity in Canada and beyond' (2019) 99 Marine Policy 312, 321.
[169] Elisa Morgera, 'The ecosystem approach and the precautionary principle' in Razzaque J and Morgera M (eds.) *Biodiversity and Nature Protection*. (Edward Elgar Publishing 2017), 70.
[170] Articles 6 and 10 CBD; Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, 45.

conserve biological diversity." As described in Chapter Two, a protected area is defined broadly in Article 2 of the Convention and encompasses both marine and terrestrial areas.[171] Article 8 (b) requires States to develop, where necessary, guidelines for the selection, establishment and management of protected areas. The Convention also recognizes that activities occurring outside a protected area impact conservation and in Article 8(c) it requires States to "regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use" while Article 8 (e) requires States to "promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas."

The achievement of the more holistic ecosystems approach (see Chapter Four) espoused by the CBD is made difficult in practice by the division of jurisdictional competencies in respect of areas under national jurisdiction and ABNJ.[172] The jurisdictional scope of the CBD clearly covers marine biodiversity within the limits of national jurisdiction.[173] However Article 4 (b) states that in ABNJ it only applies to processes and activities carried out under the jurisdiction and control of the parties. Consequently, Article 5 of the CBD requires that Parties cooperate with each other for the conservation and sustainable use of biodiversity in ABNJ.[174] According to Tanaka's interpretation, the cumulative effect of Articles 4, 8(a) and 22(2) CBD[175] suggest that a MPA can only be established in marine spaces under coastal State jurisdiction.[176] This means that protection of marine biodiversity in ABNJ is left to be governed by the UNCLOS

[171] Article 2 CBD: "'Protected area' means a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives".
[172] Rosemary Rayfuse, 'Climate change, marine biodiversity and international law' in Bowman M, Davies PGG and Goodwin EJ (eds.) *Research Handbook on Biodiversity and Law* (Edward Elgar Publishing 2016), 131.
[173] CBD Articles 1 and 4 (a).
[174] CBD Article 5. This obligation is further defined in Article 14(1)(c) to include sharing information on activities that are likely to significantly adversely affect biodiversity in ABNJ, and in Article 14(1)(d) to notify and act to minimize imminent or grave damage.
[175] Article 22(2) states that "Contracting Parties shall implement this Convention with respect to the marine environment consistently with the rights and obligations of States under the law of the sea". This is preceded by Article 22(1): "The provisions of this Convention shall not affect the rights and obligations of any Contracting Party deriving from any existing international agreement, except where the exercise of those rights and obligations would cause a serious damage of threat to biological diversity."
[176] Tanaka, *The International Law of the Sea*, (2019), 420.

framework together with the existing range of international agreements, which has led to significant gaps in the protection of marine biodiversity in ABNJ.[177] Pending the final negotiations of the new BBNJ treaty, CBD parties have urged States to take individual action to designate appropriate MPAs within their jurisdiction and to cooperate to establish MPAs in ABNJ.[178]

While the Convention text does not explicitly mention TBMPAs, it has been suggested that the reference to cooperation facilitates the establishment of TBMPAs and networks of TBMPAs.[179] The CBD's Programme of Work on Protected Areas 2004 (PoWPA)[180] contains a specific goal in relation to transboundary protected areas, which is to establish and strengthen regional networks, transboundary protected areas and collaboration between neighbouring protected areas across national boundaries.[181] The CBD programmes of work are the main instrument that CBD parties use to achieve the commitments contained in the Convention[182] and through them the CBD has developed important normative activity, such as the development of standards and technical guidance to guide the adoption of domestic measures.[183] The PoWPA specifically notes that its work should be undertaken in the context of the ecosystem approach[184] and that this implies the establishment and management of protected areas in ecosystem or bioregional terms, thereby making a strong case for the establishment of TBMPAs and MPAs in ABNJ.[185]However in general, the Convention has been criticized for being of a

[177] For a detailed discussion on identified gaps in high seas governance, see further Gjerde, Clark and Harden-Davies, 'Building a Platform for the Future: the Relationship of the Expected New Agreement for Marine Biodiversity in Areas beyond National Jurisdiction and the UN Convention on the Law of the Sea'.
[178] Decision X/2 (2010), Annex, Target 11, para 30.
[179] Guerreiro and others, 'The role of international environmental instruments in enhancing transboundary marine protected areas: An approach in East Africa', 101.
[180] Secretariat of the Convention on Biological Diversity *Programme of Work on Protected Areas* (CBD Programmes of Work) Montreal: Secretariat of the Convention on Biological Diversity (2004). Available at https://www.cbd.int/protected/pow/learnmore/intro/
[181] Ibid, Goal 1.3.
[182] Morgera and Tsioumani, 'Yesterday, Today, and Tomorrow: Looking Afresh at the Convention on Biological Diversity', 5
[183] Dupuy and Viñuales, *International environmental law*, 189.
[184] CBD PoWPA (2004), 3
[185] Ibid, 7-8.

weak normative character,[186] with contracting Parties having a wide discretion.[187] For example, despite the emphasis on national implementation, there is no mechanism to systematically and effectively monitor implementation and compliance at the national level.[188] It also gives primacy to UNCLOS[189] and contains weak obligations concerning transboundary damage to biological diversity, with the Convention merely placing on parties an obligation to exchange information and consult with one another, which is in line with customary international law on this issue, but does not advance it any further.[190]

c. The Regional Approach

The international regime established by UNCLOS and the CBD is supported by regional ocean governance mechanisms such as the United Nations Regional Seas Programme (RSP) as well as by regional fisheries bodies and management organizations.[191] As mentioned earlier, UNCLOS established a duty for the States to cooperate on a regional basis for the protection and preservation of the marine environment,[192] acknowledging that ocean governance requires complex structures which could be usefully developed at regional level.[193] According to Warner, regional agreements have added value to global instruments by focusing on the regulation of more localized threats such as pollution and by protecting marine biodiversity through the establishment of MPAs.[194] With regard to establishment of MPAs, much work has been done by the RSP to advance and promote MPA networks in regions around the work, with several Regional Seas Conventions (RSCs) addressing the use of MPAs.[195] The RSP has been notably pioneering in relation to transboundary marine governance and the establishment of TBMPAs across national jurisdictions as well as the high seas, as will be discussed in more detail in Chapters Five

[186] Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, 47.
[187] Tanaka, *The International Law of the Sea*, (2019), 429.
[188] Morgera and Tsioumani, 'Yesterday, Today, and Tomorrow: Looking Afresh at the Convention on Biological Diversity', 6
[189] Article 22(2) CBD.
[190] Tanaka, *The International Law of the Sea* (2019), 429, 417.
[191] See further Chapter Five.
[192] Article 197 UNCLOS.
[193] Philippe Sands and others, *Principles of international environmental law* (Fourth edn, Cambridge University Press 2018), 464.
[194] Robin M Warner, 'Conserving marine biodiversity in areas beyond national jurisdiction: co-evolution and interaction with the law of the sea' (2014) 1 Frontiers in Marine Science 6.
[195] See further Chapter Five for a detailed discussion.

and Six. Suffice it to say for the purposes of this chapter, that the majority of RSPs do not cover ABNJ and have limited mandates, which in turn restricts their ability to regulate and control a number of activities.[196] Also, their measures are only binding on their members, not third parties.[197]

Regional Fisheries Management Organizations (RFMOs), established under the United Nations Fish Stocks Agreement (UNFSA),[198] are responsible for managing highly migratory fish stocks, and have the power to protect areas from fishing activities, including in ABNJ.[199] Pursuant to relevant UN General Assembly resolutions, RFMOs can designate closures of certain fisheries to protect or restore the stocks they manage or to protect vulnerable marine ecosystems (VMEs) located on the seabed.[200] VMEs constitute areas with characteristics that may be vulnerable to impacts from fishing activities.[201] However, RFMOs do not cover the entirety of the world's oceans and fishing resources due to geographical and regulatory gaps concerning particular fish stocks,

[196] Diz, 'Marine biodiversity: Unravelling the intricacies of global frameworks and applicable concepts', 130.
[197] Raphaël Billé and others, *Regional oceans governance: making Regional Seas programmes, regional fishery bodies and large marine ecosystem mechanisms work better together*. Regional Seas Reports and Studies No 197 (UNEP 2016), 50-51.
[198] Articles 10, 11 and 12 of the United Nations Fish Stocks Agreement (UNFSA), the Agreement for the Implementation of the Provisions of the UN Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 4 August 1995 (into force 11 December 2001) 2167 UNTS 3. On RFMOs, see generally Rosemary Rayfuse, 'Regional fisheries management organizations' in Rothwell D and others *The Oxford handbook of the law of the sea* (2015) and Chapters Four and Five.
[199] Freestone, 'The Limits of Sectoral and Regional Efforts to Designate High Seas Marine Protected Areas', 131.
[200] Wright, Rochette and Druel, 'Marine protected areas in areas beyond national jurisdiction', 274. VMEs constitute areas with characteristics that may be vulnerable to impacts from fishing activities. According to the United Nations Food and Agriculture Organization 'the vulnerable marine ecosystem (VME) concept emerged from discussions at the UNGA in 2002 (Resolution 57/171) and gained momentum after UNGA Resolution 61/105 of 2006'. See www.fao.org/in-action/vulnerable-marine-ecosystems/en/. See further UNEP-WCMC, 'A review of area-based planning tools. What is the potential for cross-sectoral planning in areas beyond national jurisdiction? Technical document Produced as part of the GEF ABNJ Deep Seas Project. Cambridge (UK): UN Environment World Conservation Monitoring Centre. 71pp.' (2018), 59-63. On VMEs more generally, see Edward J Goodwin, 'Broad-spectrum efforts to enhance the conservation of vulnerable marine ecosystems' in Bowman M, Davies PGG and Goodwin EJ (eds.) *Research Handbook on Biodiversity and Law* (Edward Elgar Publishing 2016).
[201] http://www.fao.org/in-action/vulnerable-marine-ecosystems/en/.

species, ecosystems or habitats.[202] Also, decisions are only binding on their members.[203] Thus, many areas are unregulated and many stocks and species remain unmanaged.[204]

3. Other 'MPA Related Concepts' in International Law

Other international conventions, such as the UNESCO World Heritage Convention and the Ramsar Convention, also designate sites of international importance, referred to by Tanaka as 'MPA related concepts'.[205] Sometimes, overlaps occur between these categories and even within them,[206] however the World Database on Protected Areas (WDPA) only counts areas once for the purpose of its coverage statistics.[207] With respect to international recognition of transboundary sites, IUCN cites Ramsar Sites, World Heritage Sites and UNESCO Biosphere Reserves as potential options for designation, given that each of their founding instruments recognizes connectivity and, by association, transboundary conservation, albeit in different ways.[208] However, they have inherent limitations which will be highlighted below.

- **Ramsar Sites**

The Convention on Wetlands,[209] or the Ramsar Convention as it is commonly known, is dedicated to the protection of wetlands and their resources.[210] The Convention's mission is "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development

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[202] Diz, 'Marine biodiversity: Unravelling the intricacies of global frameworks and applicable concepts', 135.
[203] Freestone, 'The Limits of Sectoral and Regional Efforts to Designate High Seas Marine Protected Areas', 131.
[204] Rayfuse, 'Regional fisheries management organizations', 672. See also Guillermo Ortuño Crespo and others, 'High-seas fish biodiversity is slipping through the governance net' (2019) 3 Nature Ecology & Evolution 1273.
[205] See further Tanaka, *The International Law of the Sea* (2019), 419- 420.
[206] For example, there are approximately 183,000 km2 designated both as Ramsar sites (wetlands of international importance) and UNESCO World Heritage Sites. UNEP-WCMC, IUCN and NGS. *Protected Planet Report 2018*. (Cambridge UK; Gland, Switzerland; and Washington, D.C., USA, 2018), 8.
[207] Ibid.
[208] M. Vasilijević and others, *Conservation: A systematic and integrated approach.* Best Practice Protected Area Guidelines Series No. 23 (IUCN 2015), xi; 15.
[209] Convention on Wetlands of International Importance especially as Waterfowl Habitat (1971) 996 UNTS 247.
[210] See further www.ramsar.org

throughout the world".[211] 'Wise use' of wetlands is defined as the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development.[212] Article 1(1) provides a broad definition of wetlands: "For the purpose of this Convention wetlands are areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres." It is important to highlight that Ramsar sites are limited to marine waters of a depth of six metres maximum.

Article 2(1) of the Convention provides for the establishment of a list of wetlands. Parties to the Convention are responsible for identifying possible sites and each State must designate at least one wetland upon joining the Convention.[213] However, the obligation of wise use applies to wetlands whether listed or not.[214] States are under an obligation to "promote conservation of wetlands and waterfowl by establishing nature reserves on wetlands, whether they are included in the List or not."[215] Under the Convention parties are to consult with each other concerning implementation of the Convention, especially "in the case of a wetland extending over the territories of more than one Contracting Party or where a water system is shared by Contracting Parties".[216] Therefore, the Convention specifically requests State parties to cooperate in managing transboundary wetlands. There are currently 65 Ramsar sites recognized as transboundary.[217]

The IUCN has noted that while many of the Ramsar Sites may also have other protection status (e.g., are protected areas under national legislation, World Heritage Sites or UNESCO biosphere reserves), there is no obligation for Ramsar sites to be legally protected areas under national legislation.[218] IUCN maintains that this sometimes helps

[211] https://www.ramsar.org/about/the-ramsar-convention-and-its-mission
[212] https://www.ramsar.org/about/the-wise-use-of-wetlands
[213] Article 2(4) Ramsar Convention.
[214] Article 3(1) Ramsar Convention.
[215] Article 4(1) Ramsar Convention.
[216] Article 5, Ramsar Convention. See also Ramsar COP Resolution VII.19 on International Cooperation (adopted 18 May 1999).
[217] Ramsar Sites Information Service: https://rsis.ramsar.org/ris-search/?f%5B0%5D=isTransboundarySite_b%3Atrue [Accessed 13 July 2022].
[218] Nigel Dudley, *Guidelines for Applying Protected Area Management Categories* (IUCN 2008), 73.

to persuade governments to designate sites under Ramsar when they would be reluctant to make them national protected areas.[219]

- **UNESCO World Heritage Site**

The World Heritage Convention (WHC)[220] includes a concept similar to that of MPAs.[221] Dupuy and Viñuales describe the Convention as a hybrid instrument which protects cultural heritage as well as portions of the natural environment.[222] UNESCO itself states that the most significant feature of the Convention is that it links together in a single document the concepts of nature conservation and the preservation of cultural properties.[223] It recognizes the way in which people interact with nature, and the fundamental need to preserve the balance between the two.[224]

Unlike Ramsar, the WHC does not grant States a unilateral right to have a site listed. Instead governments must nominate sites for possible inclusion on the World Heritage List, with recognition depending on a technical evaluation,[225] followed by a review and final decision by World Heritage Committee members.[226] Suitability is based in part on whether or not the site has 'Outstanding Universal Value', a term which means "cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of humanity."[227] The regulatory approach of the Convention focuses on space[228] and IUCN has stated that all new and most existing natural World Heritage sites are protected areas and comply with

[219] Ibid.
[220] Convention Concerning the Protection of the World Culture and Natural Heritage (1972) 1037 UNTS 151.
[221] Jakobsen, *Marine protected areas in international law: An arctic perspective*, 10.
[222] Dupuy and Viñuales, *International environmental law*, 178. For a more detailed discussion on the WHC see Francesco Francioni and Federico Lenzerini (eds.) *The 1972 World Heritage Convention: A Commentary* (Oxford University Press, 2008)
[223] https://whc.unesco.org/en/convention/
[224] Ibid.
[225] All natural sites are evaluated by IUCN and all cultural sites are evaluated by ICOMOS – the International Council on Monuments and Site (ICOMOS). Dudley, *Guidelines for Applying Protected Area Management Categories*, 70.
[226] Article 13 WHC; UNESCO Operational Guidelines for the Implementation of the World Heritage Convention, July 2012, WHC 12/01.
[227] WHC Operational Guidelines 2012, para 49.
[228] Dupuy and Viñuales, *International environmental law*, 178.

the IUCN definition of a protected area.[229] WHC is the only regime which actively targets conservation of biodiverse hotspots.[230]

The 2021 Operational Guidelines for the implementation of the World Heritage Convention[231] contain a section on requirements for nomination of transboundary sites, which are defined as being located on the "territory of all concerned State Parties having adjacent borders".[232] The Guidelines also refer to nomination of 'serial properties' (sites),[233] which are those that occur either on a national territory or in a transnational context "within the territory of different States Parties, which need not be contiguous",[234] thereby providing for non-adjacent transboundary sites. It is recommended that nominations are prepared jointly by State parties and that a joint management committee should be set up to oversee management of the whole transboundary site.[235] There are currently three transboundary UNESCO World Heritage marine sites, which includes the Wadden Sea (Germany/Netherlands),[236] Glacier Bay (Canada/United States)[237] and Kvarken archipelago (Finland/Sweden).[238]

- **UNESCO Man and Biosphere Reserve**

The UNESCO Man and Biosphere (MAB) Programme is an initiative that provides for Biosphere Reserves.[239] It is an intergovernmental scientific programme launched in 1971 and aims to combine effective conservation and sustainable use, described by UNESCO

[229] Dudley, *Guidelines for Applying Protected Area Management Categories*, 16; 70.
[230] Alexander Gillespie, 'Science, Values and People: The Three Factors that Will Define the Next Generation of International Conservation Agreements' (2012) Transnational Environmental Law 169, 172. Around the world, 36 areas qualify as hotspots. They represent just 2.4% of Earth's land surface, but they support more than half of the world's plant species as endemics — i.e., species found no place else — and nearly 43% of bird, mammal, reptile and amphibian species as endemics. See https://www.conservation.org/How/Pages/Hotspots.aspx
[231] UNESCO Operational Guidelines for the Implementation of the World Heritage Convention, Intergovernmental Committee for the Protection of the World Cultural and Natural Heritage, WHC 21/01, 31 July 2021, available at https://whc.unesco.org/en/guidelines
[232] WHC Operational Guidelines 2021, para. 134.
[233] The Guidelines use the term 'properties' which can be taken to mean sites. See Arie Trouwborst, 'Countering fragmentation of habitats under international wildlife regimes' in Bowman M, Davies PGG and Goodwin EJ (eds.) *Research handbook on biodiversity and law* (Edward Elgar Publishing 2016), 224.
[234] WHC Operational Guidelines 2021, para 138.
[235] Ibid, para 135.
[236] https://whc.unesco.org/en/list/131. [Accessed 13 July 2022.]
[237] https://whc.unesco.org/en/list/1314. [Accessed 13 July 2022.]
[238] https://whc.unesco.org/en/list/898. [Accessed 13 July 2022.]
[239] https://en.unesco.org/mab

as “instruments for the integrated management of socio-ecological systems or cultural landscapes”, with an emphasis on stakeholder participation in decision making structures.[240] A biosphere reserve has three zones and can comprise terrestrial, marine and coastal ecosystems.[241]

- The **core area** which comprises a “strictly protected zone that contributes to the conservation of landscapes, ecosystems, species and genetic variation.”[242]
- The **buffer zone** “surrounds or adjoins the core area(s) and is used for activities compatible with sound ecological practices that can reinforce scientific research, monitoring, training and education.”[243]
- The **transition area** is where the greatest activity is allowed, described as where “communities foster socio-culturally and ecologically sustainable economic and human activities.”[244]

The ‘World Network of Biosphere Reserves’ currently comprises of 738 biosphere reserves in 134 countries, including 22 transboundary sites.[245] Transboundary Biosphere Reserves were recommended in 1995 for “conservation of organisms, ecosystems and genetic resources crossing national boundaries”.[246] Biosphere reserves are nominated by national governments and remain under the sovereign jurisdiction of the States where they are located.[247] Therefore cooperation is critical with regard to designation and management of transboundary reserves.[248] UNESCO underlines the importance of cooperation stating that building international, regional, sub-regional and ecosystem specific cooperation is a key feature of the MAB programme.[249] With regard to the nomination of a transboundary biosphere reserve, it can either be established as two or

[240] Ibid; UNESCO Technical Guidelines for Biosphere Reserves 2021, MAB Programme, Division of Ecological and Earth Sciences UNESCO, 51-52.
[241] https://en.unesco.org/node/314143
[242] https://en.unesco.org/biosphere/about
[243] Ibid.
[244] Ibid.
[245] https://en.unesco.org/biosphere
[246] Vasilijević, *Transboundary Conservation: A systematic and integrated approach*, 16.
[247] https://en.unesco.org/biosphere/designation; see Article 5 Statutory Framework of the World Network of Biosphere Reserves on Designation Procedure and UNESCO Technical Guidelines for Biosphere Reserves 2021.
[248] UNESCO Technical Guidelines for Biosphere Reserves 2021, 20-21.
[249] https://en.unesco.org/biosphere/wnbr

more separate biosphere reserves in individual countries before being designated as a transboundary biosphere reserve or it can be established jointly by the countries concerned.[250] UNESCO recommends that a joint management structure with a clear mandate[251] should be established during the nomination process and that government authorities in participating States should sign an official legally binding agreement regarding the establishment of a transboundary biosphere reserve.[252] While acknowledging that the governance of transboundary biosphere reserves can be challenging, UNESCO does not prescribe any specific governance structure to implement a biosphere reserve or transboundary reserve.[253] Usually each State will maintain its own separate governance structure for its national biosphere reserve, with a designated person nominated as a focal point for cooperation with other States participating in the transboundary reserve.[254]

Whether Ramsar, World Heritage Sites or Biospheres count or not as MPAs is complicated. They have inherent limitations. As stated earlier, Ramsar only applies to marine waters of 6metres in depth, while the WHC has not yet been applied in ABNJ and is primarily site-based.[255] Some countries view such designations as automatically protected areas, while others do not.[256] IUCN has noted that assigning full protected area status to these designations is often the best way of ensuring the long-term conservation of the site's values.[257] There is no particular link between a designation such as a World Heritage Site and any one or group of IUCN categories,[258] although as stated above most World Heritage Sites automatically comply with IUCN criteria, given that they are

[250] UNESCO Technical Guidelines for Biosphere Reserves 2021, 20.
[251] A permanent joint secretariat with a separate budget is strongly recommended, which should include representatives of the different management teams, protected area managers, local communities, and other stakeholders. It may be complemented by ad hoc thematic working groups. Ibid, 21.
[252] Ibid, 20-21.
[253] Ibid, 52; 63.
[254] Ibid, 21.
[255] See Dan Laffoley and David Freestone, 'A world of difference-opportunities for applying the 1972 World Heritage Convention to the High Seas' (2017) 27 Aquatic Conservation: Marine and Freshwater Ecosystems 78.
[256] Dudley, *Guidelines for Applying Protected Area Management Categories*, 39.
[257] Ibid.
[258] Ibid, 70.

expected to be managed in a way that is equivalent to being in a protected area.[259] IUCN have explained how biospheres may fit within the IUCN system as follows: the highly protected core zone is usually category I– IV; the buffer zone might be category V or VI or, alternatively, managed land/water that would not correspond to an IUCN category; while the transition zone would also not correspond to an IUCN category.[260] WDPA has stated that currently UNESCO MAB sites are excluded from their protected area statistics given that the buffer and transition zones are often not protected areas.[261] They note however that the MAB Core areas are usually protected areas, designated at a national level, and are therefore generally counted.[262] Biosphere reserves are increasingly being suggested as an option for transboundary marine protection layered upon national MPA designations.[263] UNESCO claims that a transboundary marine reserve provides tools for the common management of a shared ecosystem,[264] while some authors have argued that the biosphere reserve model allows for different types of protected areas to be encompassed under one mechanism.[265] UNESCO acknowledges that the biosphere reserve concept provides a general framework for action in a transboundary location but warns that situations on the ground are very different across the world and therefore flexibility is an important consideration.[266] To date there are no examples of a fully marine UNESCO transboundary biosphere reserve, but some existing transboundary

[259] See UNESCO, Operational Guidelines for the implementation of the World Heritage Convention 2008, paragraph 97 states that: "All properties inscribed on the World Heritage List must have adequate long-term legislative, regulatory, institutional and/ or traditional protection and management to ensure their safeguarding. This protection should include adequately delineated boundaries", cited in Dudley, *Guidelines for Applying Protected Area Management Categories*, 70.
[260] Ibid.
[261] https://www.protectedplanet.net/en/resources/calculating-protected-area-coverage
[262] Ibid.
[263] See e.g., Giuseppe Notarbartolo di Sciara and Tundi Agardy, 'Building on the Pelagos Sanctuary for Mediterranean marine mammals' (2016) in Mackelworth P (ed.) *Marine Transboundary Conservation and Protected Areas* (Routledge 2016), 174-176, in the context of the Pelagos Sanctuary in the Mediterranean. It is also being considered as an option by States in the Eastern Tropical Pacific. See further Chapter Seven.
[264] UNESCO Technical Guidelines 2021, 19.
[265] Notarbartolo di Sciara and Agardy, 'Building on the Pelagos Sanctuary for Mediterranean marine mammals', 175.
[266] UNESCO Technical Guidelines for Biosphere Reserves 2021, 20.

biosphere reserves do contain marine elements.[267] The case study in Chapter Seven details efforts to create the first oceanic transboundary biosphere reserve in the world.

- **Species Specific**

International agreements dealing with species protection, such as the International Convention for the Regulation of Whaling (ICRW),[268] which permits the establishment of sanctuaries prohibiting commercial whaling.[269] The International Whaling Commission (IWC) has jurisdiction over all waters, including the high seas, in which whaling is undertaken by factory ships, land stations, and whale catchers under the jurisdiction of State Parties.[270] The Convention can also impose area limits for factory ships.[271]

The Convention on the Conservation of Migratory Species of Wild Animals (CMS),[272] provides a global platform for States to take collaborative action to address the conservation and sustainable use of migratory animals and their habitats.[273] For the purposes of the Convention, a migratory species is one that cyclically and predictably crosses one or more national jurisdictional boundaries.[274] In this regard, the CMS is considered to be an important application of transboundary conservation principles.[275] It applies to marine as well as terrestrial animals[276] and permits the establishment of MPA

[267] See, for example, the Intercontinental Biosphere Reserve of the Mediterranean, Morocco/Andalucía, Spain, which was the first transboundary biosphere reserve created by UNESCO in 2006 and contains a marine corridor. https://en.unesco.org/biosphere/wnbr/mediterranean. Last updated October 2018. Accessed on 14 September 2022.
[268] International Convention for the Regulation of Whaling (1946) 161 UNTS 72.
[269] Articles III (7)(b) and Article V(1)(c) ICRW.
[270] Article I (2) ICRW. See also Morgera, 'Whale sanctuaries: an evolving concept within the International Whaling Commission', 320.
[271] Article III (8) ICRW.
[272] Convention on the Conservation of Migratory Species of Wild Animals (1979) 1651 UNTS 333. The CMS was designed to be an umbrella Convention giving rise to more specific instruments dealing with specific species or groups of species often in clearly defined regions. As a result, seven Agreements, international treaties in their own right have been concluded, together with 19 less formal legally non-binding Memoranda of Understanding (MOUs). See https://www.cms.int/es/faq.
[273] Jodi Hilty and others, 'Guidelines for conserving connectivity through ecological networks and corridors' Best Practice Protected Area Guidelines Series 30 (IUCN 2020), ix.
[274] Article 1, para. 1, CMS.
[275] Vasilijević, *Transboundary Conservation: A systematic and integrated approach*, 12; 39.
[276] Article I(1)(f) CMS.

as a conservation management technique.[277] Under the CMS, 'range States'[278] have duties to migratory species in terms of their conservation, restoration and protection of migratory routes and habitats and limitations on their exploitation.[279] It has been cited as the key international instrument for creating Transboundary Migration Conservation Areas which are other types of ABMTs recommended by the IUCN World Commission on Protected Areas (WCPA) for the protection of migratory species, which incorporate wildlife habitats in two or more countries necessary to sustain populations of migratory species and involve some form of cooperation (see further Chapter Four, Section 3a).[280] They may include protected areas but they are not essential, as long as there is effective cooperation in the conservation of migratory species or their associated habitats.[281] A major limitation of the CMS is that it does not apply in ABNJ.[282] It was also deliberately developed in a framework manner which utilizes non-binding Memoranda of Understanding (MoUs) to create specific normative regimes per species, with the intention of increasing participation.[283]

- **Sectoral**

Many sectoral organizations developed their own protective designations due in part to the risks posed by maritime activities as well as the influence of international biodiversity obligations.[284] Under MARPOL, there are provisions for the establishment of Special Areas which are provided with a higher level of protection than other areas of the sea due to their specific oceanographic and ecological conditions.[285] The International Maritime

[277] Barritt and Viñuales, 'Legal Scan: A Conservation Agenda for Biodiversity Beyond National Jurisdictions', 52.
[278] Article 1(1)(h) CMS defines "range State" as any State that "exercises jurisdiction over any part of the range of that migratory species, or a State, flag vessels of which are engaged outside national jurisdictional limits in taking that migratory species". For more discussion, see Elferink, 'Coastal states and MPAs in ABNJ: ensuring consistency with the LOSC', 442.
[279] Guerreiro and others, 'The role of international environmental instruments in enhancing transboundary marine protected areas: An approach in East Africa', 98.
[280] Vasilijević, *Transboundary Conservation: A systematic and integrated approach*, 12; 39.
[281] Ibid, 12.
[282] Article I (1) (a) CMS.
[283] See above note 272 and Karen N Scott, 'The dynamic evolution of international environmental law' (2018) 49 Victoria University of Wellington Law Review 607, 681.
[284] Daniela Diz and others, 'Mainstreaming marine biodiversity into the SDGs: The role of other effective area-based conservation measures (SDG 14.5)' (2018) 93 Marine Policy 251, 255.
[285] See Annexes I-V of MARPOL. See Articles 21(2) and 211(6) UNCLOS for a legal basis for these measures.

Organization (IMO) may also designate Particularly Sensitive Sea Areas (PSSAs) which it defines as "an area that needs special protection through action by IMO because of its significance for recognized ecological, socio-economic, or scientific attributes where such attributes may be vulnerable to damage by international shipping activities."[286] An "associated protective measure" must be approved or adopted by the IMO at the time of the designation of a PSSA. This is essentially a legally binding measure to control maritime activities in the PSSA for example, routing measures or discharge requirements.[287] It is these measures rather than the PSSA itself which have legal implications for shipping.[288] According to the 2005 IMO guidelines on PSSAs, the identification and designation of any PSSA and the adoption of associated protective measures require consideration of three integral components: "the particular attributes of the proposed area, the vulnerability of such an area to damage by international shipping activities, and the availability of associated protective measures within the competence of IMO to prevent, reduce, or eliminate risks from these shipping activities."[289] What is interesting about the process of designation of PSSAs, is that the IMO endeavours to ensure that the interests of the coastal State, flag State and environmental and shipping communities are considered.[290] An application to the IMO for a PSSA designation and associated protective measures may only be submitted by a member government.[291]

The criteria for the identification of PSSAs and the criteria for the designation of Special Areas are not mutually exclusive and in many cases a PSSA may be identified within a Special Area and vice versa.[292] A PSSA is not technically an MPA, although it may be coincident with an MPA and can strengthen MPA designations given that States usually cannot impose restrictions to navigation by international shipping without IMO's

[286] IMO, Revised Guidelines for the identification and designation of Particularly Sensitive Sea Areas, 2005. A.982(24), Annex, para 1.2.
[287] Ibid and UNEP-WCMC, 'A review of area-based planning tools. What is the potential for cross-sectoral planning in areas beyond national jurisdiction?', 51;
[288] Karen N Scott and David L Vanderzwaag, 'Polar Oceans and Law of the Sea' in Donald Rothwell and others, *The Oxford handbook of the law of the sea* (First edn, Oxford University Press 2015), 750.
[289] IMO, Revised Guidelines for the identification and designation of Particularly Sensitive Sea Areas, 2005, para 1.5.
[290] Ibid, para 1.4.
[291] Ibid, para 3.1.
[292] Ibid, para 4.5.

involvement.[293] The areas designated or under consideration as PSSAs are usually sites of high conservation value. The ecological criteria adopted by the IMO[294] are often identical and in some cases go beyond those used for MPA selection.[295] Therefore, PSSAs can be viewed as complementary to MPAs in many ways. Special Areas and PSSAs can be established in areas within national jurisdiction and beyond (see section 2.b).[296]

4. A New Treaty for Biodiversity Beyond National Jurisdiction: Hope for Coherence?

There have been calls for a new global legal framework for better conservation of marine biological diversity,[297] one which recognizes the interactive, transboundary nature of our oceans both within and beyond national jurisdictions.[298] In addition to the lack of a global framework to establish a comprehensive system of MPAs in ANBJ, there are significant regulatory gaps including incomplete coverage by existing instruments, the absence of an overarching set of agreed principles for ecosystem-based, science-based, precautionary approaches to ocean governance (see Chapter Four) and a disjointed institutional framework lacking mechanisms for coordination across sectors or regions.[299]

In recognition of the fact that measures by individual States or regional and sectoral bodies are no longer sufficient to conserve the high seas due to the transboundary nature of the ocean, the international community initiated negotiations for the development of a new internationally legally binding instrument (ILBI) under UNCLOS for the conservation and sustainable use of marine biodiversity in areas beyond national

[293] Diz and others, 'Mainstreaming marine biodiversity into the SDGs: The role of other effective area-based conservation measures (SDG 14.5)', 258.
[294] Uniqueness or rarity, critical habitat, dependency, representativeness, diversity, productivity, spawning or breeding grounds, naturalness, integrity, fragility/vulnerability, biogeographic importance. See IMO, Revised Guidelines for the identification and designation of Particularly Sensitive Sea Areas, 2005. A.982(24), Annex, para 4.
[295] Ibid.
[296] UNEP-WCMC, 'A review of area-based planning tools. What is the potential for cross-sectoral planning in areas beyond national jurisdiction?', 49.
[297] Tanaka, *The International Law of the Sea* (2019), 408.
[298] David Vousden, 'Large marine ecosystems and associated new approaches to regional, transboundary and 'high seas' management' in Bowman M, Davies PGG and Goodwin EJ (eds.) *Research Handbook on International Marine Environmental Law* (Edward Elgar Publishing 2015), 409.
[299] See further Gjerde, Clark and Harden-Davies, 'Building a Platform for the Future: the Relationship of the Expected New Agreement for Marine Biodiversity in Areas beyond National Jurisdiction and the UN Convention on the Law of the Sea', 4-5.

jurisdiction in September 2018,[300] after more than a decade of protracted discussions and debate.[301] There are hopes that the ongoing negotiations will provide a solution to the significant regulatory gaps in the existing international governance framework, which have prevented progress to date on addressing the increasing threats to high seas biodiversity. However, given the realities of international law making, it is unlikely that this process will solve all problems of incoherence and lack of coordination among different regimes concerning the conservation of marine natural resources and the protection of the environment.[302] Furthermore, the package of issues for negotiation is limited to four areas: marine genetic resources, including benefit-sharing, area-based management tools, including Marine Protected Areas; Environmental Impact Assessments; and capacity-building and marine technology transfer[303] and it is intended to complement, not undermine, existing agreements, institutions, and arrangements.[304] Chapter Five contains a detailed discussion assessing the potential impact of any new agreement on the establishment of MPAs and TBMPAs in a regional setting.

5. Challenges for the Establishment and Management of Transboundary MPAs

As Chapters Two and Three have shown, MPAs offer a clear mechanism for States to deliver on their commitments under legally binding instruments such as UNCLOS, the CBD, Regional Seas Conventions and 'soft' measures such as the Aichi targets and SDG 14. MPAs and other ABMTs can also contribute to the achievement of other SDGs[305] and international commitments, such as those under the UNFCCC. The 2022 Glasgow

[300] UN General Assembly Resolution on an International legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, A/RES/72/249, 24 December 2017. For a history of discussions leading up to this point, see Glen Wright and others, 'The long and winding road: negotiating a treaty for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction', (2018) IDDRI Studies N 82, 40-46 and www.un.org/bbnj/.
[301] Camille Goodman and Holly Matley, 'Law Beyond Boundaries: innovative mechanisms for the integrated management of biodiversity beyond national jurisdiction' (2018) ICES Journal of Marine Science, 75: 402–404, 403.
[302] Laura Pineshi, 'Inter Legality and the protection of marine ecosystems', 190.
[303] https://www.un.org/bbnj/content/background
[304] Payne, 'Sustainable Management of High Seas Marine Resources: Scoping Note', 8. See further Chapter Five for a detailed discussion on how any new instrument will interact with existing regional ocean governance mechanisms.
[305] Elena Gissi and others, 'Contributions of marine area-based management tools to the UN sustainable development goals' (2022) 330 Journal of cleaner production 129910, 5-6.

Climate Pact[306] officially integrated the ocean for the first time across all areas of work under UNFCCC, via a generic reference to 'ocean-based action'.[307] Despite the lack of explicit language, it has been argued that obligations under UNFCCC may still be interpreted and applied so that MPAs could be recognized and accepted as part of States' nationally determined contributions.[308]

However, as also illustrated by the preceding two chapters, the many different types and definition of MPAs in existence in conjunction with the lack of a comprehensive and coherent international legal framework has led to confusion regarding what counts as an MPA and the legal significance of designation. Many of the global instruments outlined above overlap and in practice many sites around the world have multiple designations based on different grounds, e.g., a national MPA, World Heritage Site, Ramsar site and Special Area. Many of these sites are also designated based on different grounds, e.g., heritage, sectoral, species based. There is disagreement as to whether this enhances the efficacy of a protected area or dilutes it. While some studies have shown that the more designations a site has, the more effectively managed it is, more research is needed to understand whether multiple designations lead to better outcomes for protected areas.[309] On the one hand, the overlap can be justified by considering the specific focus and functions of each instrument, for example Special Areas and PSSAs can assist Governments and MPA managers with regard to managing shipping, which is difficult without IMO support. Sites such as PSSAs can also be very useful in circumstances where MPAs are not politically feasible.[310] Also, sites with significant international recognition

[306] The Glasgow Climate Pack is a package of overarching policy commitments adopted by parties to the UNFCCC, its Kyoto Protocol and the Paris Agreement. It is not formally legally binding. See further Mitchell Lennan and Elisa Morgera, 'The Glasgow Climate Conference (COP26)' (2022) 37 The International Journal of Marine and Coastal Law 137, 4.
[307] Which is not yet defined. Ibid, 5.
[308] Ingvild Ulrikke Jakobsen, 'Marine Protected Areas and Climate Change' in Johansen E, Busch SV and Jakobsen IU, *The Law of the Sea and Climate Change: Solutions and Constraints* (Cambridge University Press 2020), 246; IUCN *Marine Protected Areas and Climate Change*. Issues Brief, November 2017, 2.
[309] E.g., Constance M Schéré, Terence P Dawson and Kate Schreckenberg, 'Multiple conservation designations: what impact on the effectiveness of marine protected areas in the Irish Sea?' (2020) 27 International Journal of Sustainable Development & World Ecology 596. See also Thomas Schaaf and Diana Clamote Rodrigues, *Managing MIDAs: Harmonising the Management of Multi-Internationally Designated Areas: Ramsar Sites, World Heritage Sites, Biosphere Reserves and UNESCO Global Geoparks* (IUCN 2016).
[310] Notarbartolo di Sciara and Agardy, 'Building on the Pelagos Sanctuary for Mediterranean marine mammals', 169.

and global prestige such as WHC and Ramsar help to attract longer term technical and financial support[311] and have a "synergetic effect".[312]

However, difficulties can arise due to different management regimes, goals and objectives of different designations, with the potential for misinterpretation of zones and possible conflicts of interest.[313] Management challenges could include the following: different national authorities in charge of the different designations without a mechanism for coordination, different reporting cycles and confusion among local communities and stakeholders regarding the significance of different designations.[314] It is therefore critical that MPAs with multiple designations ensure legal coherence and harmonization between the different protected areas. It has been suggested that in a situation with multiple designations, a platform to coordinate and manage different designations should be formed.[315] A unified, overall management plan which reflects all designations has also been suggested as a solution.[316] Given the significant amount of scientific data, time and resources that are involved in the designation of a protected area, there have been calls for better integration, collaboration and convergence among international regimes to minimise potential inefficiencies.[317]

In addition to the lack of certainty over what counts as an MPA, the different regulatory frameworks applying in distinct maritime zones under UNCLOS, as outlined in Section 2(a)(i) of this chapter, mean that different activities are permitted in each zone, thus posing a challenge for effective management. This becomes especially complex when areas beyond national jurisdiction are included in an MPA network, given the lack of individual State responsibility. In this regard, it can be said that the rules of international law have a significant influence over the decision-making process regarding MPA

[311] Guerreiro and others, 'The role of international environmental instruments in enhancing transboundary marine protected areas: An approach in East Africa', 101; Schaaf and Rodrigues, *Managing MIDA*, xiv.
[312] UNESCO Technical Guidelines for Biosphere Reserves 2021, 23.
[313] Ibid, 23; 44.
[314] Schaaf and Rodrigues, *Managing MIDAs*, xvi.
[315] Ibid, 64.
[316] UNESCO Technical Guidelines for Biosphere Reserves 2021, 89; Julia Roessger, Joachim Claudet and Barbara Horta e Costa, 'Turning the tide on protection illusions: The underprotected MPAs of the 'OSPAR Regional Sea Convention'' (2022) 142 Marine Policy 105109, 7.
[317] Guerreiro and others, 'The role of international environmental instruments in enhancing transboundary marine protected areas: An approach in East Africa', 101; Gissi and others, 'Contributions of marine area-based management tools to the UN sustainable development goals', 10.

designation and implementation,[318] but arguably not in manner that is supportive of establishment of TBMPAs. Rather the effects of fragmentation of international law and ocean governance are most visible when it comes to the establishment and management of transboundary ecosystems.[319] The fragmented state of ocean governance and the lack of a supportive international legal framework to facilitate transboundary marine conservation has resulted in a situation where most TBMPAs have been established in an *ad hoc* manner, either through a formal legally binding approach such as a specific bilateral treaty concluded with neighbouring States; under a multilateral legal framework such as a Regional Seas Convention (see e.g. Chapter Six); or via a non-binding model such as Memorandums of Understanding or Declarations of Intent (see e.g. Chapter Seven). [320] While there is no 'perfect' model, formal treaties have been advocated by legal scholars for offering the most direct approach, laying down explicit rights and obligations and providing the strongest legal basis for long term transboundary cooperation.[321] The IUCN-WCPA Transboundary Conservation Group has identified situations where formal agreements are more appropriate than soft law: "When the relations between countries are hostile or unfriendly; when existing national laws hinder transboundary cooperation; where governments do not have a strong and long history of transboundary collaboration; where there are significant legal, socio-cultural, ecological and economic differences between countries."[322] While formal agreements can be more sustainable in the long term and help with creating legitimacy, they do not always guarantee a successful outcome.[323] Disadvantages can include the complex and cumbersome procedures to set up an international agreement in the first place.[324] In contrast, non-binding informal agreements can be quicker and easier to set up and can play an important role in promoting

[318] Tullio Scovazzi and Ilaria Tani, 'Problems posed by marine protected areas having a transboundary character' in Mackelworth P (ed.) *Marine Transboundary Conservation and Protected Areas* (Routledge 2016), 17.
[319] Platjouw, *Environmental law and the ecosystem approach: maintaining ecological integrity through consistency in law*, 212.
[320] Scovazzi and Tani, 'Problems posed by marine protected areas having a transboundary character', 22. For other examples of non-binding agreements for TBMPAs see generally Peter Mackelworth (ed.) *Marine Transboundary Conservation and Protected Areas* (Routledge 2016).
[321] Ibid; Vasilijević, *Transboundary Conservation: A systematic and integrated approach,* 74.
[322] Ibid.
[323] Ibid, 74, 82.
[324] Ibid, 74

cooperative, friendly relations and joint action, and sometimes lead to more formal arrangements over time.[325] Perhaps in this context, it is arguable that soft law acts as a driver of convergence between States?

The next chapter will explore the potential of the ecosystem approach to act as an integrative framework to overcome some of the fragmentation pervasive in the international legal framework for marine biodiversity protection. While it may be difficult to undo or reverse the reality of the existing fragmented ocean governance framework, it is feasible to create better interconnectivity between different sectors, marine regions and marine ecosystems. The next chapter will also discuss options to enhance legal recognition of ecological connectivity and advocate for the use of TBMPAs as an operational tool to achieve not only ecological connectivity but also connectivity between different regimes, thus acting as an integrative tool and driver of convergence.

[325] Ibid.

Chapter Four: The Impact of the Ecosystem Approach on the Evolution of Marine Protected Areas: From Individual Sites to Transboundary Networks

1. Towards Integration: The Ecosystem Approach to Marine Biodiversity Protection

A conceptual framework for integrative action in ocean governance is the 'ecosystem approach', which has emerged out of an increased scientific understanding of the importance of ecosystems and ocean connectivity. Despite its now relatively widespread application in international environmental law, legal scholarship on the status and implications of the ecosystem approach remains 'surprisingly thin' and it is yet to be included among the principles of international environmental law.[1] The next section will trace the development of the ecosystem approach in international environmental law, from its origins in soft law instruments to becoming endorsed as the main framework for action under the Convention on Biological Diversity, and its growing application in a marine governance context. Challenges to the operation of the concept in practice will also be discussed.

a. The 'Ecosystem Approach': An Elusive Concept

There is no universally agreed definition of the ecosystem approach in international law.[2] The Secretariat of the Convention on Biological Diversity (CBD)[3] has described it as being difficult to define in a simple manner,[4] while de Lucia goes further calling it an 'elusive, unstable and contested' concept,[5] whose various articulations render the task of

[1] Elisa Morgera, 'The ecosystem approach and the precautionary principle.' In Razzaque J and Morgera E (eds.), *Biodiversity and Nature Protection* (Edward Elgar Publishing 2017), 71.
[2] UN General Assembly, Report on the work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea at its seventh Meeting (17 July 2006) Part A of Report A/61/156, 2, known as the ICP-7 report; Rachel D Long, Anthony Charles and Robert L Stephenson, 'Key principles of marine ecosystem-based management' (2015) 57 Marine Policy 53, 54.
[3] Convention on Biological Diversity (1992) 1760 UNTS 79.
[4] Secretariat of the Convention on Biological Diversity, *The Ecosystem Approach* (CBD Guidelines 2004), 3.
[5] Vito De Lucia, 'Competing Narratives and Complex Genealogies: The Ecosystem Approach in International Environmental Law' (2015) 27 Journal of Environmental Law 91, 93; 97.

finding a meaningful common denominator challenging.[6] The ecosystem approach has been interpreted differently by various environmental institutions and regimes,[7] and is referred to interchangeably as 'Ecosystem Based Management'[8] in international discourse.[9] It is likely that the evolving nature of the ecosystem approach has contributed to the lack of clarity surrounding its meaning. It is a concept which continues to develop in parallel with scientific understanding of the nature of ecosystems and their core principles.[10] In fact, Morgera has suggested that the translation of the scientific notion of the ecosystem into a legal construct has provided the basis for the normative development of the ecosystem approach, thereby having a 'law-making effect'.[11]

In recent years, an increasing amount of doctrine[12] and technical guidance[13] has helped to clarify the meaning and application of the ecosystem approach, as well as its core

[6] Vito De Lucia, 'A critical interrogation of the relation between the ecosystem approach and ecosystem services' (2018) 27 Review of European, Comparative & International Environmental Law 104, 105.
[7] Froukje Maria Platjouw, *Environmental law and the ecosystem approach: maintaining ecological integrity through consistency in law* (Routledge 2016), 20.
[8] On Ecosystem Based Management, see *inter alia*, R. Edward Grumbine, 'What Is Ecosystem Management?' (1994) 8 Conservation Biology 27; Long, Charles and Stephenson, 'Key principles of marine ecosystem-based management' and Simone D. Langhans and others, 'The potential of ecosystem-based management to integrate biodiversity conservation and ecosystem service provision in aquatic ecosystems' (2019) 672 Science of the Total Environment 1017.
[9] Long, Charles and Stephenson, 'Key principles of marine ecosystem-based management', 54; Raphaël Billé and others, *Regional oceans governance: making Regional Seas programmes, regional fishery bodies and large marine ecosystem mechanisms work better together* (UNEP Regional Seas Reports and Studies No 197, 2016), 6.
[10] Ronan Long, 'Legal aspects of ecosystem-based marine management in Europe' (2012) 26 Ocean Yearbook 417, 420; See *inter alia* Dan Tarlock, 'Ecosystems' in Jutta Brunnée, Daniel Bodansky and Ellen Hey, *The Oxford handbook of international environmental law* (Oxford University Press 2007), 577-579; Daniela Diz, *Fisheries management in areas beyond national jurisdiction: the impact of ecosystem based law-making*, vol 13 (Martinus Nijhoff Publishers 2012); 1-3; Long, Charles and Stephenson, 'Key principles of marine ecosystem-based management', 54-56, for a brief history of the ecosystem concept and its principles.
[11] Morgera, 'The ecosystem approach and the precautionary principle', 71.
[12] See, *inter alia*, Jutta Brunnée and Stephen J. Toope, 'Environmental Security and Freshwater Resources: Ecosystem Regime Building' (1997) 91 The American Journal of International Law 26; Arie Trouwborst, 'The Precautionary Principle and the Ecosystem Approach in International Law: Differences, Similarities and Linkages' (2009) 18 Review of European Community & International Environmental Law 26; Long, Charles and Stephenson, 'Key principles of marine ecosystem-based management'; Platjouw, *Environmental law and the ecosystem approach: maintaining ecological integrity through consistency in law*; Elizabeth A. Kirk, 'The Ecosystem Approach and the Search for An Objective and Content for the Concept of Holistic Ocean Governance' (2015) 46 Ocean Development & International Law 33; De Lucia, 'Competing Narratives and Complex Genealogies: The Ecosystem Approach in International Environmental Law'; Morgera, 'The ecosystem approach and the precautionary principle'; David Langlet and Rosemary Rayfuse, *The ecosystem approach in ocean planning and governance: Perspectives from Europe and beyond* (Brill 2018).
[13] See *inter alia* UNGA, ICP-7 report (2006); Secretariat of the CBD, *The Ecosystem Approach*.

elements. Connectivity and integration are central to the idea. An early study by Brunnée and Toope describe it as requiring:

> "consideration of the whole system rather than individual components. Living species and their physical environments must be recognized as interconnected, and the focus must be on the interaction between different sub-systems and their responses to stresses resulting from human activity."[14]

Amidst the confusion surrounding its meaning, Trouwborst reminds us that the purpose of the ecosystem approach is the preservation and/or restoration of ecosystem health or integrity.[15] He goes on to extract three strands of generic agreement:

> "(1) The holistic management of human activities, (2) based on the best available knowledge on the components, structure and dynamics of ecosystems, (3) and aimed at satisfying human needs in a way that does not compromise the integrity, or health, of ecosystems." [16]

The work of the UN General Assembly has also been helpful in generating consensus on key components of the ecosystem approach. At the seventh session of the Open-ended Informal Consultative Process on Oceans and the Law of the Sea (UNICPOLOS) in 2006, the resulting report (ICP-7) provided a comprehensive list of 14 elements including *inter alia*: [17]

- "Emphasize **conservation** of ecosystem structures and their functioning and key processes in order to maintain ecosystem goods and services;
- Be applied within **geographically specific areas** based on **ecological criteria**;
- Emphasize the **interactions** between human activities and the ecosystem and among the components of the ecosystem and among ecosystems;
- Take into account factors originating **outside the boundaries** of the defined management area that may influence marine ecosystems in the management area;

[14] Brunnée and Toope, 'Environmental Security and Freshwater Resources: Ecosystem Regime Building', 55.
[15] Trouwborst, 'The Precautionary Principle and the Ecosystem Approach in International Law: Differences, Similarities and Linkages', 28, 32.
[16] Ibid, 28.
[17] UNGA ICP-7 report (2006), para 6.

- Be inclusive, with stakeholder and local communities' **participation** in planning, implementation and management;
- Be based on **best available knowledge**, including traditional, indigenous and scientific information and be adaptable to new knowledge and experience;
- Use **integrated decision-making processes** and management related to multiple activities and sectors."[18]

Given that scientific understanding of ecosystems is incomplete, the ecosystem approach has been closely associated with precautionary approaches and adaptive management.[19] The precautionary principle or approach entails taking early, preventative action in response to environmental threats, even in the absence of scientific certainty,[20] and has been described as an 'integral component' of the ecosystem approach.[21] Adaptive management offers a practical tool for dealing with law's apparent incompatibility with uncertainty. It provides a "flexible decision-making process that can be adjusted in the face of uncertainties as outcomes from management actions and other events become more understood through careful monitoring of these outcomes."[22] It is often described as an iterative or ongoing learning process.[23] The CBD has explained that the ecosystem approach requires adaptive management "to deal with the complex and dynamic nature

[18] Emphasis added by author.
[19] UNGA ICP-7 report (2006), para. 6 (h); Morgera, 'The ecosystem approach and the precautionary principle', 75. The normative basis of both precaution and adaptive management is still unsettled. For example, there remains no consensus on whether precaution is a 'principle', with many, including the ICJ, referring to it as an 'approach'. See further Pierre-Marie Dupuy and Jorge E. Viñuales, *International environmental law* (Cambridge University Press 2015), 61, 63.
[20] Trouwborst, 'The Precautionary Principle and the Ecosystem Approach in International Law: Differences, Similarities and Linkages', 27. Rio Declaration on Environment and Development (1992) 31 ILM 874, Principle 15. According to Dupuy and Viñuales, ibid, "the underlying idea is that the lack of scientific certainty about the actual or potential effects of an activity must not prevent States from taking appropriate measures", 61.
[21] Declaration of the First Joint Ministerial Meeting of the Helsinki and OSPAR Commissions (Bremen, 26 June 2003) (OSPAR/HELCOM statement), Annex 5 ('Towards an Ecosystem Approach to the Management of Human Activities'), para 5.
[22] B.K. Williams, R.C. Szaro, C.D. Shapiro, 'Adaptive Management: the US Department of the Interior Technical Guide' (2009) US Department of the Interior. Referred to in Célia Le Lièvre, 'Sustainably reconciling offshore renewable energy with Natura 2000 sites: An interim adaptive management framework' (2019) 129 Energy Policy 491, 496, as the most recognized definition of adaptive management in the literature.
[23] Ibid and Morgera, 'The ecosystem approach and the precautionary principle', 76.

of ecosystems and the absence of complete knowledge or understanding of their functioning."[24]

Several international organizations have adopted working definitions of the ecosystem approach and attempted to make progress on elaborating its meaning and operation. The Conference of Parties (COP) to the CBD have defined it in light of the objectives of the Convention:[25]

> "a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way."[26]

This definition is concerned with integration[27] and equity,[28] recognizing that humans are an integral component of many ecosystems.[29] Moynihan describes integration in the context of the ecosystem approach as meaning integration across sectors, between governance levels, between modern science and traditional methods and between different legal and management strategies.[30] In her 2020 study on ecosystem based integrated ocean management, Lieberknecht refers to five categories of integration: integration of governance, knowledge, stakeholders, system dynamics and *transboundary integration across administrative and biophysical boundaries.*[31] It is noteworthy that no

[24] CBD Decision V/6 *Ecosystem Approach* UNEP/COP/5/23 (2000), A (4).
[25] Ibid, A (1) states that the application of the Ecosystem Approach will help to reach a balance of the three objectives of the Convention: conservation, sustainable use, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.
[26] CBD Decision V/6 (2000), A (1).
[27] CBD Decision VII/11 *Ecosystem Approach* UNEP/CBD/COP/7/21 (13 April 2004), para. A.3 referred to the ecosystem approach as providing an integrating framework for the implementation of the Convention's objectives.
[28] CBD Decision V/6 (2000), para. 6. Principle 1 states that ecosystems should be managed for their intrinsic values and for the tangible or intangible benefits for humans, in a fair and equitable way. The operational guidance contained in the same Decision at para. 9 promotes the fair and equitable sharing of benefits with the stakeholders responsible for managing ecosystems and supporting ecosystem services. See Mara Ntona and Elisa Morgera, 'Connecting SDG 14 with the other Sustainable Development Goals through marine spatial planning' (2018) 93 Marine Policy 214, 218.
[29] CBD Decision V/6 (2000), A (2); Morgera, 'The ecosystem approach and the precautionary principle', 72.
[30] Ruby Moynihan, *Transboundary freshwater ecosystems in international law: The role and impact of the UNECE environmental regime* (Cambridge University Press 2021). On integration, see further De Lucia, 'A critical interrogation of the relation between the ecosystem approach and ecosystem services', 105 and Morgera, 'The ecosystem approach and the precautionary principle', 72.
[31] See further Louise M. Lieberknecht, *Ecosystem-Based Integrated Ocean Management: A Framework for Sustainable Ocean Economy Development*. A report for WWF-Norway by GRID-Arendal (2020), 16-23.

particular spatial unit of scale is included in the CBD definition, rather the scale of analysis and action is to be determined by the problem being addressed.[32] This thesis will argue that transboundary integration across boundaries is best addressed on a regional scale (see further Chapter Five and case studies).

The Regional Seas Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR),[33] which is notable for its early adoption of the ecosystem approach, defines the ecosystem approach as:

> "the comprehensive integrated management of human activities based on the best available scientific knowledge of the ecosystem and its dynamics, in order to identify and take action on drivers, activities and pressures that adversely affect the health of marine ecosystems. The ecosystem approach thereby achieves the sustainable use of ecosystem goods and services and the maintenance of ecosystem integrity".[34]

Long observes that the rationale for adopting such an anthropogenic approach is that, while the ecosystem itself may not be managed, the human activities that interact with and impact upon the ecosystem may be managed with a view to conserving biodiversity.[35] The UN General Assembly has also made it clear that ecosystem approaches "should be focused on managing human activities in order to maintain, and, where needed, restore ecosystem health."[36] An anthropocentric focus is also evident in the conceptual framework of ecosystem services,[37] seen by many as one of the core elements of the

[32] OSPAR/HELCOM statement, para 3.
[33] Convention for the Protection of the Marine Environment of the North East Atlantic (1992) 2354 UNTS 67.
[34] Strategy of the OSPAR Commission for the Protection of the Marine Environment of the North East Atlantic 2030. Agreement 2021-01: North East Atlantic Environment Strategy (NEAS) (replacing Agreement 2010-02), 5.
[35] Long, 'Legal aspects of ecosystem-based marine management in Europe', 423.
[36] See e.g., Resolution 61/222 on Oceans and the Law of the Sea (20 December 2006), para. 119 (b); Resolution 62/215 (22 December 2007), para 99(b); Resolution 63/111 (5 December 2008), para 117(b). Cited in Trouwborst, 'The Precautionary Principle and the Ecosystem Approach in International Law: Differences, Similarities and Linkages', 28.
[37] See further Millennium Ecosystem Assessment 2005 which provides a typology of four categories of ecosystem services: supporting, provisioning, regulating and cultural services and Chapter One.

ecosystem approach.[38] Indeed, several definitions of the ecosystem approach refer explicitly to the ecosystem services they provide.[39]

b. Emergence and Development of the Ecosystem Approach in International Law

The 'ecosystem approach' as a normative framework is a relatively recent development. The first tentative indications of the ecosystem approach and of ecosystems becoming an object of conservation and protection in international law can be traced back to the 1970s.[40] Several non-binding soft law instruments, beginning with the 1972 Stockholm Declaration on the Human Environment,[41] contained formative elements of what would become the ecosystem approach.[42] The adoption of the 1971 Ramsar Convention on Wetlands of International Importance was also an important environmental milestone of this era.[43] The notion of 'wise use' is at the heart of the Convention and has been explicitly linked to the ecosystem approach.[44] The focus of the Convention has shifted over time

[38] De Lucia, 'Competing Narratives and Complex Genealogies: The Ecosystem Approach in International Environmental Law', 104 citing Ole Vestergaard and others, *Taking Steps Towards Marine and Coastal Ecosystem-based Management - An Introductory Guide* (UNEP 2011).
[39] For example, the definition adopted by the UN Environment Programme (UNEP) is similar to the CBD but replaces 'conservation' with 'sustainable delivery of ecosystem services.' See Billé and others, *Regional oceans governance*, 8.
[40] For a more detailed overview, see Long, 'Legal aspects of ecosystem-based marine management in Europe', 433-440; Platjouw, *Environmental law and the ecosystem approach: maintaining ecological integrity through consistency in law*, 28-42.
[41] Stockholm Declaration on the Human Environment (1972) UN Doc. A/CONF48/14/Rev.1
[42] Principle 2 of the Stockholm Declaration states that "the natural resources of the earth…especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management..." 10 years later, the UN General Assembly, in principle 4 of the World Charter for Nature (28 October 1982) A/RES/37/7 called upon States to manage ecosystems and organisms in a way that would not endanger the integrity of those other ecosystems or species with which they coexist. For a more detailed overview, see Trouwborst, 'The Precautionary Principle and the Ecosystem Approach in International Law: Differences, Similarities and Linkages', 29.
[43] Convention on Wetlands of International Importance especially as Waterfowl Habitat (1971) 996 UNTS 245.
[44] The definition of 'wise use' was updated in 2005, taking into account the widespread acceptance of the ecosystem approach: "Wise use of wetlands is the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development". Ramsar, Conference of the Parties 9 'A Conceptual Framework for the wise use of wetlands and the maintenance of their ecological character' (November 2005) Resolution IX.1 Annex A (2005), para. 22. The definition explicitly cites the Ecosystem Approach as developed by the CBD (Decision V/6) and that applied by HELCOM and OSPAR in their Joint Statement in 2003. See further, C. Max Finlayson and others, 'The Ramsar Convention and Ecosystem-Based Approaches to the Wise Use and Sustainable Development of Wetlands' (2011) 14 Journal of International Wildlife Law & Policy 176, 191. Morgera, 'The ecosystem approach and the precautionary principle' highlights an interesting circular evolution here whereby the ecosystem approach elaborated under the CBD built upon the earlier notion of 'wise use' contained in the Ramsar Convention.

from an original treaty on waterfowl habitat, to the protection of wetlands as an ecosystem, and to the ecosystem services provided by wetlands,[45] illustrating the normative evolution of ecosystem protection. The 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)[46] and the 1979 Convention on Migratory Species (CMS) [47] also warrant a brief mention. While they are focused on the protection of species, they also refer to the importance of these species within their ecosystems,[48] which has an indirect effect of promoting habitat conservation and thus the conservation of ecosystems.[49] The ecosystem approach is currently taken into account in CITES practice.[50]

Beginning in the early 1980s, specific reference to the ecosystem approach began to appear in a number of international treaties concerning the marine environment.[51] The 1980 Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR)[52] was one of the first instruments to utilize the ecosystem approach as a primary normative framework[53] and is generally regarded as a leader in its implementation.[54] The CCAMLR covers the entire Antarctic marine system[55] and has a broad mandate to conserve Antarctic marine living resources, which includes their 'rational use'.[56] This means that 'harvesting and associated activities' are permitted in the Convention area as long as such exploitation does not endanger the population levels of

[45] Dupuy and Viñuales, *International environmental law*, 173.
[46] Convention on International Trade in Endangered Species of Wild Fauna and Flora 983 UNTS 243.
[47] Convention on the Conservation of Migratory Species of Wild Animals 1651 UNTS 333.
[48] Platjouw, *Environmental law and the ecosystem approach: maintaining ecological integrity through consistency in law*, 30.
[49] Tarlock, *Ecosystems*, 590.
[50] CITES, Fifty-third meeting of the Standing Committee, Synergy between CITES and the Convention on Biological Diversity (CBD)' (June 2005) SC53 Doc.8 (rev. 1). Cited in Platjouw, *Environmental law and the ecosystem approach: maintaining ecological integrity through consistency in law*, 30.
[51] Long, 'Legal aspects of ecosystem-based marine management in Europe', 433.
[52] Convention on the Conservation of Antarctic Marine Living Resources (1980) 19 ILM 841.
[53] Philippe Sands and others, *Principles of international environmental law* (Fourth edn, Cambridge University Press 2018), 457; De Lucia, 'Competing Narratives and Complex Genealogies: The Ecosystem Approach in International Environmental Law', 107.
[54] Adriana Fabra and Virginia Gascón, 'The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) and the ecosystem approach' (2008) 23 The International Journal of Marine and Coastal Law 567, 575-581 for a detailed discussion on the implementation of the ecosystem approach in the CCAMLR regime.
[55] Which it describes as 'the complex of relationships of Antarctic marine living resources with each other and with their physical environment' in Article I (3) CCAMLR.
[56] Article II (1) and (2) CCAMLR.

the harvested species or the ecological relationship as a whole between the marine living resources in the area.[57] Furthermore, CCAMLR prohibits changes to the marine ecosystem which are not potentially reversible over two or three decades.[58] The CCAMLR is a good illustration of the ecosystem approach in action via its incorporation of basic principles of ecosystem ecology, its recognition of the importance of ecosystem interrelationships and its focus on the various components of the marine ecosystem.[59]

1982 heralded the adoption of the United Nations Convention on the Law of the Sea (UNCLOS),[60] which, as discussed in Chapter Two, provides the overarching legal framework for the governance of the oceans. In contrast to the CCAMLR, the ecosystem approach manifests itself in a more implicit manner in UNCLOS.[61] UNCLOS does not contain a legally binding obligation to pursue an ecosystem approach. While it does recognize that "the problems of ocean space are closely interrelated and need to be considered as a whole"[62] and contains some elements of integrated decision making,[63] UNCLOS contains few explicit references to the concept of the ecosystem[64] and promotes a zonal and sectoral approach to ocean governance.[65] A critical turning point was the adoption of Agenda 21 at the 1992 United Nations Conference on Environment and Development (UNCED)[66] which, via its explicit promotion of a holistic approach to

[57] Article II (3); see also Long, 'Legal aspects of ecosystem-based marine management in Europe', 433-434
[58] Article II(3)(c) CCAMLR.
[59] De Lucia, 'Competing Narratives and Complex Genealogies: The Ecosystem Approach in International Environmental Law', 107.
[60] United Nations Convention on the Law of the Sea (1982) 1833 UNTS. 397.
[61] Platjouw, *Environmental law and the ecosystem approach: maintaining ecological integrity through consistency in law*, 31.
[62] Third Recital to Preamble of UNCLOS.
[63] For example, Articles 61 and 119 UNCLOS require decisions in the context of fisheries to consider environmental, scientific, economic and social factors and to consider the impact on associated or dependent species when establishing conservation measures. See further Kirk, 'The Ecosystem Approach and the Search for An Objective and Content for the Concept of Holistic Ocean Governance', 40.
[64] With the exception of Article 194(5) UNCLOS which requires parties to protect rare or fragile ecosystems and Article 145(a) which calls upon states to prevent interference with the 'ecological balance of the marine effects of fishing on dependent or associated species.'
[65] Karen Scott, 'Integrated Oceans Management. A New Frontier in Marine Environmental Protection' in Rothwell D and others, *The Oxford handbook of the law of the sea* (First edn, Oxford University Press 2015), 464, 481-482.
[66] UNCED, Agenda 21: Programme of Action for Sustainable Development (1992) UN Doc A/ Conf. 151/26. The Rio Declaration on Environment and Development, also adopted at UNCED, recognised the "integral and interdependent nature of the Earth" in its Preamble.

oceans management, became a catalyst for further development of the ecosystem approach.[67] Chapter 17 observes that:

> "the marine environment - including the oceans and all seas and adjacent coastal areas - form an integrated whole that is an essential component of the global life support system […]. This requires new approaches to marine and coastal area management and development, at the national, subregional, regional and global levels […] that are integrated in content and are precautionary and anticipatory in ambit".[68]

Pineshi opines that Agenda 21 in conjunction with *The Future We Want*[69] characterize the ecosystem approach as the most appropriate tool for implementing the obligations of UNCLOS.[70] The parties to the CBD subsequently approved the ecosystem approach as the primary framework for implementation of its objectives in 1995,[71] making it the first international treaty to take a holistic, ecosystem-based approach to biodiversity conservation and sustainable use.[72] The CBD is considered a leader in the adoption of the ecosystem approach and has done more to elaborate the concept than any other regime,[73] capitalizing on previous legal developments in international environmental law such as sustainable forest management.[74] While the CBD contains a definition of an 'ecosystem' as "a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit",[75] there is no explicit basis for the ecosystem approach in the text of the CBD.[76] Due to the lack of development at an

[67] Trouwborst, 'The Precautionary Principle and the Ecosystem Approach in International Law: Differences, Similarities and Linkages', 26.
[68] Chapter 17.1, Agenda 21.
[69] Outcome document of UN Conference on Sustainable Development 2012. See UN General Assembly, *The Future We Want*, A/RES/66/288, 11 September 2012.
[70] Laura Pineshi, 'Inter legality and the protection of Marine Ecosystems' in Jan Klabbers and Gianluigi Palombella, *The Challenge of Inter-legality* (Cambridge University Press 2019), 191.
[71] CBD-COP 2 Decision II/8 (November 1995), para 1. CBD-COP 7, Decision VII/11, para. A.3.
[72] Secretariat of the CBD *Ecosystem Approach*, 2.
[73] De Lucia, 'A critical interrogation of the relation between the ecosystem approach and ecosystem services', 109; Platjouw, *Environmental law and the ecosystem approach: maintaining ecological integrity through consistency in law*, 32.
[74] CBD Decision VII/11 (2004), para. 7 and Annex II; Secretariat of the CBD *Ecosystem Approach*, Annex III. Morgera, 'The ecosystem approach and the precautionary principle', 71.
[75] Article 2, CBD.
[76] However, Platjouw points out that both the protection of ecosystems as well as the rehabilitation and restoration of degraded ecosystems are promoted in Articles 8(d) and 8(f) of the Convention. Platjouw,

international level, the CBD parties recognized the need to elaborate on its interpretation and application.[77] Thus, at their fifth meeting in Nairobi, Kenya in 2000, the Conference of Parties (COP) agreed upon a definition of the ecosystem approach and recommended the implementation of 12 interlinked and complementary principles of the ecosystem approach, known as the Malawi Principles (Figure 4.1).[78] They also issued five points of Operational Guidance for their application (Figure 4.2).[79]

Environmental law and the ecosystem approach: maintaining ecological integrity through consistency in law, 32.

[77] In CBD Decision IV/1, B (1998), the need for a workable description and further elaboration of the ecosystem approach was acknowledged. Morgera, 'The ecosystem approach and the precautionary principle', 71.

[78] CBD Decision V/6 (2000), Section B.

[79] Ibid, Section C. See CBD Decision VII/11 (2004) and Secretariat of the CBD *Ecosystem Approach* for detailed guidance on the rationale behind the Malawi Principles and their implementation.

Figure 4.1 The Malawi Principles

1. The objectives of management of land, water and living resources are a matter of societal choice.
2. Management should be decentralised to the lowest appropriate level.
3. Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.
4. Recognising potential gains from management there is a need to understand the ecosystem in an economic context.
5. Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.
6. Ecosystems must be managed within the limits of their functioning.
7. The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.
8. Recognising the varying temporal scales and lag effects that characterise ecosystem processes, objectives for ecosystem management should be set for the long term.
9. Management must recognise that change is inevitable.
10. The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.
11. The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.
12. The ecosystem approach should involve all relevant sectors of society and scientific disciplines.

Figure 4.2 Operational Guidance for Application of Malawi Principles

1. Focus on the functional relationships and processes within ecosystems.
2. Enhance benefit-sharing.
3. Use adaptive management practices.
4. Carry out management actions at the scale appropriate for the issue being addressed, with decentralization to the lowest level, as appropriate.
5. Ensure inter-sectoral cooperation.[1]

After the ecosystem approach was endorsed by the parties to the CBD, it gained widespread recognition,[80] particularly in a fisheries management context,[81] where it has been termed the 'ecosystem approach to fisheries' (EAF).[82] The Food and Agriculture Organization of the United Nations (FAO) has promoted the ecosystem approach as best practice.[83] For example, the 1995 FAO Code of Conduct for Responsible Fisheries recognizes the transboundary nature of aquatic ecosystems[84] and its provisions have a broad scope to protect target and non-target species as well as the ecosystems associated with those species.[85] The ecosystem approach also became a key feature of the 1995 United Nations Fish Stocks Agreement (UNFSA),[86] which supplements UNCLOS and was designed to apply to fish stocks, regardless of their geographic location. It therefore requires States to take into account the transboundary impacts of their decisions.[87] The basic requirements for an ecosystem approach are set out in Article 5 of UNFSA which requires coastal States and States fishing on the high seas to *inter alia* assess the impacts

[80] E.g., The UN Convention on the Law of Non-Navigational Uses of International Watercourses (21 May 1997, entered into force 17 August 2014)) created an obligation for states to 'protect and preserve the ecosystems of international watercourses' in Article 20. On the ecosystem approach and international water law, see further Owen McIntyre, 'The Emergence of an 'Ecosystem Approach' to the Protection of International Watercourses under International Law' (2004) 13 Review of European Community & International Environmental Law 1. The ecosystem approach was also endorsed in soft law by the 2002 World Summit on Sustainable Development in its Plan of Implementation which emphasized the need to "develop and facilitate the use of diverse approaches and tools, including the ecosystem approach" in accordance with Chapter 17 of Agenda 21. See the Johannesburg Plan of Implementation of the World Summit on Sustainable Development (2002), UN Doc. A/CONF.199/20, para. 31 c.

[81] For example, the Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem 2001 (FAO/Government of Iceland), recognized the importance of interactions between fishery resources and all components of the ecosystem, and the need to conserve marine environments and called upon States to develop best practice guidelines for introducing ecosystem considerations into fisheries management. See further Erik Jaap Molenaar, 'Ecosystem-based fisheries management, commercial fisheries, marine mammals and the 2001 Reykjavik Declaration in the context of international law' (2002) 17 The International Journal of Marine and Coastal Law 561.

[82] See, generally, FAO *Fisheries Management. The Ecosystem Approach to Fisheries. FAO Technical Guidelines for Responsible Fisheries*. (No 4, Supplement 2. FAO 2003) and Diz, *Fisheries management in areas beyond national jurisdiction: the impact of ecosystem based law-making*.

[83] See e.g., FAO Code of Conduct for Responsible Fisheries 1995 and FAO International Guidelines for the Management of Deep-Sea Fisheries in the High Seas 2008.

[84] FAO Code of Conduct for Responsible Fisheries 1995, Article 6(4).

[85] Platjouw, *Environmental law and the ecosystem approach: maintaining ecological integrity through consistency in law*, 31.

[86] Agreement for the Implementation of the Provisions of the UN Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 4 August 1995 (into force 11 December 2001) 2167 UNTS 3.

[87] Articles 5 and 6 UNFSA. Kirk, 'The Ecosystem Approach and the Search for An Objective and Content for the Concept of Holistic Ocean Governance', 40.

of fishing, other human activities, and environmental factors; adopt where necessary measures for species belonging to the same ecosystem or associated with or dependent upon the target stocks; minimize pollution, waste, discards, and other fishing impacts through measures including the development and use of selective, environmentally safe, and cost-effective fishing gear and techniques; and protect biodiversity in the marine environment.[88] The precautionary approach is explicitly mentioned in UNFSA and is considered to be an essential component of the EAF.[89] UNFSA created an obligation for states to cooperate through Regional Fishery Management Organizations (RFMOs),[90] several of which also adopted the ecosystem approach.[91] However, the actualization of the EAF in this context has been hampered by the fact that RFMOs do not cover the world's oceans and fishing resources in a comprehensive manner. RFMOs generally manage stocks either on a species specific or geographic basis, thus leaving many areas unregulated and many stocks and species unmanaged.[92] RFMOs have been criticized for inconsistent and incomplete progress towards an ecosystem approach[93] and challenges such as inconsistent performance, lack of accountability, lack of capacity and funding, and mixed priorities.[94]

Regional seas conventions (RSCs) are generally viewed as being more consistent with an ecosystem approach given that they have geographical as opposed to sectoral scope.[95]

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[88] Kristina M Gjerde, Nichola A Clark and Harriet R Harden-Davies, 'Building a Platform for the Future: the Relationship of the Expected New Agreement for Marine Biodiversity in Areas beyond National Jurisdiction and the UN Convention on the Law of the Sea' (2019) 33 Ocean Yearbook Online 1, 28.
[89] Arts. 5 (c) and 6 UNFSA. Daniela Diz, 'Marine biodiversity: Unravelling the intricacies of global frameworks and applicable concepts' in Razzaque J and Morgera E (eds.) *Biodiversity and Nature Protection* (Edward Elgar Publishing 2017), 131.
[90] Arts. 10, 11 and 12. See further Chapter Five.
[91] Long, 'Legal aspects of ecosystem-based marine management in Europe', 437.
[92] Diz, 'Marine biodiversity: Unravelling the intricacies of global frameworks and applicable concepts', 130; Rosemary Rayfuse, 'Climate change, marine biodiversity and international law' in Bowman M, Davies PGG and Goodwin EJ (eds.), *Research Handbook on Biodiversity and Law* (Edward Elgar Publishing 2016), 134.
[93] Tuna RFMOs in particular have tended to deal with fisheries management via a species-by-species approach rather than on an ecosystem level. Gjerde, Clark and Harden-Davies, 'Building a Platform for the Future: the Relationship of the Expected New Agreement for Marine Biodiversity in Areas beyond National Jurisdiction and the UN Convention on the Law of the Sea', 32.
[94] Ibid, 32.
[95] Emily Marie Barritt and Jorge E Viñuales, 'Legal Scan: A Conservation Agenda for Biodiversity Beyond National Jurisdictions', *Cambridge Centre for Environment, Energy and Natural Resource Governance, University of Cambridge Working Paper* (2016), 53.

However in practice they have not been as effective as hoped;[96] they have limited mandates which only apply to States which are parties to the relevant treaty and exclude many relevant human activities from their scope of application (see further Chapters Five and Six.) Also, most RSCs do not cover the high seas.[97] As observed by Kirk, different RSCs tend to emphasize different aspects of the ecosystem approach, depending on the regional context, however elements such as the precautionary principle,[98] recognizing the impact of transboundary activities,[99] the best use of scientific knowledge and advice[100] and the involvement of stakeholders[101] can be found in several.[102] The ecosystem approach has been explicitly endorsed by the parties to the Helsinki[103] and OSPAR Conventions, with a recognition that the marine environment is both an ecosystem and interlocking network of ecosystems,[104] and it has been described as the 'overarching principle' in the OSPAR Commission's work.[105] The OSPAR scheme for implementing the ecosystem approach is one of the most highly developed in international environmental law.[106] Cumulative effects are taken into consideration and monitoring, assessment and adaptive management are also stated as essential elements for implementing the ecosystem approach.[107] The adaptive management approach is evident via its use of a 'continuous cycle of steps' which involve setting and coordinating ecological objectives and associated targets and indicators, ongoing management, and regular updating of ecosystem knowledge, research and advice.[108]

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[96] Hanling Wang, 'Ecosystem Management and Its Application to Large Marine Ecosystems: Science, Law, and Politics' (2004) 35 Ocean Development & International Law 41, 60.
[97] With the exception of the OSPAR, Barcelona, Noumea and Lima Conventions as well as CCAMLR. See further Chapter Five.
[98] E.g., Article 3(2) Helsinki Convention (see fn. 103); Article 2(2)(a) OSPAR Convention.
[99] E.g., Article 3 (6) Helsinki Convention.
[100] E.g., Article 13 Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (1995), known as the Barcelona Convention.
[101] E.g., Article 17 Helsinki Convention; Article 15 Barcelona Convention.
[102] Kirk, 'The Ecosystem Approach and the Search for An Objective and Content for the Concept of Holistic Ocean Governance', 41.
[103] Convention on the Protection of the Marine Environment of the Baltic Sea Area (1992) 1507 UNTS 167. Known as the Helsinki Convention or HELCOM.
[104] OSPAR/HELCOM statement, para. 3.
[105] Preamble to Strategy of the OSPAR Commission for the Protection of the Marine Environment of the North East Atlantic 2010–2020, OSPAR Agreement 2010-3; NEAS 2030, 5.
[106] Long, 'Legal aspects of ecosystem-based marine management in Europe', 446-447.
[107] NEAS 2030, 5.
[108] OSPAR Strategy 2010-2020, para 4.3.

Neither UNCLOS nor any other global instrument contains a legally binding obligation to pursue an ecosystem approach and there are no indications that such an obligation is currently part of customary international law.[109] However, there have been developments which suggest this may occur in the future. For example, in a European Union (EU) context, the European Commission has claimed that, as a result of the 2008 Marine Strategy Framework Directive (MSFD),[110] the ecosystem approach became "a legally-binding and operational principle for managing the EU's entire marine environment".[111] This is quite a far reaching statement, given that the ecosystem approach has not yet been defined at EU level and many Member States remain unclear on how to implement it in practice due to a lack of guidance.[112] The ecosystem approach features in the current draft text of the new treaty for Biodiversity Beyond National Jurisdiction (BBNJ)[113] which has been viewed positively by commentators as the ecosystem approach could be an important framing for the new treaty with regard to MPAs and other topics.[114] As well as appearing in the Part I General Provisions, notably in the section on General Principles and Approaches,[115] it also features in the Part III on Area Based Management Tools (ABMTs) and MPAs stating that they should be identified on the basis of *inter alia* an ecosystem approach.[116] While negotiations remain ongoing, the design of the instrument

[109] Billé and others, *Regional oceans governance*, 23.
[110] Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive), OJ L 164, 25.6.2008.
[111] European Commission, *Report from the Commission to the European Parliament and the Council on the implementation of the Marine Strategy Framework Directive* (Directive 2008/56/EC), COM (2020) 259 final, 3:
[112] The EU, which is a party to the CBD, has embraced the ecosystem approach as a central theme in its marine governance legislation, including the Water Framework Directive 2000/60/EC, the Marine Strategy Framework Directive 2008/56/EC and the Maritime Spatial Planning Directive 2014/89/EU. However, challenges remain at the implementation level, especially in a fisheries context. See generally Langlet and Rayfuse, *The ecosystem approach in ocean planning and governance: Perspectives from Europe and beyond*.
[113] Further revised draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction. Note by the President. Advance, unedited version, 30 May 2022. Available at https://www.un.org/bbnj/
[114] Vito de Lucia, A Very Quick Look at the Revised Draft Text of the new Agreement on Marine Biodiversity in Areas beyond National Jurisdiction, 23 January 2020, 2, available at https://www.ejiltalk.org/a-very-quick-look-at-the-revised-draft-text-of-the-new-agreement-on-marine-biodiversity-in-areas-beyond-national-jurisdiction/
[115] Draft Article 5.
[116] Draft Article 17bis *Further revised text.* It also features in draft Article 21(4) on Monitoring and Review.

and mode by which it provides or creates space for enabling elements (for example, institutions, guidelines) will have a significant bearing on how the ecosystem approach is translated into practice in the future.[117] As of yet however, details on how to articulate an ecosystem approach in the draft text remain sparse and disconnected.[118] For example, it has been suggested that the ecosystem approach should be the basis for all stages of decision-making regarding ABMTs and MPAs and not just identification.[119]

c. Implementing the Ecosystem Approach

As can be seen from the above discussion, the ecosystem approach has been included in a wide range of ocean instruments. However, the institutional component relevant to ecosystem approach at the global level has been described as very weak.[120] Its application varies from treaty to treaty with none incorporating all aspects of the approach, likely a result of piecemeal and sectoral development to date.[121] The CBD Secretariat has pointed out that there is no single way to implement the ecosystem approach as application will vary depending on the specific context, including local, national, regional or global conditions.[122] Therefore, in practical terms, the ecosystem approach is a normative framework which needs to be tailored to specific circumstances.[123] This results in a 'plurality of approaches' rather than a single 'true' version of the ecosystem approach.[124] In 2004, at COP 7, additional rationale and implementation guidelines for the Malawi principles were provided, whereby a mainstreaming of the ecosystem approach into national and regional biodiversity strategies, action plans, policy instruments, planning

[117] Sarah Ryan Enright and Ben Boteler, 'The Ecosystem Approach in International Marine Environmental Law and Governance' in O'Higgins TJ, Lago M and DeWitt, TH, *Ecosystem-Based Management, Ecosystem Services and Aquatic Biodiversity* (Springer 2020), 349.
[118] Vito de Lucia, *A Very Quick Look at the Revised Draft Text of the new Agreement on Marine Biodiversity in Areas beyond National Jurisdiction*, 2.
[119] IUCN Commentary on the further revised draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (A/CONF.232/2022/5), 8 August 2022, 61.
[120] Billé and others, *Regional oceans governance*, 23.
[121] Kirk, 'The Ecosystem Approach and the Search for An Objective and Content for the Concept of Holistic Ocean Governance', 41, 44.
[122] Secretariat of the CBD *Ecosystem Approach*, 2.
[123] CBD Decision IX/7, *Ecosystem Approach* UNEP/CBD/COP/DEC/IX/7 (2008), Preamble, para (a).
[124] De Lucia, 'Competing Narratives and Complex Genealogies: The Ecosystem Approach in International Environmental Law', 114.

processes and sectoral plans was promoted.[125] Despite these efforts, the principles have not been applied widely in practice as they are viewed as too complex or vague.[126] They also allow much to be decided at a later stage, thus enabling action to be deferred.[127]

Reasons for such inertia include the different interpretations of the concept by various actors, as highlighted earlier, and the difficulty in translating the evolving scientific understanding of ecosystems into law.[128] The ecosystem approach is underpinned by a comprehensive scientific knowledge base, however gaps in knowledge, scientific uncertainty, and dynamic multiple-scale ecosystem processes make it difficult to implement[129] in a way that ensures legal stability and predictability. In recognition of the fact that ecosystems change, parties to the CBD stipulated that the ecosystem approach must use adaptive management to anticipate and cater for such changes.[130] While appearing counter-intuitive at first,[131] adaptive management models, which enable new knowledge to be incorporated in a tailor made fashion as it becomes available, can provide solutions to the problems of scientific and legal uncertainty.[132] In this way, the implementation of the ecosystem approach is also in a constant state of evolution.[133] Despite the allegedly "limitless"[134] legal options for implementing the ecosystem approach, Langlet and Rayfuse point out that the variety and complexity of both natural ecosystems and the institutional, legal, and administrative systems created for their

[125] CBD Decision VII/11 (2004), Annex 1, para 5.
[126] Platjouw, *Environmental law and the ecosystem approach: maintaining ecological integrity through consistency in law*, 22.
[127] Kirk, 'The Ecosystem Approach and the Search for An Objective and Content for the Concept of Holistic Ocean Governance', 40.
[128] Tarlock, *Ecosystems*, 580.
[129] De Lucia, 'A critical interrogation of the relation between the ecosystem approach and ecosystem services', 105.
[130] CBD Decision V/6 (2000), Principle 9.
[131] Barbara A. Cosens and others, 'The role of law in adaptive governance' (2017) 22 Ecology and Society 1, 16 observes that although law has often been viewed as a constraint on adaptation, it has proven highly adaptive over time.
[132] Trouwborst, 'The Precautionary Principle and the Ecosystem Approach in International Law: Differences, Similarities and Linkages', 28; CBD Decision V/6 (2000), Section C. On adaptive management, see *inter alia* JB Ruhl, 'Regulation by adaptive management-is it possible' (2005) 7 Minn JL Sci & Tech 21 and Ahjond S Garmestani, Craig R Allen and Heriberto Cabezas, 'Panarchy, adaptive management and governance: policy options for building resilience' (2008) 87 Neb L Rev 1036.
[133] Long, 'Legal aspects of ecosystem-based marine management in Europe', 420.
[134] Ibid, 426 citing Martin H Belsky, 'Management of large marine ecosystems: Developing a new rule of customary international law' (1985) 22 San Diego L Rev 733, 733–763. See the list of implementation options suggested by the UNGA ICP-7 report (2006) at para. 7 as an example.

management is what makes the effective implementation of the ecosystem approach so highly challenging.[135] Given the context-specific nature of the application of the ecosystem approach, it has been suggested that it is more constructive to view the Malawi principles as an overarching framework of understanding more than an explicit strategy.[136] Kirk has suggested that the lack of precise prescription as to how the ecosystem approach is to be implemented can be viewed positively, in the sense that it allows for tailored adaptation in response to the needs of particular ecosystems.[137]

Spatial mismatch between ecological boundaries and governance regimes has also been a challenge for the effective operation of the ecosystem approach.[138] The CBD envisages an ecosystem approach whereby the appropriate scale of management action is to be determined by the problem to be addressed.[139] This is difficult to achieve on a global scale as the ocean is divided into areas under national State jurisdiction and ABNJ, over which no State exercises unilateral control.[140] As discussed in Chapter Three, the CBD only applies to the protection of marine biodiversity within the limits of national State jurisdiction,[141] thus leaving the high seas under the purview of the UNCLOS legal framework and other international and regional agreements. This has resulted in major governance gaps, some of which the BBNJ negotiations are now seeking to redress. The challenges which arise due to the lack of spatial fit have been aggravated by the absence of a single overarching global body with the authority to adopt management measures for marine biodiversity conservation that apply to the entire ecosystem.[142] As a solution,

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[135] David Langlet and Rosemary Rayfuse, 'Challenges in implementing the ecosystem approach: Lessons learned' (2019) 87 Publications on Ocean Development 445, 445.
[136] Ibid, 447.
[137] Kirk, 'The Ecosystem Approach and the Search for An Objective and Content for the Concept of Holistic Ocean Governance', 40.
[138] Yoshifumi Tanaka, 'Zonal and Integrated Management Approaches to Ocean Governance: Reflections on a Dual Approach in International Law of the Sea' (2004) 19 The International Journal of Marine and Coastal Law 483, 500; Elizabeth A Kirk, 'Maritime zones and the ecosystem approach: A mismatch' (1999) 8 RECIEL 67. On socio-ecological scale mismatch, see Graeme S Cumming, David HM Cumming and Charles L Redman, 'Scale mismatches in social-ecological systems: causes, consequences, and solutions' (2006) 11 Ecology and Society.
[139] Malawi Principle 7. Secretariat of the CBD *Ecosystem Approach*, 20-21.
[140] James Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment* (First edn, Oxford University Press 2017), 22.
[141] Article 4 (b) states that in ABNJ the CBD only applies to processes and activities carried out under the jurisdiction and control of the Parties.
[142] Long, 'Legal aspects of ecosystem-based marine management in Europe', 476; Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, 298.

increased procedural cooperation and linkages between the various existing ocean regulatory regimes have been proposed.[143] Concrete examples from two marine regions will be explored in Chapters Six and Seven. Successful examples of inter sectoral cooperation on a global level include the work of the International Maritime Organization (IMO) and FAO on tackling illegal, unregulated and unreported (IUU) Fishing[144] and in a biodiversity context, the close cooperation and coordination between the COPs of the CBD, CITES and CMS.[145] Regionally institutional cooperation is taking place to coordinate fisheries activities in the North East Atlantic (see Chapter Six),[146] in relation to the identification and designation of marine protected areas (MPAs),[147] ecologically and biologically significant areas (EBSAs),[148] and large marine ecosystems (LMEs).[149] However, most examples of inter-sectoral and institutional cooperation tend to occur on

[143] Kirk, 'Maritime zones and the ecosystem approach: A mismatch', 69-70; Tanaka, 'Zonal and Integrated Management Approaches to Ocean Governance: Reflections on a Dual Approach in International Law of the Sea', 505-506.

[144] See e.g., Report of the Joint FAO/IMO Ad Hoc Working Group on Illegal, Unreported and Unregulated (IUU) Fishing and Related Matters, Document FIRO/R1124 (July 2007). A cooperation agreement between the IMO and FAO was entered into in 1965. See further Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, 279.

[145] See e.g., 1996 CITES-CBD MOU, 1996 CBD-CMS MOU and 2002 CITES-CMS MOU. Ibid, 278; Tanaka, 'Zonal and Integrated Management Approaches to Ocean Governance: Reflections on a Dual Approach in International Law of the Sea', 505-506. On the challenges of institutional linkage in a biodiversity context, see Elina Raitanen, 'Legal weaknesses and windows of opportunity in transnational biodiversity protection: As seen through the lens of an ecosystem approach based paradigm' in Maljean-DuBois, S (ed.) *The effectiveness of environmental law: a key topic* (Intersentia 2017), 91-92.

[146] Memorandum of Understanding Between the North East Atlantic Fisheries Commission and the OSPAR Commission, 2008.

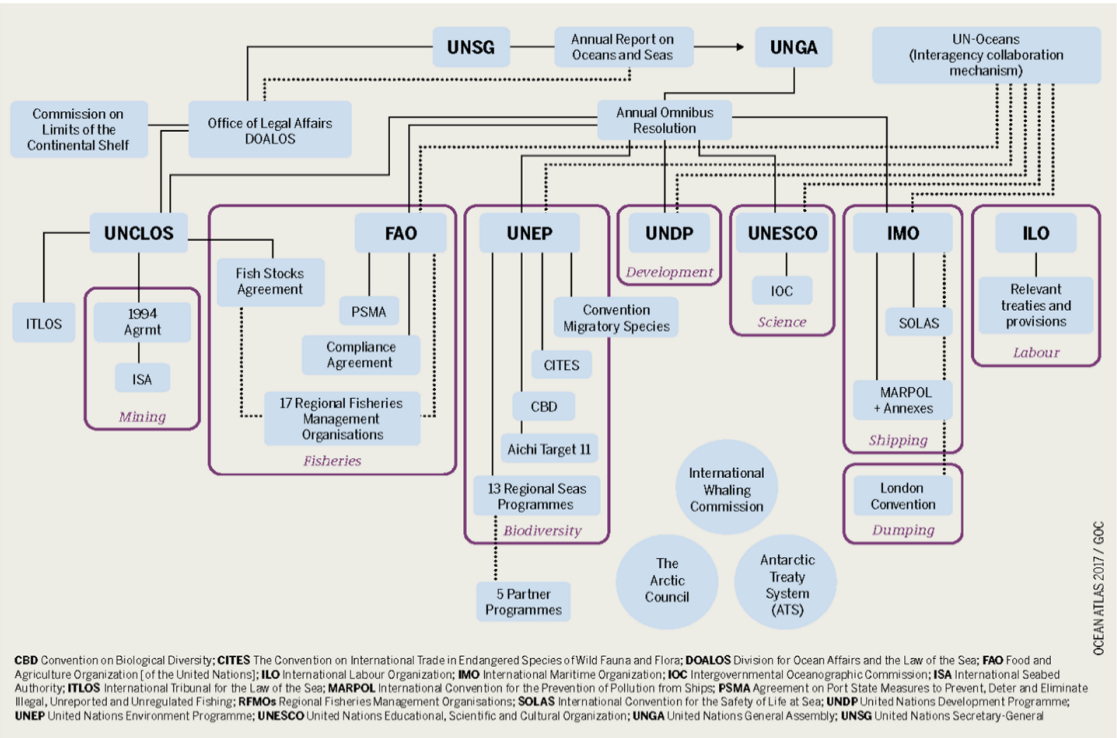
[147] E.g., the parties to the Antarctic Treaty can only designate protected areas in consultation with the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) as the relevant RFMO in the region and vice versa. In the Mediterranean, cooperation between a regional seas body and a regional fisheries body is illustrated via the Memorandum of Understanding between the UNEP MAP-Barcelona Convention and FAO-GFCM (2012), Annex which includes collaboration on criteria to identify MPAs. See further Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, 281-286.

[148] The EBSA process, established under the CBD, has potential to play a useful role in facilitating cooperation in relation to the establishment of MPAs. It is not constrained by boundaries and works via regional workshops involving diverse stakeholder groups representing regional jurisdictions, intergovernmental bodies, non-governmental organizations and indigenous representatives. To date over EBSAs have been recognized, encompassing areas of the ocean both within and beyond national jurisdictions. See further https://www.cbd.int/marine/EBSAs.shtml and David E. Johnson and others, 'Reviewing the EBSA process: Improving on success' (2018) 88 Marine Policy 75.

[149] The LME concept was developed by the United States National Oceanic and Atmospheric Administration (NOAA) as a model to implement ecosystem approaches to assessing, managing, recovering, and sustaining LME resources and environments. Thus far, 64 LMEs have been defined globally. See further https://www.st.nmfs.noaa.gov/ecosystems/lme/; Lawrence Juda, 'Considerations in Developing a Functional Approach to the Governance of Large Marine Ecosystems' (1999) 30 Ocean Development & International Law 89.

an *ad hoc* basis without overarching coordination, highlighting the weaknesses associated with the institutional component relevant to implementation of the ecosystem approach. These shortcomings have been recognised within the BBNJ process, and there is agreement on the need to address cooperation and collaboration among different institutions,[150] however no clear consensus has yet emerged regarding modalities to achieve this (see further Chapter Five).

Figure 4.3 International Ocean Governance Structures[151]



Despite the challenges associated with the operation of the ecosystem approach, it has increasingly become a staple feature of modern marine management. However, given that most of the work done to flesh out how it can be implemented and applied has occurred on a soft law basis, the normative content of the notion has been described as weak and

[150] Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, 296-297.
[151] Global Ocean Atlas, Global Ocean Commission (2017).

unclear in terms of its obligations on States.[152] It is clear that a more holistic form of governance is a necessary corollary of the ecosystem approach, which will naturally require greater cooperation between States and international and regional institutions,[153] integrated management across sectors,[154] and planning on a variety of levels, including across boundaries.[155] Integrated management, with a long-term time frame,[156] is considered to be essential in order to ensure efficient coordination between organizations and compatibility between policies and activities.[157] However, its implementation has been hampered by the existing fragmented and decentralised institutional architecture of global ocean governance,[158] as well as political and financial challenges.[159] Its meaning also remains obscure in international law.[160] Parties to the CBD have acknowledged that the full application of the ecosystem approach remains a 'formidable task', especially on a larger scale.[161] While the substantive mandate of the CBD COP is broad, it is not empowered to impose legally binding obligations on State parties.[162] Nevertheless, the soft-law developed by CBD parties, including the Malawi Principles and Operational Guidance, continue to remain relevant and applicable. Indeed, Morgera attributes the transformation of the ecosystem approach into a "fully-fledged system of soft law principles and guidelines" to this consensus based normative activity of the CBD parties.[163]

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[152] Yoshifumi Tanaka, *The International Law of the Sea* (Second edn, Cambridge University Press 2015), 251-252.
[153] UNGA ICP-7 report (2006), para 7(f).
[154] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) *Global Assessment Report on Biodiversity and Ecosystem Services* (2019), Media Release, 6 May 2019, 3; UNGA ICP-7 report (2006), para 7(k).
[155] UNGA ICP-7 report (2006), para 7(j).
[156] Secretariat of the CBD, *Ecosystem Approach*, 1; Trouwborst, 'The Precautionary Principle and the Ecosystem Approach in International Law: Differences, Similarities and Linkages', 28.
[157] Agenda 21, Chapter 17, para. 17.5(a). For a deeper discussion on integrated oceans management, see generally K Scott, *Integrated Oceans Management. A New Frontier in Marine Environmental Protection* and Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, Chapter 10.
[158] Harrison, ibid, 299.
[159] Scott, *Integrated Oceans Management. A New Frontier in Marine Environmental Protection*, 467.
[160] Ibid, 466; Tanaka, 'Zonal and Integrated Management Approaches to Ocean Governance: Reflections on a Dual Approach in International Law of the Sea', 495-96.
[161] CBD Decision IX/7 (2008), Preamble, para (f).
[162] Billé and others, *Regional oceans governance*, 23.
[163] Morgera, 'The ecosystem approach and the precautionary principle', 71.

2. The Ecosystem Approach and Marine Protected Areas

As mentioned in Chapter Three, the CBD claims that the ecosystem approach as applied to protected areas implies a bioregional perspective to their establishment, which would naturally indicate the use of transboundary MPAs (TBMPAs). The Malawi principles and their operational guidance are also supportive of the establishment and management of a TBMPA network, in terms of applying the ecosystem approach at the appropriate spatial and temporal scales, ensuring cooperation and decentralizing management actions to the lowest level. The next section will examine how the application of an ecosystem approach to the design of MPAs requires a move away from *ad hoc*, individual and sectoral designations to a more cohesive and ecologically connected network of MPAs, which is empowered to protect transboundary species, habitats and ecosystems.

a. The Evolution of MPAs from Individual Sites to Networks

As mentioned in Chapter Two, MPAs were historically established on an individual, ad hoc basis, rather than through a systematic, planned process.[164] The advantages of MPA networks over individual MPAs are significant and include protecting representative examples of all the different ecosystems, habitats and communities over a wide area, as well as benefits to fisheries[165] and socio-economic welfare.[166] In terms of socio-economic impact, networks of several MPAs of different sizes may help to reduce socioeconomic impacts without compromising conservation and fisheries benefits[167] In particular, the high level of functional and spatial connectivity within marine ecosystems[168] has formed the basis of claims that networks of MPAs provide greater ecological benefits over

[164] Caitlyn Toropova and others, *Global ocean protection: present status and future possibilities* (IUCN 2010) cited in Nicola L. Foster and others, 'Assessing the ecological coherence of a marine protected area network in the Celtic Seas' (2017) 8 Ecosphere, 2.
[165] Jonathan W Pitchford, Edward A Codling and Despina Psarra, 'Uncertainty and sustainability in fisheries and the benefit of marine protected areas' (2007) 207 Ecological Modelling 286 cited in Marta Chantal Ribeiro and EM Olsen, 'Achieving Ecologically Coherent MPA Networks in Europe: Science Needs and Priorities.' Position Paper 18. (European Marine Board 2013), 11.
[166] Robert S Pomeroy and others, 'How is your MPA doing? A methodology for evaluating the management effectiveness of marine protected areas' (2005) 48 Ocean & Coastal Management 485, 19 cited in Ribeiro and Olsen, 'Achieving Ecologically Coherent MPA Networks in Europe: Science Needs and Priorities', 11.
[167] IUCN-WCPA, *Establishing Marine Protected Area Networks-Making It Happen.* (IUCN-WCPA, NOAA and The Nature Conservancy 2008), 10.
[168] Foster and others, 'Assessing the ecological coherence of a marine protected area network in the Celtic Seas', 2.

individual MPAs.[169] For example, it has been shown that connectivity among MPAs helps to replenish and maintain fish populations.[170] Furthermore, well-connected ecosystems have been deemed critical for maintaining important ecological and evolutionary processes, such as species migration, particularly in the face of environmental and climate changes.[171] Well-planned networks of strategically placed MPAs could provide important spatial links, which are needed to maintain ecosystem processes and connectivity, which in turn strengthens the ecological resilience of the MPA network in the face of stressors.[172] Strategic placement of multiple MPAs also spreads risk in the case of localized environmental disasters, climate change or other hazards.[173]

The consideration of MPAs as networks first began to take hold at the international policy level in the 1970s. In 1975, at the first international conference on MPAs, the International Union for the Conservation of Nature (IUCN) called for the establishment of a 'system' of MPAs[174] that represented the world's marine ecosystems.[175] The CBD also refers to a 'system' of protected areas in Article 8 (see Chapter Two). MPA science received a significant boost in the 1990s and as it developed, so did the concept of using networks of MPAs to meet criteria of representativeness and connectivity.[176] From the 2000s onwards, upscaling into comprehensive, representative and effectively managed networks of MPAs became the plan of action recommended by the scientific community and agreed by coastal nations around the world.[177] The 2002 World Summit on Sustainable Development[178] called for the "establishment of marine protected areas consistent with international law and based on scientific information, including

[169] Ibid.
[170] Sean L Maxwell and others, 'Area-based conservation in the twenty-first century' (2020) 586 Nature 217, 221.
[171] Ibid.
[172] IUCN-WCPA, *Establishing Marine Protected Area Networks-Making It Happen*, 10, 12.
[173] Ibid, 10
[174] Systems usually refer to terrestrial areas but are also sometimes used in a marine context. Barbara Lausche and others, 'The Legal Aspects of Connectivity Conservation. Volume 1 – A Concept Paper' (IUCN 2013), 151.
[175] Peter J. S. Jones, *Governing marine protected areas: resilience through diversity* (Routledge 2014), 28; María Maestro and others, 'Marine protected areas in the 21st century: Current situation and trends' (2019) 171 Ocean and Coastal Management 28, 29.
[176] Rita C. Abecasis and others, 'Marine Conservation in the Azores: Evaluating Marine Protected Area Development in a Remote Island Context' (2015) 2 Frontiers in Marine Science, 2.
[177] Ibid.
[178] https://sustainabledevelopment.un.org/milesstones/wssd

representative networks by 2012".[179] The fifth World Parks Congress in 2003 called on countries to establish a global system of MPA networks to cover 20 to 30% of the world's oceans by 2012.[180] In 2004, parties to the CBD set a goal of establishing and maintaining "marine and coastal protected areas that are effectively managed, ecologically based and contribute to a global network".[181] As discussed in Chapter One, Aichi Biodiversity Target 11, agreed by parties to the CBD in 2010, requires *inter alia*: "ecologically representative and well-connected systems of protected areas". [182] The first draft of the post-2020 global biodiversity framework, which aims to renew the targets contained in the 2010-2020 Strategic Plan for Biodiversity, retains the reference to "ecologically representative and well-connected systems of protected areas".[183] The current draft text of the BBNJ treaty also refers to establishing a "system" of ABMTs, including a "network of ecologically representative and connected marine protected areas that are effectively and equitably managed".[184]

It has been claimed that MPA networks demonstrate the concept of the ecosystem approach in practice, "when the geographical extent of the protection is based on movements of organisms and physically linked processes."[185] At the seventh CBD COP in 2004, it was confirmed that the establishment and maintenance of systems of protected areas play an essential part in implementing the ecosystem approach and achieving the objectives of the Convention.[186] The ICP-7 report in 2006 emphasized that the ecosystem approach could be implemented via the "establishment of marine-protected areas consistent with international law and based on scientific information, including representative networks […]".[187] By 2015, the EEA reported that MPA designation was evolving globally and across Europe from the protection of individual sites to a more

[179] Johannesburg Plan of Implementation, para. 31 c.
[180] http://enb.iisd.org/crs/worldparksv/sdvol89num9e.html
[181] CBD Decision VII/5 (2004), para 18.
[182] CBD Decision X/2 *The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets* CBD/COP/DEC/X/2, 29 October 2010.
[183] First Draft of the post 2020 global biodiversity framework, Target 3, CBD/WG2020/3/3, 5 July 2021, available at https://www.cbd.int/conferences/post2020/wg2020-03/documents.
[184] Part III Measures such as Area-based Management Tools, including Marine protected Areas, draft Article 14 (b), Objectives, Further revised draft text, advance unedited version, 30 May 2022.
[185] IUCN-WCPA, *Establishing Marine Protected Area Networks-Making It Happen*, 15.
[186] CBD 7 Decision VII/28 (2004), para. 1.
[187] UNGA ICP 7 report (2006), para 7 (l).

holistic design of MPA networks based on an ecosystem approach.[188] In order to better understand how MPA networks can be utilized to implement the ecosystem approach, the next section will unpack the core elements which make up a MPA network.

b. Defining Networks of MPAs

Networks of MPAs have been defined by the IUCN as:

> "a collection of individual MPAs operating cooperatively and synergistically, at various spatial scales, and with a range of protection levels, in order to fulfil ecological aims more effectively and comprehensively than individual sites could alone."[189]

The question of how networks of MPAs should be designed remains challenging. The IUCN issued guidance in 2008 wherein it stated that not just any collection of MPAs can constitute an MPA network.[190] In particular it noted that:

> "a network may include several MPAs of different sizes, located in critical habitats, containing components of a particular habitat type or portions of different kinds of important habitats, and interconnected by the movement of animals and plant propagules."[191]

Furthermore, in order to function collectively as an ecological network, they should be appropriately placed, sized and spaced.[192] It has been suggested that in the same way that MPAs need to conserve a diversity of species, MPA networks may need to include a diversity of different types of MPA, including remote large scale MPAs, but also including smaller MPAs in metropolitan seas that promote sustainable use.[193] The IUCN

[188] EEA, *Marine protected areas in Europe's seas. An overview and perspectives for the future* (European Environment Agency (EEA), Copenhagen, Denmark 2015), 9.
[189] IUCN-WCPA, 'Establishing networks of marine protected areas: A guide for developing national and regional capacity for building MPA networks.' Non-technical summary report (2007), 3.
[190] IUCN-WCPA, *Establishing Marine Protected Area Networks-Making It Happen*, 12.
[191] Ibid.
[192] Ibid.
[193] Peter JS Jones and Elizabeth M De Santo, 'Viewpoint–Is the race for remote, very large marine protected areas (VLMPAs) taking us down the wrong track?' (2016) 73 Marine Policy 231, 234.

issued five ecological guidelines as a framework for designing 'resilient' MPA networks, which are described as the 'core' of MPA network design.[194]

Table 4.1 IUCN Ecological Guidelines for Designing Resilient MPA Networks[195]

	Ecological Guideline	Components
1	Include the full range of biodiversity present in the biogeographic region	Representation, Replication, Resilience Characteristics
2	Ensure ecologically significant areas are incorporated	Ecologically and Biologically Significant Areas (EBSAs)
3	Maintain long-term protection	Adaptive management
4	Ensure ecological linkages	Connectivity
5	Ensure maximum contribution of individual MPAs to the network	Adequate size, spacing and shape

Resilience is a critical element of MPA network design, particularly in the face of climate change.[196] Ecosystem resilience is "the extent to which ecosystems can absorb recurrent natural and human perturbations and continue to regenerate without slowly degrading or unexpectedly flipping into alternate states".[197] Components of a resilient MPA network include the following:

- Effective management.
- Risk spreading through inclusion of replicates of representative habitats.
- Full protection of critical areas that can serve as reliable sources of seed for replenishment/preserve ecological function.
- Maintenance of biological and ecological connectivity among and between habitats. [198]

[194] IUCN-WCPA, *Establishing Marine Protected Area Networks-Making It Happen*, 39-62.
[195] Summary table adapted from ibid.
[196] IUCN-WCPA, *Establishing Marine Protected Area Networks-Making It Happen*, 15.
[197] Terence P. Hughes and others, 'New paradigms for supporting the resilience of marine ecosystems' (2005) 20 Trends in Ecology & Evolution (Amsterdam) 380, 380.
[198] IUCN-WCPA, *Establishing Marine Protected Area Networks-Making It Happen*, 16.

Representation is an important feature of much international law and policy on designing MPA networks and is a key element of Aichi Target 11. The IUCN explains representation in simple terms as "ensuring that all ecosystems and habitats within the region are represented in the MPA Network".[199] This requires careful placing of MPAs to ensure that all habitats and most elements of biodiversity will be represented in the network.[200] The CBD defines representativity within an MPA network as "areas representing the different biogeographical subdivisions of the global oceans and regional seas that reasonably reflect the full range of ecosystems, including the biotic and habitat diversity of those marine ecosystems."[201] The Aichi 11 requirement for the protected area system to be ecologically representative requires that protected area systems should contain "adequate samples of the full range of existing ecosystems and ecological processes, including at least 10% of each ecoregion within the country".[202] OSPAR also produced guidance to assist its parties on the meaning of representativity in the context of its MPA network.[203] It states that "the approaches by which Contracting Parties identify areas which best represent the range of features in the OSPAR area may vary but could include considerations of geographic variation and variation in habitat types."[204] It also recommends subdividing the marine environment into biogeographic areas which are relatively homogenous.[205]

Spalding and others claim that a detailed meaning for "ecologically representative" is not yet settled, but if it is assumed to mean 10% of each habitat or ecoregion then many of the large gains to single habitats or ecoregions would be superfluous, and far greater protection would be needed to fill the gaps. [206] The recommendations of the 2014 sixth World Parks Congress on representation suggested that a network 'should include at least

[199] Ibid, 40
[200] Ibid.
[201] Ibid.
[202] CBD Quick Guide to the Aichi Biodiversity Targets, available at https://www.cbd.int/aichi-targets/target/11, accessed 20 January 2022.
[203] OSPAR Guidance on Developing an Ecologically Coherent Network of OSPAR Marine Protected Areas (Agreement 2006/3), 5.
[204] Ibid.
[205] Ibid.
[206] Mark D. Spalding and others, 'Building towards the marine conservation end-game: consolidating the role of MPAs in a future ocean: Consolidating the role of MPAsin a future ocean' (2016) 26 Aquatic Conservation: Marine and Freshwater Ecosystems 185, 194.

30% of each marine habitat' within MPAs.[207] Individual countries have also adopted their own guidance.[208] It has also been suggested that progress towards representativity on a global scale will not be easy.[209]

In 2008, the CBD issued scientific guidance on how to select areas in order to establish representative MPA networks. They listed the following elements as components of an MPA network: EBSAs, representativity, connectivity, replicated ecological features and adequate and viable sites.[210] EBSAs are defined as

> "geographically or oceanographically discrete areas that provide important services to one or more species/populations of an ecosystem or to the ecosystem as a whole, compared to other surrounding areas or areas of similar ecological characteristics".[211]

Site specific considerations include:

- Uniqueness or rarity
- Special importance for life history stages of species
- Importance for threatened, endangered or declining species and/or habitats
- Vulnerability, fragility, sensitivity or slow recovery
- Biological productivity
- Biological diversity
- Naturalness.[212]

While all areas that meet the EBSA criteria will not necessarily be designated as MPAs, Diz and others posit that the development and adoption of these criteria provide sound

[207] The Promise of Sydney. https://www.worldparkscongress.org/. Cited in Sue Wells and others, 'Building the future of MPAs – lessons from history' (2016) 26 Aquatic Conservation: Marine and Freshwater Ecosystems 101, 117.
[208] See, for example, in England, Joint Nature Conservation Committee (JNCC) *Marine Conservation Zone Project – Ecological Network Guidance* (JNCC 2010). See generally https://jncc.gov.uk/advice/marine-protected-areas/
[209] Wells and others, 'Building the future of MPAs – lessons from history', 117.
[210] Annex II, CBD Decision IX/20, *Scientific guidance for selecting areas to establish a representative network of Marine Protected Areas, including in open ocean water and deep-sea habitats*, UNEP/CBD/COP/DEC/IX/20.
[211] Ibid.
[212] Ibid, Annex I and II.

guidance for ecologically representative MPA network planning through the identification of areas important for biodiversity conservation.[213]

The other components of an MPA network include connectivity (which will be discussed in Section 3 below) replication and adequacy. Replication in an MPA network means that "more than one site shall contain examples of a given feature in the given biogeographic area." [214] Replication is important in an MPA network because it can accommodate movement of marine species between areas and therefore facilitate connectivity between sites.[215] It also provides a safeguard against local environmental disasters such as oil spills which could significantly impact species and habitats in an individual site.[216] Adequacy and viability of sites indicates that "all sites within a network should have size and protection sufficient to ensure the ecological viability and integrity of the feature(s) for which they were selected."[217]

While in the EU and OSPAR, there is also a focus on representative MPA networks, it has been supplemented in recent years by a complementary focus on MPAs constituting 'ecologically coherent' networks.[218] Ecological coherence is not a concept endorsed by the CBD, rather it has been described as "a term associated with EU conservation networks that does not have a clear conceptual or empirical basis in ecological science".[219] OSPAR has also issued guidance on how to develop an 'ecologically coherent network' of MPAs,[220] which is influential on an EU[221] and national level where they have been cited by, for example, the United Kingdom (UK) Government.[222] OSPAR

[213] Daniela Diz and others, 'Mainstreaming marine biodiversity into the SDGs: The role of other effective area-based conservation measures (SDG 14.5)' (2018) 93 Marine Policy 251, 253.
[214] CBD Decision IX/20, Annex II.
[215] IUCN-WCPA, *Establishing Marine Protected Area Networks-Making It Happen*, 42.
[216] Ibid.
[217] CBD Decision IX/20, Annex II.
[218] Jones, *Governing marine protected areas: resilience through diversity*, 28.
[219] Marine Protected Area Advisory Group *Expanding Ireland's Marine Protected Area Network: A report by the Marine Protected Area Advisory Group.* Report for the Department of Housing, Local Government and Heritage (2020), 110; 112.
[220] OSPAR Commission, *Guidance on developing an ecologically coherent network of OSPAR marine protected areas* (Agreement no. 2006-03).
[221] For example, the Marine Strategy Framework Directive 2008 (fn. 110) refers to "coherent and representative networks of marine protected areas' in Article 13(4).
[222] Department for Environment, Food & Rural Affairs (DEFRA) *Marine Protected Areas Network Report* 2012-2018, 14.

describes a network as being characterised by a coherence in purpose and by the connections between its constituent parts.[223] It identifies the following factors as contributing to coherence:

- "A network's constituent parts should firstly be identified on the basis of criteria which aim to support the purpose of the network.
- The development of an ecologically coherent network of MPAs should take account of the relationships and interactions between marine species and their environment both in the establishment of its purpose and in the criteria by which the constituent elements are identified.
- A functioning ecologically coherent network of MPAs should interact with, and support, the wider environment as well as other MPAs although this is dependent on appropriate management to support good ecosystem health and function within and outside the MPAs."[224]

The OSPAR Guidelines on identification of MPAs[225] also note that an ecologically coherent network is particularly important for highly mobile species, such as certain birds, mammals and fish, to safeguard the critical stages and areas of their life cycle (such as breeding, nursery and feeding areas).[226] They state that the OSPAR MPA Network should take into account the linkages between marine ecosystems and the dependence of some species and habitats on processes that occur outside the MPA concerned, given that these relationships are often more complex, and occur on a larger scale, than those of terrestrial ecosystems.[227]

The requirements for ecologically connected/coherent and representative networks of MPAs called for by international, regional and EU legal instruments, necessitate a bigger vision, with conservation efforts built across large scales and embedded in a wider

[223] OSPAR Agreement 2006/3, 1.
[224] Ibid, 1-2.
[225] OSPAR Commission *Guidelines for the Identification and Selection of Marine Protected Areas in the OSPAR Maritime Area* (Agreement no. 2003-17).
[226] Ibid, 2.
[227] Ibid, 1.

management framework.[228] To realize this vision, Spalding and others idealistically call for 'whole-ocean management', where the entire ocean space falls under a well thought-out and holistic management regime.[229] Although implementation remains challenging, integrating MPAs within a wider spatial planning approach for the oceans and an ecosystem approach to the management of the oceans as a whole have now become fundamental goals.[230] In fact, marine spatial planning (MSP) is increasingly acknowledged as one of the most pragmatic options for implementing the ecosystem approach and integrated marine governance more generally.[231] The existence of a good marine spatial planning regime around an MPA helps to reduce impacts from activities *outside* the boundaries, such as shipping, fishing, aggregate and mineral extraction, and coastal development.[232] It has been demonstrated that even well-managed MPAs are constrained in their ability to protect biodiversity from such outside threats because they have no or limited authority to control activities outside the designated MPA boundaries.[233] For this reason there have been calls for the creation of inter-linkages between marine environmental protection measures in the context of pollution, shipping, fisheries and the designation of MPAs.[234] It is also important in this context that MPA networks take into account any adjacent or overlapping area based conservation measures established by these regimes, such as seasonal fisheries closures, or Special Areas (see Chapter Three).[235] Given the interconnectedness of the ocean, as explained in Chapter One, it is clearly ineffective to manage different marine sectors in silos. Therefore, an integrated management approach co-ordinating the regulation of various marine issues is indispensable in order to enhance the effectiveness of MPAs.[236]

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[228] Spalding and others, 'Building towards the marine conservation end-game: consolidating the role of MPAs in a future ocean: Consolidating the role of MPAs in a future ocean', 193.
[229] Ibid. See also Chapter One, Section 1.
[230] Wells and others, 'Building the future of MPAs – lessons from history', 116.
[231] Ntona and Morgera, 'Connecting SDG 14 with the other Sustainable Development Goals through marine spatial planning', 216.
[232] Wells and others, 'Building the future of MPAs – lessons from history', 119.
[233] Lausche and others, 'The Legal Aspects of Connectivity Conservation. Volume 1 – A Concept Paper', 145.
[234] Yoshifumi Tanaka, *A dual approach to ocean governance: the cases of zonal and integrated management in international law of the sea* (Routledge 2008), 192-3.
[235] Wells and others, 'Building the future of MPAs – lessons from history', 119.
[236] Tanaka, *A dual approach to ocean governance: the cases of zonal and integrated management in international law of the sea*, 197.

3. Marine Connectivity Conservation: Translating Science into Law

Connectivity is a complex multi-dimensional concept containing spatial, temporal and functional components,[237] and is inherent in the MPA network concept. It has been said that the term 'network' is used purposely to indicate natural connectivity.[238] The CBD defines connectivity in the context of designing an MPA network as "linkages whereby protected sites benefit from larval and/or species exchanges, and functional linkages from other network sites."[239] Marine connectivity conservation is an emerging field of scientific study, which is less well understood than terrestrial connectivity.[240] It is an even newer topic for law.[241] Wells and others describe connectivity as a major challenge with the "practice yet to catch up with the theory".[242] For example, a network of protected areas may be created on the basis of representativity but may not be 'connected' from an ecological point of view.[243]

The most recent definition of ecological connectivity at the international level was adopted by the CMS in 2019 as "the unimpeded movement of species and the flow of natural processes that sustain life on Earth".[244] It includes such processes as nutrient flows, migration, larval dispersal, and gene flows.[245] It is a crucial process, fundamental for all aspects of the marine environment, which underpins the ecosystem's dynamics, resilience, and productivity, capacity to generate services for humans or to regenerate after disturbance.[246] There are various scientific definitions of ecological connectivity,

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[237] Ribeiro and Olsen, 'Achieving Ecologically Coherent MPA Networks in Europe: Science Needs and Priorities', 49.
[238] Lausche and others, 'The Legal Aspects of Connectivity Conservation. Volume 1 – A Concept Paper', 152.
[239] Annex II, CBD Decision IX/20
[240] Barbara Lausche and others, *Marine Connectivity Conservation "Rules of Thumb" For MPA and MPA Network Design* Version 1.0. IUCN WCPA Marine Connectivity Working Group (IUCN 2021), 4.
[241] Lausche and others, 'The Legal Aspects of Connectivity Conservation. Volume 1 – A Concept Paper', 164.
[242] Wells and others, 'Building the future of MPAs – lessons from history', 117.
[243] Lausche and others, 'The Legal Aspects of Connectivity Conservation. Volume 1 – A Concept Paper', 152.
[244] Convention on Migratory Species (CMS) Resolution 12.26 (Rev.13) "Improving Ways of Addressing Connectivity Conservation of Migratory Species" adopted 22 February 2020. https://www.cms.int/sites/default/files/document/cms_cop13_res.12.26_rev.cop13_e.pdf
[245] Dan Laffoley and others, 'Marine protected areas', *World Seas: an Environmental Evaluation* (Elsevier 2019), 564.
[246] Ibid; Erwann Lagabrielle and others, 'Connecting MPAs – eight challenges for science and management' (2014) 24 Aquatic Conservation: Marine and Freshwater Ecosystems 94, 95.

most of which are more advanced in terrestrial environments.[247] Application to the marine environment requires special attention to distinct features such as the three-dimensional nature of marine space, the fluid nature of the sea where organisms may move in all directions, the large-scale connectivity of natural processes in the ocean and the land-sea interface.[248] The most recent guidelines on 'Marine Connectivity Conservation: Rules of Thumb for MPA and MPA Network Design' issued by the IUCN in 2021 cite the following definitions:

"Ecological connectivity for species: The functional movement of populations, individuals, genes, gametes and propagules between populations, communities and ecosystems, as well as the structural connection of non-living material from one location to another.

> **Functional connectivity for species**: A description of how well genes, gametes, propagules or individuals move through land, freshwater, and the ocean.
>
> **Structural connectivity for species**: A measure of habitat permeability based on the physical features and arrangements of habitat patches and stepping stones, disturbances, and other land, freshwater or ocean elements presumed to be important for organisms to move through their environment. Structural connectivity is used in efforts to restore or estimate functional connectivity where measures of it are lacking."[249]

[247] Lausche and others, *Marine Connectivity Conservation "Rules of Thumb" For MPA and MPA Network Design*, 6.
[248] Ibid.
[249] Ibid.

The spatial scale over which marine connectivity occurs may be very large.[250] It does not respect jurisdictional boundaries and can occur within MPAs, among MPAs, between MPAs and areas outside MPAs.[251] Therefore, it is critical to consider this wider spatial setting when designing MPAs and MPA networks. The geographical extent of protection should be based on the movements of organisms and physically linked processes.[252] Since the extent of connectivity may be critical to the health of an MPA, sufficiently large areas must be considered to ensure adequate protection of ecosystem values.[253] A well-designed MPA network can support connectivity needs while also meeting other important ecological criteria. [254] In 2021 the IUCN developed several 'Rules of Thumb'

Figure 4.4 Marine Connectivity Conservation Rules of Thumb (*selected*)

- When determining whether connectivity should be incorporated into the design of an MPA network, it is essential to identify the role that each MPA plays in supporting connectivity as well as barriers to connectivity.
- Management should be scaled based on realistic connectivity patterns, incorporating best available scientific information, with potential for adaptations in response to climate change.
- To protect and leverage the many forms of ecosystem connectivity, the siting and design of individual MPAs should include multiple ecosystems.
- For marine species that use different habitats throughout their life cycle, a multi-management approach is needed across realms, which includes consideration of land-sea connectivity.
- International cooperation is essential for negotiating and establishing ecological corridors and management plans across borders and at larger scales.
- The following additional criteria, developed by the CBD, are also important in guiding the selection and design of particular sites; representativeness, replication, viability, precautionary design, prominence, maximum connectivity, resilience, minimizing adverse impacts on existing users, and cultural values.

[250] Lausche and others, 'The Legal Aspects of Connectivity Conservation. Volume 1 – A Concept Paper', 151.
[251] Laffoley and others, 'Marine protected areas', 564.
[252] IUCN-WCPA, *Establishing Marine Protected Areas – Making it Happen*, 15.
[253] Jon Day and others, 'Guidelines for applying the IUCN protected area management categories to marine protected areas' (IUCN 2019), 21.
[254] Lausche and others, *Marine Connectivity Conservation "Rules of Thumb" For MPA and MPA Network Design*, 5.

to guide the design of MPA networks in a way that marine connectivity is considered (Fig. 4.4).[255]

OSPAR also deals with connectivity as part of its guidance on 'ecological coherence', and issued the following principles in the context of MPA design, some of which overlap with the above:

> "The design of a network of marine protected areas needs to recognise aspects of connectivity and, where possible, place protected sites where they may have maximum benefit as measured against the objectives of the network.
>
> Detailed connectivity issues should be considered only for those species where a specific path between identified places is known (e.g., critical areas of a life cycle).
>
> Lack of knowledge with regard to connectivity in the marine environment should not prevent the development of the OSPAR MPA network."[256]

Despite the recognition that ecological connectivity is an essential component of effective conservation,[257] it is among the most infrequent and ineffectively applied ecological criteria in MPA design and evaluation, often because it is difficult to measure. [258] Most countries lag significantly behind in implementing the connectivity element of Aichi Target 11.[259] The 2019 IPBES report revealed that only 9.3-11.7 per cent of all protected areas are estimated to be adequately connected.[260] A recent 2019 study by Balbar and Metaxas revealed that current use of connectivity in MPA design is minimal and geographically biased, being mostly applied in California and Australia.[261] In 2020,

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[255] Adapted and summarized by author. Comprehensive list available at ibid, 7-9.
[256] OSPAR Agreement 2006/3, 6-7.
[257] Secretariat of the Convention on Biological Diversity *Global Biodiversity Outlook* (2020), 583.
[258] Lausche and others, *Marine Connectivity Conservation "Rules of Thumb" For MPA and MPA Network Design*, 4.
[259] Jodi Hilty and others, 'Guidelines for conserving connectivity through ecological networks and corridors' Best Practice Protected Area Guidelines Series 30 (IUCN 2020), 44; CMS, *Rethinking Ecological Connectivity – A pathway towards living in harmony with Nature* A publication developed in partnership with CMS, UNESCO and POST2020 Biodiversity Framework EU Support (April 2021), 1.
[260] IPBES, *Global Assessment Report on Biodiversity and Ecosystem Services*. Cited by the CMS at https://www.cms.int/en/topics/ecological-connectivity
[261] Arieanna C Balbar and Anna Metaxas, 'The current application of ecological connectivity in the design of marine protected areas' (2019) 17 Global Ecology and Conservation e00569, 16.

Maxwell and others noted that there have been no global-scale assessments of connectivity among marine protected areas, but regional-scale studies show them to have limited connectivity.[262]

a. Legal Recognition of Ecological Connectivity

While the science on ecological connectivity within MPA networks is still evolving, progress has been slow on the legal front and there is not yet any precise meaning of ecological connectivity in law. However, there is a growing recognition of ecological connectivity at the international level and growing literature on the topic.[263] The CBD itself does not address connectivity conservation directly, apart from the reference to a 'system' of protected areas in Article 8. Rather, interpretation of the Convention is informed by a significant amount of non-binding commitments and guidelines adopted by the COP, which attach significance to connectivity in the implementation of the CBD.[264] For example, Aichi Target 11 notably calls for "well-connected systems of protected areas" and counts connectivity of ecosystems as a relevant indicator of progress.[265]

However, the CBD Secretariat has noted only modest progress with regard to connectivity[266] and there have been calls for a stronger focus on connectivity under the Post-2020 global biodiversity framework.[267] The IUCN has claimed that this is anticipated to be realized via the broad-scale application of the ecosystem-based approach

[262] Maxwell and others, 'Area-based conservation in the twenty-first century', 221.
[263] See e.g., Hilty and others, 'Guidelines for conserving connectivity through ecological networks and corridors', Mark H Carr and others, 'The central importance of ecological spatial connectivity to effective coastal marine protected areas and to meeting the challenges of climate change in the marine environment' (2017) 27 Aquatic Conservation: Marine and Freshwater Ecosystems 6; Ben Boteler and others, 'Borderless conservation: integrating connectivity into high seas conservation efforts for the Salas y Gómez and Nazca ridges' (2022) *Frontiers in Marine Science*, forthcoming.
[264] Arie Trouwborst, 'Countering fragmentation of habitats under international wildlife regimes' in Bowman M, Davies PGG and Goodwin EJ (eds.), *Research Handbook on Biodiversity and Law* (Edward Elgar Publishing 2016), 229.
[265] Strategic Plan for Biodiversity 2011-2020, Provisional Technical Rationale, Possible Indicators and suggested milestones for the Aichi biodiversity targets, UNEP/CBD/COP/10/27/Add.1, 19 December 2010, available at https://www.cbd.int/doc/meetings/cop/cop-10/official/cop-10-27-add1-en.pdf.
[266] Secretariat of the CBD, *Global Biodiversity Outlook 5*, 82.
[267] CMS and others *Rethinking Ecological Connectivity – A pathway towards living in harmony with Nature*, 1 and https://www.cms.int/en/topics/ecological-connectivity

to spatial planning.[268] As it currently stands, connectivity appears in current draft text in Goal A and Targets 2 and 3.[269] The current language in Target 2 has been critiqued for focusing too narrowly on restoration.[270] Suggested improvements include ensuring that ecological connectivity is established and/or improved among other areas and that spatial planning takes place at different levels and is optimized for biodiversity conservation.[271] It has also been deemed essential to include dedicated indicators for connectivity in the new framework, which go beyond the previous limited approach, which omitted methods to measure non-contiguous areas and functional connectivity (e.g. by measuring progress in removing obstacles to migration).[272]

The concept of ecological connectivity has mostly been developed at the international level in the context of migratory species. The CMS provides the primary specialized intergovernmental framework for cooperative efforts on the issue of ecological connectivity[273] and has carried out significant work on enhancing its understanding.[274] Parties to the CMS understand that ecological connectivity is essential for the survival of wild species[275] and the COP has acknowledged on several occasions that the objectives of the Convention cannot be achieved without ensuring adequate connectivity conservation.[276] A definition was developed in 2019 (cited above) and in 2020 CMS parties affirmed their commitment to maintaining and restoring ecological connectivity as one of their top priorities.[277] Other multilateral environmental agreements (MEAs)

[268] Lausche and others, *Marine Connectivity Conservation "Rules of Thumb" For MPA and MPA Network Design*, 5.
[269] First Draft of the post 2020 global biodiversity framework, available at https://www.cbd.int/conferences/post2020/wg2020-03/documents
[270] CMS and others, *Rethinking Ecological Connectivity – A pathway towards living in harmony with Nature*, 4.
[271] Ibid
[272] Ibid.
[273] Ibid, 2.
[274] See e.g., CMS Resolutions 10.3, 11.25 and 12.7 on The Role of Ecological Networks in the Conservation of Migratory Species. Resolution 12.7 repealed the previous resolutions on this subject. See also Resolution 12.26 on Improving Ways of Addressing Connectivity in the Conservation of Migratory Species. Available at https://www.cms.int/en/topics/ecological-connectivity.
[275] https://www.cms.int/en/topics/ecological-connectivity
[276] For a more detailed discussion, see Trouwborst, 'Countering fragmentation of habitats under international wildlife regimes', 226-231.
[277] Hilty and others, *Guidelines for conserving connectivity through ecological networks and corridors*, ix.

dealing with migratory species such as cetaceans[278] and albatrosses and petrels[279] also illustrate the concept of connectivity. It has also been suggested that MEAs which recognize concepts such as the ecosystem approach, protected areas and networks, inherently recognize connectivity, in addition to those which deal with pollution and other forms of transboundary environmental damage (see Section 1.b and Chapter Three).[280]

Also discussed in Section 1.b is the 1971 Ramsar Convention, which was one of the first international instruments to recognize elements of the ecosystem approach. It has also been credited with contributing to recognition of connectivity and transboundary conservation.[281] As Trouwborst argues, given that rivers, streams and other wetlands can clearly provide for connectivity, the obligations under the Convention do consequently contribute to connectivity conservation.[282] This was acknowledged by the tenth COP in 2008 which confirmed that conservation of wetlands helps organisms adapt to climate change by providing "connectivity, corridors and flyways along which they can move".[283]

While not explicit, some authors argue that connectivity falls under the protection measures suggested by Article 5 of the UNESCO World Heritage Convention,[284] under which States shall endeavour "to take the appropriate legal, scientific, technical, administrative and financial measures necessary for the identification, protection, conservation, presentation and rehabilitation of this heritage".[285] The most recent iteration of the Operational Guidelines for the implementation of the World Heritage Convention (WHC)[286] explicitly recognizes ecological connectivity in its section on nomination of 'serial properties' (see Chapter Three), which are those that occur either on a national

[278] International Convention for the Regulation of Whaling (1946) 161 UNTS 72.
[279] Agreement on the Conservation of Albatrosses and Petrels (2001) ATS 5.
[280] Boteler and others, *Borderless conservation: integrating connectivity into high seas conservation efforts for the Salas y Gómez and Nazca ridges*, 11-12,
[281] See e.g., M. Vasilijević and others *Transboundary Conservation: A systematic and integrated approach.* Best Practice Protected Area Guidelines Series No. 23 (IUCN 2015), 15.
[282] Trouwborst, 'Countering fragmentation of habitats under international wildlife regimes', 223.
[283] Resolution X.24 on Climate Change and Wetlands (2008), cited in ibid.
[284] Ibid, 224
[285] Article 5(d) UNESCO World Heritage Convention.
[286] UNESCO Operational Guidelines for the Implementation of the World Heritage Convention, Intergovernmental Committee for the Protection of the World Cultural and Natural Heritage, WHC 21/01, 31 July 2021, available at https://whc.unesco.org/en/guidelines

territory or in a transnational context.[287] Such nominated sites include two or more component parts related by clearly defined links, which should "reflect cultural, social or functional links over time that provide, where relevant, landscape, ecological, evolutionary or habitat connectivity."[288] The Guidelines also provide for the establishment of buffer zones wherever necessary for the proper protection of a site.[289] As discussed in Chapter Three, the UNESCO's World Network of Biosphere Reserves provides for the establishment of transboundary biosphere reserves and has been said to contribute to large scale connectivity.[290]

The concept of connectivity as found in the CMS, which revolves around international cooperation for migratory species, can also be seen regarding the management of straddling and highly migratory fish stocks under UNCLOS and UNFSA.[291] UNFSA in particular has been cited as an example of where the law of the sea recognizes ocean connectivity (see further Section 1.2).[292] As noted earlier, it requires States to take into account the transboundary impacts of their decisions.[293] UNCLOS itself does not include any specific references to ecological connectivity, apart from, as stated earlier, recognizing that 'the problems of ocean space are closely interrelated and need to be considered as a whole'.[294] Yet many of its obligations cannot be achieved without addressing natural connectivity needs, in particular Articles 192 and 194 on protection of the marine environment.[295] Ecological connectivity is explicitly recognized in the current draft of the BBNJ text as one of the indicative criteria for identification of ABMTs and

[287] Ibid, para 138.
[288] Ibid, para 137.
[289] Ibid, para 103.
[290] CMS and others, *Rethinking Ecological Connectivity – A pathway towards living in harmony with Nature*, 3.
[291] Ben Boteler and others, Borderless conservation: integrating connectivity into high seas conservation efforts for the Salas y Gómez and Nazca ridges, (2022) Frontiers in Marine Science, 11-12, forthcoming.
[292] Harriet Harden-Davies and others, 'Rights of Nature: Perspectives for Global Ocean Stewardship' (2020) 122 Marine Policy 104059, 4 cited in Elise Johansen and others, 'A Marine-Biology-Centric Definition of Ocean Connectivity and the Law of the Sea' (2021) 12 Arctic Review on Law and Politics, 190-206.
[293] Arts. 5 and 6 UNFSA. Kirk, 'The Ecosystem Approach and the Search for An Objective and Content for the Concept of Holistic Ocean Governance', 40.
[294] Third Recital to Preamble of UNCLOS.
[295] Lausche and others, 'The Legal Aspects of Connectivity Conservation. Volume 1 – A Concept Paper', 159.

MPAs.[296] Connectivity is also mentioned in draft Article 14 as part of the objective to establish a "network of ecologically representative and connected marine protected areas […]."[297] While it is positive that the BBNJ draft text mentions ecological connectivity, some authors opine that it needs to be operationalized in various parts of the treaty text, for example, by reconsidering the static nature of MPAs.[298]

Recent developments reflect a more integrated approach to conservation of connectivity, which is not limited only to protected areas. The current draft text of the BBNJ agreement lists 'integrated approach' in draft Article 5 on General Principles and Approaches,[299] which commentary suggests emphasizes the importance of ecological, geographic and cross-sectoral integration and the concept of connectivity.[300] The CBD first hinted at this during the fifth COP meeting in 2000, when they stated that the ecosystem approach does not preclude other management approaches but rather could integrate these and other methodologies to deal with complex situations.[301] The CBD's Programme of Work on Protected Areas (PoWPA)[302] requests parties to integrate protected areas into the wider land and seascape by applying the ecosystem approach and considering ecological connectivity and ecological networks.[303] This illustrates that the CBD views ecological connectivity and networks as important elements of the ecosystem approach. Activity 1.2.3 specifically calls upon parties to the Convention to establish and manage "ecological networks, ecological corridors and/or buffer zones, where appropriate, to maintain ecological processes and also taking into account the needs of migratory species". Activity 1.2.4 goes on to request that tools of ecological connectivity, such as ecological corridors, be developed linking together protected areas where necessary.

[296] Annex I, Further revised draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction. 30 May 2022.
[297] Draft Article 14 (b), ibid.
[298] Ina Tessnow-von Wysocki and Alice BM Vadrot, 'Governing a Divided Ocean: The Transformative Power of Ecological Connectivity in the BBNJ negotiations' (2022) 10 Politics and Governance 14, 11.
[299] Draft Article 5(f) further revised text.
[300] IUCN, *Commentary on the further revised draft text*, 20.
[301] CBD Decision V6, *Ecosystem Approach* UNEP/COP/5/23 (2000), A.5.
[302] Available at https://www.cbd.int/protected/pow/learnmore/intro/
[303] Goal 1.2 PoWPA.

Ecological corridors are distinct from protected areas. While protected areas are focused on protecting biodiversity, ecological corridors must conserve connectivity.[304]

In this vein, recent Guidelines issued by the IUCN in 2020 on 'Conserving Connectivity through Ecological Networks and Corridors' refer to the novel concept of 'Ecological Network for Conservation', which is defined as "a system of core habitats (protected areas, OECMs and other intact natural areas), connected by ecological corridors, which is established, restored as needed and maintained to conserve biological diversity in systems that have been fragmented."[305] Essentially the idea is that ecological networks are to be composed of 'core units', which can comprise of protected areas and other effective area-based conservation measures (OECMs), which may be connected by ecological corridors, whose purpose is to maintain or restore ecological connectivity.[306] The CBD also sees OECMs as a means of delivering greater representativeness and connectivity in protected area systems, which may help address greater threats to biodiversity and enhance resilience with regard to climate change.[307] Commentary on the current text of the BBNJ instrument also recommends that OECMs and ecological corridors be included in any system of ABMTs in order to connect ecological networks.[308]

This is also consistent with the larger kinds of transboundary conservation areas recommended by the IUCN Working Group on Protected Areas (WCPA) such as 'Transboundary Migration Conservation Areas' (TMCAs) and 'Transboundary Conservation Seascapes' which are ecologically connected areas that include both protected areas and multiple resource use areas across one or more international boundaries and involves some form of cooperation (see Chapter Two, Section 2(b) and Three, Section 2).[309] The CMS recently called upon parties to "apply the concept of Transfrontier Conservation Areas, meaning an area or component of a large ecological

[304] Hilty and others, 'Guidelines for conserving connectivity through ecological networks and corridors', 16.
[305] Ibid, 14.
[306] Ibid, 14-15; 20.
[307] CBD Decision 14/8, Annex III, Scientific and technical advice on other effective area-based conservation measures, A. f. page 11,
[308] IUCN Commentary on draft Article 14(b), 50, 8 August 2022.
[309] Vasilijević, *Transboundary Conservation: A systematic and integrated approach*, xi; 10.

region that straddles the boundaries of two or more countries and is within their national jurisdiction, which may encompass one or more protected areas, as well as multiple resource use areas, in their transboundary conservation efforts."[310] Marine corridors are often important tools for such areas as they can provide for physical passage of species across international boundaries, thus ensuring connectivity of populations and maximizing the potential range of species.[311]

The EU Biodiversity Strategy for 2030 explicitly underlines the need for ecological corridors: "in order to have a truly coherent and resilient Trans-European Nature Network, it will be important to set up ecological corridors to prevent genetic isolation, allow for species migration, and maintain and enhance healthy ecosystems".[312] To this end, the Strategy calls for cooperation across borders to be promoted and supported.[313] In 2020, the IUCN recommended that the designation 'ecological corridor' be recognised in law and policy internationally,[314] and proposed a novel definition: "a clearly defined geographical space that is governed and managed over the long term to maintain or restore effective ecological connectivity."[315] Ecological corridors may also preserve in situ biodiversity, but it is not a requirement.[316] Similarly MPAs may also protect connectivity but it is not a requirement.[317] It is important to point out that ecological corridors are not a substitute for protected areas or OECMs, rather they are meant to complement them.[318] EU guidance on the integration of ecological corridors into MPA networks notes that while some of them may fulfil the criteria for protected areas and may be counted as such, others may be "too small to be manageable as protected areas."[319]

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[310] CMS Resolution 12.7 on 'The Role of Ecological Networks in the Conservation of Migratory Species', adopted in February 2020, para. 11.
[311] Vasilijević, *Transboundary Conservation: A systematic and integrated approach*, 12.
[312] European Commission *EU Biodiversity Strategy for 2030. Bringing nature back into our lives* COM (2020) 380 final, 4.
[313] Ibid.
[314] Hilty and others, 'Guidelines for conserving connectivity through ecological networks and corridors', 44.
[315] Ibid, 16.
[316] Ibid.
[317] See further ibid, 17
[318] Ibid, 24
[319] European Commission *Criteria and Guidance for Protected Area Designations* SWD (2022) 23 final, Brussels 28.01.2022, 24.

4. Transboundary MPA Networks as a means of Operationalizing the Ecosystem Approach

MPAs and MPA networks provide the context within which marine connectivity conservation needs are identified and addressed in concrete terms[320] while transboundary networks of MPAs have been described as one of the few mechanisms to address marine connectivity conservation at the ecosystem scale.[321] It is worth recalling at this juncture that the very definition of a TBMPA refers to "protected areas that are ecologically connected".[322] Connectivity was recently formally recognized by the UN General Assembly in April 2021 via the adoption of Resolution 75/271 on 'Nature knows no borders: transboundary cooperation – a key factor for biodiversity conservation, restoration and sustainable use'.[323] This Resolution is the first UN General Assembly decision on international and transboundary cooperation for the conservation and restoration of biodiversity.[324] It emphasises the importance of cooperation to avoid the fragmentation of transboundary habitats and to maintain connectivity between ecosystems, and recommends transboundary protected areas and ecological corridors as a means to do so. [325]

Jakobsen opines that the recent emphasis on MPAs in international fora is a reflection of a shift taking place in international law from the previous fragmented, sectoral approach to more integrated holistic approach, with MPAs offering a tool for implementing both the precautionary principle as well as the ecosystem approach.[326] Therefore, it is arguable that TBMPAs can be viewed as means of implementing the ecosystem approach in

[320] Lausche and others, 'The Legal Aspects of Connectivity Conservation. Volume 1 – A Concept Paper', 151.
[321] See e.g., Nur Arafeh-Dalmau and others, 'Marine Spatial Planning in a Transboundary Context: Linking Baja California with California's Network of Marine Protected Areas' (2017) 4 Frontiers in Marine Science
[322] Vasilijević, *Transboundary Conservation: A systematic and integrated approach*, xi. See Chapter Two, Section 2(b).
[323] UN General Assembly, *Nature knows no borders: transboundary cooperation – a key factor for biodiversity conservation, restoration and sustainable use*, A/RES/75/271, 16 April 2021, para 9.
[324] https://www.cms.int/en/topics/ecological-connectivity
[325] UNGA Resolution A/RES/75/271, paras 3 and 9 respectively.
[326] Ingvild Ulrikke Jakobsen, 'Marine Protected Areas and Climate Change' in Johansen E, Busch SV and Jakobsen IU, *The Law of the Sea and Climate Change: Solutions and Constraints* (Cambridge University Press 2020), 234, 239.

various ways. They enable protection of species and ecosystems on an ecosystem scale and arguably act as a driver of convergence between States, given the necessity to harmonize relevant laws and cooperate to manage TBMPA networks. As noted by Lieberknecht, transboundary integration across jurisdictional boundaries in line with an ecosystem approach also requires horizontal governance integration in order to facilitate cooperation and collaboration across institutions responsible for different jurisdictions.[327]

It has been claimed that unless global and regional legal instruments dealing with biodiversity, climate change and environmental sustainability address connectivity conservation effectively over the long term, most will not meet their objectives.[328] The 2019 IPBES report underlined that maintaining and designing connectivity are essential for the functioning of many ecological systems and processes and considers that mainstreaming connectivity into economic growth and development is essential to achieve the 2030 Sustainable Development Agenda.[329] In 2020, the IUCN stated that it is imperative that the world moves toward a coherent global approach for ecological connectivity conservation and begins to measure and monitor the effectiveness of efforts to protect connectivity and thereby achieve functional ecological networks.[330]

Despite efforts, there are still claims that design and management of MPA networks remains poorly understood.[331] The European Marine Board (EMB) has stated that the global distribution of MPAs is both uneven and unrepresentative on multiple scales and does not represent an effective network.[332] In 2020, the CBD reported on progress to date in achieving the Aichi Targets and highlighted challenges in ensuring that protected areas are ecologically representative and connected to one another as well as to the wider

[327] Lieberknecht, *Ecosystem-Based Integrated Ocean Management: A Framework for Sustainable Ocean Economy Development*, 22.
[328] Hilty and others, 'Guidelines for conserving connectivity through ecological networks and corridors', 44.
[329] IPBES, *Global Assessment Report on Biodiversity and Ecosystem Services*, cited by the CMS at https://www.cms.int/en/topics/ecological-connectivity.
[330] Hilty and others, 'Guidelines for conserving connectivity through ecological networks and corridors', ix.
[331] Ribeiro and Olsen, 'Achieving Ecologically Coherent MPA Networks in Europe: Science Needs and Priorities', 11, 49.
[332] Ibid.

seascape.[333] Meehan and others conducted a review of peer-reviewed publications which found evidence of an uneven evaluation of effectiveness across the qualitative elements of MPA networks, with many MPA network evaluations not addressing most elements.[334] While various indicators have been proposed to assess effectiveness of individual MPAs, no comprehensive set of indicators exists to assess effectiveness of MPA networks, particularly for Aichi Target 11.[335] In an EU context, there is still a lack of guidance and consensus on how to determine 'coherent' and 'representative' and as a result no standard is currently applied uniformly across the region.[336] A recent analysis assessed that the EU Natura 2000 network of protected areas does not constitute a coherent network in the sense of truly interconnected protected areas throughout an entire country or throughout the whole of the EU.[337] Illustrative of the scale of the challenge, there is no example of a coherent network of MPAs in any area of the world under national jurisdiction despite several decades of effort.[338] Recent studies on selected regions have also demonstrated that regional MPA networks have failed to achieve ecological coherence to date.[339] In order to address this, a cooperative region-region approach has been recommended to identify where positioning new MPAs can enhance ecological coherence.[340] These arguments illustrate the need for more research on existing examples of regional MPA networks, such as contained in this thesis. It is submitted that there is even more of a

[333] Secretariat of the CBD, *Global Biodiversity Outlook* 5, 82.
[334] Mairi C Meehan and others, 'How far have we come? A review of MPA network performance indicators in reaching qualitative elements of Aichi Target 11' (2020) 13 Conservation Letters e12746, 11.
[335] Ibid, 2.
[336] EEA, *Marine protected areas in Europe's seas. An overview and perspectives for the future*, 9; European Commission 'Report from the Commission to the European Parliament and the Council on the progress in establishing marine protected areas (as required by Article 21 of the Marine Strategy Framework Directive 2008/56/EC)' (2015), 5, 7. Work is ongoing in this regard. See for example, Wolters and others *Proposal for an assessment method of the ecological coherence of networks of marine protected areas in Europe* (Deltares 2014).
[337] See Jonathan Verschuuren, 'Connectivity: is Natura 2000 only an ecological network on paper?' in Charles-Hubert Born and others, *The Habitats Directive in its EU environmental law context: European nature's best hope?* (Routledge, Taylor & Francis Group 2015), 285-302, 301.
[338] David Johnson and others, 'When is a marine protected area network ecologically coherent? A case study from the North-east Atlantic' (2014) 24 Aquatic Conservation: Marine and Freshwater Ecosystems 44, 46.
[339] See for example, ibid and Foster and others, 'Assessing the ecological coherence of a marine protected area network in the Celtic Seas'.
[340] Johnson and others, 'When is a marine protected area network ecologically coherent? A case study from the North-east Atlantic', 44.

dearth of knowledge in relation to transboundary MPA networks over those within national jurisdictions given the additional complexities in obtaining data.

There have been calls to facilitate the operationalization of connectivity on the ground through adequate national legislation, the provision of guidance and the promotion of international, regional, bilateral and transboundary cooperation.[341] A 'network' implies a coordinated system of MPAs, linked through biological levels, as well as administrative levels, reflecting a consistent approach to design, finance, management and monitoring.[342] Appropriate legislative and regulatory frameworks are fundamental to achieving this.[343] Therefore, effective MPA networks and marine connectivity conservation areas require legal authority with clear powers, mandates, responsibilities, mechanisms for planning and coordination, incentives, funding, and enforcement.[344] The EMB predicts that progress on networks is more likely to occur at the national and regional scale rather than globally.[345] With this in mind, the next chapter will examine the regional ocean governance model as an umbrella governance framework for establishing ecologically connected networks of MPAs across international boundaries.

[341] CMS and others *Rethinking Ecological Connectivity – A pathway towards living in harmony with Nature*, 4.
[342] IUCN-WCPA, *Establishing Marine Protected Area Networks-Making It Happen*, 12.
[343] Ibid, 19.
[344] Lausche and others, 'The Legal Aspects of Connectivity Conservation. Volume 1 – A Concept Paper', 165.
[345] Ribeiro and Olsen, 'Achieving Ecologically Coherent MPA Networks in Europe: Science Needs and Priorities', 11.

Chapter Five: The Regional Approach to the Establishment and Management of Transboundary Marine Protected Areas

Tackling fragmentation of ocean governance systems and implementing an ecosystem approach in practice remain challenging. Transboundary realities in the marine environment cannot be effectively tackled by individual States working in isolation, which effectively compels States to cooperate beyond borders. Efforts at the regional level have shown promise in this regard and could help to link disconnected areas of regulation.[1] This chapter will explore how the cooperation and coordination strengths of regional ocean governance (ROG) mechanisms can offer a way to overcome some of the pervasive fragmentation discussed in the previous chapter. It will also analyze ROG as a model for the establishment and management of networks of Transboundary Marine Protected Areas (TBMPAs) across international jurisdictions, in line with an ecosystem approach.

1. Introduction to Ocean Governance

The notion of governance has mostly been explored by the social sciences and is a relatively recent addition to legal research.[2] The Cambridge Dictionary defines 'governance' as "the way that organizations or countries are managed at the highest level, and the systems for doing this".[3] Laffoley, writing in the context of MPA management, describes it as relating to decision-making and "the means and institutions by which power is exercised through a variety of instruments, on the basis of legitimacy, authority, and responsibility."[4] It is often viewed as a multifaceted process, characterized by flexibility and dynamism, in contrast to the static structures normally associated with

[1] Glen Wright and others, 'Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14' (2017) Partnership for Regional Ocean Governance (PROG): IDDRI, IASS, TMG & UN Environment,11; Philippe Sands and others, *Principles of international environmental law* (Fourth edn, Cambridge University Press 2018), 457, 566.
[2] KH Ladeur, *Governance, Theory of* in Max Planck Encyclopedias of International Law. Accessed at https://opil-ouplaw-com.ucc.idm.oclc.org/view/10.1093/law:epil/9780199231690/law-9780199231690-e940?rskey=UV6lxc&result=2&prd=MPIL
[3] https://dictionary.cambridge.org/dictionary/english/governance?q=Governance
[4] Dan Laffoley and others, 'Marine protected areas' in *World Seas: an Environmental Evaluation* (Elsevier 2019), 558.

legal rules.[5] It depends on cooperation to succeed, building on partnerships and the interactions between multiple fields and actors.[6] Ocean governance has now become a sub-field in its own right, defined by Elisabeth Mann Borgese as "the way in which ocean affairs are governed, not only by governments, but also by local communities, industries and other 'stakeholders'. It includes national and international law, public and private law as well as custom, tradition and culture and the institutions and processes created by them."[7] It has been described by Blanchard as an approach towards the way we use the oceans; via the application of an array of rules, norms, and concepts, and the formal and informal interactions between fields, institutions and actors.[8] While it is clear that law is an essential element of ocean governance, given that the system created by the United Nations Law of the Sea Convention (UNCLOS),[9] provides the overarching operational framework for the oceans, the relationship between ocean governance and the law of the sea remains contested and unclear, as it is often not precisely defined.[10]

While the law of the sea is naturally more concerned with legally binding norms, some scholars have argued that elements of good governance, such as cross-sectoral cooperation and coordination, interdisciplinary principles such as the ecosystem approach, science-based decision-making and transparency, could be engaged to enhance the existing legal framework.[11] Blanchard underlines the advantages of the 'less-politicized forms of coordination' entailed in a governance approach, over a strictly legal approach, as a more holistic way of addressing the transboundary challenges particular to

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[5] Catherine Blanchard, 'Fragmentation in high seas fisheries: Preliminary reflections on a global oceans governance approach' (2017) 84 Marine Policy 327, 329 citing Douglas Johnston, 'The challenge of international ocean governance. Institutional, ethical and conceptual dilemmas', in Rothwell, D and Vander Zwaag, D (eds.), *Towards Principled Governance. Australian and Canadian Approaches and Challenges* (Routledge 2006) at 356.

[6] Ibid.

[7] *Ocean Governance: Legal, Institutional and Implementation Considerations*, Ocean Policy Research Institute Report No. 5 (The Nippon Foundation, 2002), cited in Dirk Werle and others, 'The Future of Ocean Governance and Capacity Development', *The Future of Ocean Governance and Capacity Development* (Brill Nijhoff 2019), 6.

[8] Blanchard, 'Fragmentation in high seas fisheries: Preliminary reflections on a global oceans governance approach', 329.

[9] United Nations Convention on the Law of the Sea (1982) 1833 UNTS 397.

[10] On this point, see further Yoshinobu Takei, 'A Sketch of the Concept of Ocean Governance and Its Relationship with the Law of the Sea' in Ryngaert, C, Molenaar EJ and Nouwen S, *What's Wrong with International Law?* (Brill Nijhoff 2015).

[11] Ibid, 61.

the marine environment.[12] Rothwell and others also emphasize that the transboundary nature of many activities and processes in the marine environment can only be effectively managed where States agree on coordinated responses, with implementation of the law of the sea depending very much on regional cooperation and subsequent follow through by participating States.[13] Therefore, it would appear that the legal and governance elements need to co-exist and complement one another in order to achieve a harmonious state of ocean governance. It is submitted that such broad governance arrangements facilitate the effective inter-State cooperation required to ensure compliance with principles of international law applying at the global and regional level, including for example the obligation not to cause significant transboundary harm to other States and in areas beyond national jurisdiction (ABNJ).[14]

2. The Emergence of a Regional Approach to Ocean Governance

The regionalization of international environmental law and policy has emerged as an important legal trend in recent years, endorsing the view that not all international environmental problems need to be dealt with at the global level.[15] In 2006, in its landmark report on fragmentation in international law, the International Law Commission (ILC) recognized the benefits of a regional approach to law making, due to the relative homogeneity of stakeholder interests, which may ensure a more efficient or equitable implementation of the relevant norms.[16] They added that the presence of a common cultural community better ensures the legitimacy of the regulations and that they are

[12] Blanchard, 'Fragmentation in high seas fisheries: Preliminary reflections on a global oceans governance approach', 329. In the context of marine plastic pollution, see discussions by Elizabeth A Kirk and Naporn Popattanachai, 'Marine plastics: Fragmentation, effectiveness and legitimacy in international lawmaking' (2018) 27 Review of European, Comparative & International Environmental Law 222.
[13] Donald Rothwell and others, *The Oxford handbook of the law of the sea* (Oxford University Press, USA 2015), 900; see also See e.g., Juliano Palacios-Abrantes and others, 'The transboundary nature of the world's exploited marine species' (2020) 10 Scientific Reports 1.
[14] Principle 21 Stockholm Declaration on the Human Environment (1972) UN Doc. A/CONF48/14/Rev.1; Principle 2 Rio Declaration on Environment and Development (1992) 31 ILM 874, UN Doc. The classic formulation of the 'no harm' principle was formulated in the *Trail Smelter Arbitration (US v. Canada)*, (1941) 3 RIAA 1911. For further discussion see Owen McIntyre, 'The current state of development of the no significant harm principle: How far have we come?' (2020) 20 International Environmental Agreements: Politics, Law and Economics 601 and Pierre-Marie Dupuy and Jorge E. Viñuales, *International environmental law* (Cambridge University Press 2015), 55-58.
[15] Julien Rochette and others, 'Regional oceans governance mechanisms: A review' (2015) 60 Marine Policy 9.
[16] International Law Commission, *Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law*, UN Doc A/CN.4/L.682 (13 April 2006), 106.

understood and applied in a coherent way.[17] While 'regionalism' has been recognized as "technique for international law making",[18] it does not, however, supersede the overarching authority of international law itself. Crawford has observed that the International Court of Justice (ICJ) has been reluctant to attribute any legal significance to regional considerations preferring instead to see regional cases through the prism of general international law.[19] This ensures that the universality of international law prevails, thus aiding the process of convergence and counteracting fragmentation of international law. In an ocean governance context, given that the ocean is a global resource, coordination is essential at the global level, while much of the implementation of solutions take place at the national and local levels.[20] This means that the regional level cannot operate in isolation of the national and global level, underlining what Mahon and Fanning refer to as a 'multilevel' approach to ocean governance.[21]

a. The Duty to Cooperate in International Law

The duty to cooperate regionally flows from the well-established general duty to cooperate in international law.[22] In the context of environmental law, this duty can take several forms ranging from a duty to cooperate 'in a spirit of global partnership'[23] and a duty to cooperate in 'a transboundary context' which includes *inter alia* due diligence obligations such as the duty of notification and consultation with States potentially

[17] Ibid.
[18] Ibid.
[19] James Crawford, *Chance, Order, Change: The Course of International Law* (Hague Academy of International Law, General Course on Public International Law, 2014), 337, cited in Owen McIntyre, 'Convergence in international environmental and natural resources law' (2022) Environmental Policy and Law 1, 9.
[20] Robin Mahon and Lucia Fanning, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance' (2019) 107 Marine Policy 103590, 1; Rothwell and others, *The Oxford handbook of the law of the sea*, 900.
[21] Mahon and Fanning, ibid, 1.
[22] See e.g., MOX Plant Case (Ireland v. United Kingdom), Provisional Measures, ITLOS Case No. 10, Order (3 December 2001). See also Principle 4 of the 'Declaration on Principles of International Law Concerning Friendly Relations and Cooperation among States in accordance with the Charter of the United Nations', UN General Assembly Res. 2625 (XXV), 26 October 1970, Dupuy and Viñuales, *International environmental law*, 64.
[23] This encompasses relations among States regarding the global commons, from which *inter alia* the notions of common concern of humankind and common heritage of mankind have emerged. Dupuy and Viñuales, ibid, 65.

affected by an activity having consequences on the environment.[24] Ensuring compliance with these due diligence standards is inherent to key principles of international law such as the 'no harm' principle.[25] When it comes to shared resources, the ICJ considers that the procedural obligations of information, notification and negotiation are vital.[26] Dupuy and Viñuales note that cooperation remains an obligation of conduct whose specific manifestation depends upon what could be expected from a State acting in good faith.[27] International tribunals have adjudicated on the scope of the duty to cooperate in an environmental context, construing it to require *inter alia* exchange of information,[28] joint evaluation of the environmental impacts of certain activities[29] and the consultation with the Secretariat of an environmental treaty of particular relevance to the case.[30]

With regard to the oceans, the notion that seas with multiple coastal states could be governed or managed regionally first appeared in the 1970s.[31] By 1982, a legal obligation to cooperate on a regional basis for the protection and preservation of the marine environment was included in the text of the United Nations Convention on the Law of the Sea (UNCLOS).[32] Article 197 UNCLOS states that:

> "States shall cooperate on a global basis and, as appropriate, on a regional basis, directly or through competent international organizations, in formulating and elaborating international rules, standards and recommended practices and

[24] Ibid. See Pulp Mills on the River Uruguay (Argentina v. Uruguay), Judgment, ICJ Reports 2010, 14, *MOX Plant* Case ITLOS 2001 and Article 9 of the International Law Commission's draft Articles on Prevention of Transboundary Harm. See further *Report of the International Law Commission, Fifty-third session*, 2001; G.A. Off. Recs., Fifty-sixth session, Suppl. No. 10 (A/56/10).
[25] See ICJ judgement in *Pulp Mills* and McIntyre, 'The current state of development of the no significant harm principle: How far have we come?', 2.
[26] *Pulp Mills*. See also Principle 19 Rio Declaration: "States shall provide prior and timely notification and relevant information to potentially affected states on activities that may have a significant adverse transboundary environmental effect and shall consult with those states at an early stage and in good faith" which is considered to reflect customary international law. See also Sands and others, *Principles of international environmental law*, 694.
[27] Dupuy and Viñuales, *International environmental law*, 66. See North Sea Continental Shelf Case, Judgment, ICJ reports 1969, 3, para. 85; *Pulp Mills*, paras 145-6.
[28] *MOX Plant* ITLOS 2001, para. 89(1).
[29] *MOX Plant*, ibid, para 89(b); *Pulp Mills*, para 281.
[30] Costa Rica v. Nicaragua, Judgment, ICJ Reports 2009, 214, paras. 80 and 86(2).
[31] Lewis M Alexander, 'Regionalism and the law of the sea: The case of semi-enclosed seas' (1974) 2 Ocean Development & International Law 151, cited in Nilufer Oral, 'Forty years of the UNEP Regional Seas Programme: from past to future' in Rayfuse R (ed.) *Research Handbook on International Marine Environmental Law* (Edward Elgar Publishing 2015), 341.
[32] On UNCLOS, see further Chapter Three.

procedures consistent with this Convention, for the protection and preservation of the marine environment, taking into account characteristic regional features."

Article 123 UNCLOS states that States bordering enclosed and semi-enclosed seas "should" cooperate with each other, and "shall endeavour, directly or through an appropriate regional organization" to *inter alia* "coordinate the implementation of their rights and duties with respect to the protection and preservation of the marine environment".[33] The nature of this obligation is slightly ambiguous in the sense that "should" is used instead of "shall" in relation to the duty to cooperate, however the obligation to coordinate is strengthened by the use of "shall endeavour".

In relation to the conservation of living resources, there is a stronger duty to cooperate via the use of "shall" in Article 61(2), where UNCLOS requires the coastal State and competent international organizations, "whether subregional, regional or global", to cooperate to avoid over-exploitation in the Exclusive Economic Zone (EEZ).[34] States are also specifically required to "cooperate to establish subregional or regional fisheries organizations" for the purposes of conserving living marine resources in the high seas.[35] The United Nations Fish Stocks Agreement (UNFSA), which supplements UNCLOS, specifically created an obligation for states to cooperate through Regional Fishery

[33] Article 123 UNCLOS, "States bordering an enclosed or semi-enclosed sea **should** cooperate with each other in the exercise of their rights and in the performance of their duties under this Convention. To this end they **shall endeavour**, directly or through an appropriate regional organization:
(a) to coordinate the management, conservation, exploration and exploitation of the living resources of the sea;
(b) to coordinate the implementation of their rights and duties with respect to the protection and preservation of the marine environment;
(c) to coordinate their scientific research policies and undertake where appropriate joint programmes of scientific research in the area;
(d) to invite, as appropriate, other interested States or international organizations to cooperate with them in furtherance of the provisions of this article." (Emphasis added by author).

[34] Article 61(2) UNCLOS: "The coastal State, taking into account the best scientific evidence available to it, shall ensure through proper conservation and management measures that the maintenance of the living resources in the exclusive economic zone is not endangered by over-exploitation. As appropriate, the coastal State and competent international organizations, whether subregional, regional or global, **shall cooperate to this end**." Emphasis added by author. For judicial interpretation of the duty to cooperate with respect to conservation of living resources under UNCLOS, see *Request for an Advisory Opinion Submitted by the Sub-Regional Fisheries Commission* (SRFC) (Advisory Opinion), Case No. 21, 2 April 2015.

[35] Article 118 UNCLOS "States **shall cooperate** with each other in the conservation and management of living resources in the areas of the high seas... They **shall,** as appropriate, **cooperate** to establish subregional or regional fisheries organizations to this end."

Management Organizations (RFMOs).[36] Other express mentions of the duty to cooperate in UNCLOS include Article 64 which deals with highly migratory species[37] and Article 276 which requires States to cooperate with regional marine scientific and technological research centres.[38]

In 1992, at the United Nations Conference on Environment and Development (UNCED),[39] as part of the shift towards a more holistic approach to ocean management, the need for greater attention to regional cooperation was highlighted, not just to address transboundary issues, but also to ensure technical cooperation and sharing of costs among developing countries.[40] The Preamble to the Convention on Biological Diversity (CBD)[41] specifically stresses "the importance of, and the need to promote, international, regional and global cooperation among States and intergovernmental organizations and the non-governmental sector for the conservation of biological diversity and the sustainable use of its components." In relation to the marine environment, Article 5 requires that States cooperate for the conservation and sustainable use of biological diversity in respect of areas beyond national jurisdiction.[42]

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[36] Arts. 10, 11 and 12 UNFSA. See also Article 8(1) which states that "Coastal States and States fishing on the high seas **shall,** in accordance with the Convention, **pursue cooperation** in relation to straddling fish stocks and highly migratory fish stocks either directly or through appropriate subregional or regional fisheries management organizations or arrangements, taking into account the specific characteristics of the subregion or region, to ensure effective conservation and management of such stocks." (Emphasis added by author).

[37] Article 64(1) UNCLOS: "The coastal State and other States whose nationals fish in the region for the highly migratory species listed in Annex I **shall cooperate** directly or through appropriate international organizations with a view to ensuring conservation and promoting the objective of optimum utilization of such species throughout the region, both within and beyond the exclusive economic zone. In regions for which no appropriate international organization exists, the coastal State and other States whose nationals harvest these species in the region **shall cooperate** to establish such an organization and participate in its work."

[38] Article 276 (2) UNCLOS: "All States of a region **shall cooperate** with the regional centres therein to ensure the more effective achievement of their objectives." Emphasis added by author.

[39] The United Nations Conference on Environment and Development, also known as the 'Earth Summit' or the 'Rio Conference', was held from 1-15 June 1992 in Rio de Janeiro, Brazil. See further Dupuy and Viñuales, *International environmental law*, 13. See also Chapters Two and Four.

[40] Mahon and Fanning, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance', 2.

[41] Convention on Biological Diversity (1992) 1760 UNTS 79.

[42] Article 5 CBD, "Each Contracting Party **shall, as far as possible and as appropriate, cooperate** with other Contracting Parties, directly or where appropriate, through competent international organizations, in respect of areas beyond national jurisdiction and on other matters of mutual interest, for the conservation and sustainable use of biological diversity." Emphasis added by author.

Parties to the Convention on Migratory Species (CMS)[43] are also obliged to cooperate regarding conservation of migratory species and their habitats.[44] Sands and others claim the decision to negotiate a new treaty for Biodiversity Beyond National Jurisdiction (BBNJ) elevates the duty to cooperate to a higher level of international integration.[45] It is submitted, in this author's opinion, that a combined reading of the above provisions enable one to deduce that the duty to cooperate to protect the marine environment as encapsulated by Article 197 UNCLOS, and mutually supported by provisions of the CBD (such as the legal obligation on States to establish MPAs), infers a duty to cooperate to establish MPAs on both global and regional levels. In terms of procedural content, apart from the usual due diligence obligations to act in good faith, the IUCN has suggested that in the context of transboundary cooperation for the purposes of MPA management, cooperation implies, at a minimum, "regular communication and information sharing, […] prior consultation, coordinated action, joint management planning and/or joint implementation of decisions."[46]

3. Mechanisms for Regional Ocean Governance

ROG efforts vary widely in scope, mandate, and spatial extent, which reflects the varied needs and priorities of different places, settings, sectors, and marine ecosystems.[47] Before introducing different types of ROG mechanisms, it is first necessary to tackle the thorny question of what is meant by the term 'marine region'. As discussed in Chapter Three, under the framework created by UNCLOS, the ocean is legally divided into areas of national jurisdiction and areas beyond national jurisdiction (ABNJ). These are essentially

[43] Convention on the Conservation of Migratory Species of Wild Animals (1979) 1651 UNTS 333.
[44] Ibid, Article II (1) and (3)(a).
[45] Sands and others, *Principles of international environmental law*, 549. See draft Article 6 of the Further revised draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction. Note by the President. Advance, unedited version, 30 May 2022, which deals with International Cooperation for how parties currently envisage cooperation in a future BBNJ agreement: "Parties shall cooperate" under this Agreement, including "through strengthening and enhancing cooperation with and promoting cooperation among relevant legal instruments and frameworks and relevant global, regional, subregional and sectoral bodies [and members thereof] in the achievement of the objective of this Agreement".
[46] Maja Vasilijević and others, *Transboundary Conservation: A systematic and integrated approach.* Best Practice Protected Area Guidelines Series No. 23. (IUCN 2015), ix.
[47] Wright and others, 'Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14', 13.

geo-political marine regions that represent the territories of States.[48] Ecologically, the ocean can be divided into biogeographic regions, which group similar species and habitats, often as controlled by climatic and oceanographic parameters.[49] Given that marine ecological and biogeographic units are spatially and temporally dynamic, they can be challenging to delineate.[50] While there is no hierarchy or preferred way to classify marine regions, efforts are underway to create a standard referencing system.[51] They have been defined in several different ways to date, e.g. via marine ecoregions,[52] large marine ecosystems (LMEs),[53] sea basins and/or seascapes,[54] which represent some of the common science-based approaches for defining large marine areas in line with an ecosystem approach to marine management.[55] In their 2019 global overview of ROG arrangements, Mahon and Fanning opted to define transboundary ocean regions in accordance with the regions defined by the United Nations Environment Programme (UNEP) Regional Seas Programme (RSP), given that it has a broad acceptance from a

[48] David E Johnson and others, 'Building the regional perspective: platforms for success' (2014) 24 Aquatic Conservation: Marine and Freshwater Ecosystems 75, 76.
[49] Ibid citing MV Lomolino and others, *Biogeography (Sinauer, Sunderland, MA)* (2010).
[50] Robert Bensted-Smith and Hugh Kirkman, 'Comparison of approaches to management of large marine areas' (2010) Fauna & Flora International, Cambridge, UK, 8.
[51] See e.g., Mark D Spalding and others, 'Marine ecoregions of the world: a bioregionalization of coastal and shelf areas' (2007) 57 BioScience 573 and www.marineregions.org/about.php.
[52] Spalding and others, ibid, define marine ecoregions as "Areas of relatively homogeneous species composition, clearly distinct from adjacent systems. The species composition is likely to be determined by the predominance of a small number of ecosystems and/or a distinct suite of oceanographic or topographic features. The dominant biogeographic forcing agents defining the ecoregions vary from location to location but may include isolation, upwelling, nutrient inputs, freshwater influx, temperature regimes, ice regimes, exposure, sediments, currents, and bathymetric or coastal complexity." See also the work of the International Council for the Exploration of the Sea (ICES) on ecoregions: ICES 'Definition and rationale for ICES ecoregions' in Report of the ICES Advisory Committee, 2020, Section 1.4. https://doi.org/10.17895/ices.advice.6014, discussed further in Chapter Six.
[53] LMEs constitute relatively large regions of 200,000 km^2 or greater, adjacent to the continents in coastal waters where primary productivity is generally higher than in open ocean areas, the natural borders of which are based on ecological rather than political or economic criteria: bathymetry, hydrography, productivity, and trophically related populations. See further Chapter Four, Section 1(c) and David Vousden, 'Large marine ecosystems and associated new approaches to regional, transboundary and 'high seas' management', *Research Handbook on International Marine Environmental Law* (Edward Elgar Publishing 2015).
[54] Johnson and others, 'Building the regional perspective: platforms for success', 76.
[55] Bensted-Smith and Kirkman, *Comparison of approaches to management of large marine areas*, Executive Summary, ii. See Chapter Four for a detailed discussion of the ecosystem approach.

geopolitical perspective. It was therefore deemed the most practical approach grounded in existing practice.[56]

From a global governance standpoint, the main ROG mechanisms at present include the RSP, Regional Fishery Bodies (RFB)[57] and Large Marine Ecosystems (LME) mechanisms.[58] The RSP and RFBs are intergovernmental bodies made up of State parties. LME mechanisms on the other hand are usually projects which bring together coastal States of the LMEs, international agencies and regional bodies.[59] Therefore, unlike the RSP and RFBs, there is no formal membership or process to become a contracting party.[60] LMEs are considered a useful addition to the ROG landscape in terms of bringing together science and management of human activities.[61] However, LMEs have been limited by a weak governance element[62] and lack of clarity concerning management of ABNJ which may fall within an LME.[63] One study has observed that the motivating force behind the LME approach is less about biodiversity and more about sustaining productivity, especially fisheries.[64] These three approaches are complemented by other regional initiatives, such as those taken by political and economic

[56] Mahon and Fanning, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance', 2.
[57] RFBs are intergovernmental regional mechanisms, established pursuant to UNCLOS (Article 118) and UNFSA, through which States cooperate on the conservation and sustainable use of marine living resources. UNFSA (Arts. 8 – 12) spells out how States are to give effect to their duty to cooperate under UNCLOS in relation to straddling or highly migratory fish stocks via the creation of Regional Fisheries Management Organizations (RFMOs). RFBs which do not have a mandate to adopt binding measures are known as advisory RFBs. Currently there are 41 marine RFBs worldwide, comprising of 21 RFMOs and 20 advisory RFBs. See further www.fao.org/in-action/vulnerable-marine-ecosystems/background/regional-fishery-bodies/en/ and Raphaël Billé and others, *Regional oceans governance: making Regional Seas programmes, regional fishery bodies and large marine ecosystem mechanisms work better together* Regional Seas Reports and Studies No 197 (UNEP 2016), 3-4; 29-36. On RFMOs, see Rosemary Rayfuse, 'Regional fisheries management organizations' in Rothwell D and others *The Oxford handbook of the law of the sea* (2015).
[58] Rochette and others, 'Regional oceans governance mechanisms: A review', 9.
[59] Billé and others, *Regional oceans governance*, 42.
[60] Ibid.
[61] Ibid, 39-40. The goal is to allow "sound science to assist policy making within a specific geographic location for an ecosystem-based approach to management." See Kenneth Sherman and Gotthilf Hempel, 'The UNEP Large Marine Ecosystem Report: A perspective on changing conditions in LMEs of the world's Regional Seas' (2008) UNEP Regional Seas Report and Studies No 182.
[62] Ibid, 40. Bensted and Smith, *Comparison of approaches to management of large marine areas*, Executive Summary, iii.
[63] D Vousden, 'Large marine ecosystems and associated new approaches to regional, transboundary and 'high seas' management', 393.
[64] Bensted-Smith and Kirkman, *Comparison of approaches to management of large marine areas*, 11.

organizations,[65] leaders and heads of State, non-governmental organizations, coastal communities and individuals.[66] Initiatives by heads of State tend to originate among countries and jurisdictions with shared resources and concerns, and are often focused on joint management, capacity building and sustainable financing, aiming to address ocean issues holistically and in a transboundary manner.[67] A significant finding of the Mahon and Fanning global study of ROG arrangements was that the majority of regional arrangements are indigenous, developed by the countries of the region as opposed to being promoted by a global agency.[68] Given that most previous consideration of ROG has focused on the RSP and RFBs,[69] this discovery has important implications for ocean governance and will be analysed further in Chapter Seven via a case study of such an indigenous mechanism in the Eastern Tropical Pacific. Mahon and Fanning also noted that many of the indigenous arrangements are regional multipurpose organisations and associated sectoral agencies, which they argue have the potential to mainstream ocean sustainability into national economic development and the broader ocean governance field.[70] A key institutional challenge is the overlap in mandates and geographical coverage of all these different mechanisms,[71] and much ongoing research in the field of ROG deals with this question.[72]

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[65] See further Wright and others, *Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14*, 16-18 which discusses regional initiatives under the EU, the African Union (AU), Association of South-East Asian Nations (ASEAN) and the Caribbean Community (CARICOM).
[66] Johnson and others, 'Building the regional perspective: platforms for success', 75.
[67] Wright and others, *Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14*, 18.
[68] Mahon and Fanning, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance', 11.
[69] Ibid.
[70] Robin Mahon and Lucia Fanning, 'Regional ocean governance: Integrating and coordinating mechanisms for polycentric systems' (2019) 107 Marine Policy 103589, 1.
[71] Billé and others, *Regional oceans governance*, 3.
[72] E.g. Mahon and Fanning, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance'; Robin Mahon and others, 'Transboundary Waters Assessment Programme (TWAP) Assessment of Governance Arrangements for the Ocean Volume 2: Areas Beyond National Jurisdiction' (2015) 119 Intergovernmental Oceanographic Commission Technical Series; Lucia Fanning and others, 'Transboundary waters assessment Programme (TWAP) assessment of governance arrangements for the ocean, Volume 1: Transboundary large marine ecosystems' (2015) 119 IOC Tech Ser 91.

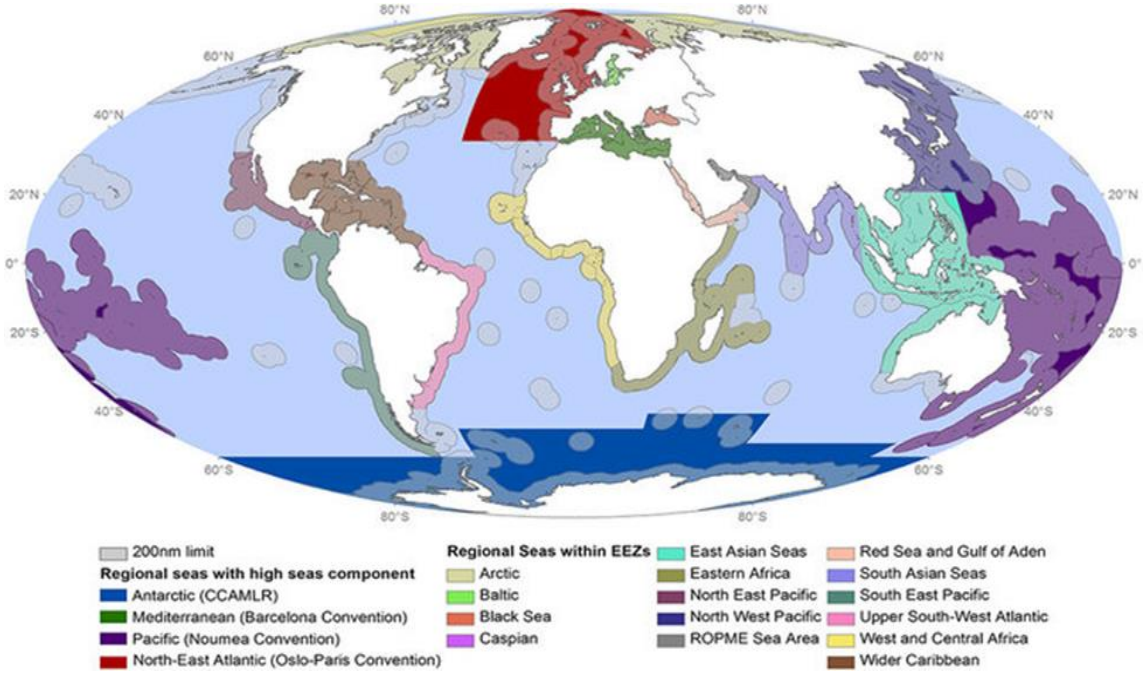
a. United Nations Regional Seas Programme

The UNEP established the RSP in 1974 to serve as the mechanism for promoting cooperation among States sharing a common regional marine space.[73] It has been credited with pioneering the regional approach to the management of the marine environment.[74] The RSP aims to address the accelerating degradation of the world's oceans and coastal areas through a 'shared seas' approach, which engages neighbouring countries in actions to protect their common marine environment.[75] The RSP covers 18 marine and coastal regions worldwide[76] with a broad mandate for environmental protection which includes the prevention and elimination of pollution and the conservation of marine biodiversity.[77] There are three different categories of RSP. 14 RSPs were established under the auspices of UNEP, with seven directly administered by UNEP,[78] while seven others, known as associated RSPs, are administered by other regional organizations.[79] Some of their regional activities are linked to the global RSP, which in turn acts as a platform for cooperation and coordination.[80] The remaining four[81] are independent which means that the regional framework is not established under UNEP. However, they are invited to participate in regional seas coordination activities of UNEP through the global meetings of the RSP and UNEP is also invited to participate in their respective meetings.[82] For each RSP, an action plan serves as the basis for regional cooperation, and many RSPs also decide to adopt legally binding instruments and framework conventions.[83] To date,

[73] Oral, 'Forty years of the UNEP Regional Seas Programme: from past to future', 339.
[74] Johnson and others, 'Building the regional perspective: platforms for success', 76.
[75] www.unenvironment.org/explore-topics/oceans-seas/what-we-do/working-regional-seas/why-does-working-regional-seas-matter
[76] Ibid.
[77] Rochette and others, 'Regional oceans governance mechanisms: A review', 10.
[78] Caribbean Region, East Asian Seas, Eastern Africa Region, Mediterranean Region, North-West Pacific Region, Western Africa Region, Caspian Sea. The Secretariat, administration of the Trust Fund and financial and administrative services are provided by UNEP. Rochette and others, 'Regional oceans governance mechanisms: A review', 10.
[79] Black Sea Region, North East Pacific Region, Red Sea and Gulf of Aden, the Regional Organization for the Protection of the Marine Environment (ROPME) Sea Area, South Asian Seas, South-East Pacific Region, Pacific Region. The financial and budgetary services are managed by the programme itself or hosting regional organisations. UNEP provides some support. Ibid.
[80] Billé and others, *Regional oceans governance*, 24.
[81] Antarctic, Artic, Baltic Sea and North East Atlantic.
[82] Rochette and others, 'Regional oceans governance mechanisms: A review', 10.
[83] Billé and others, *Regional oceans governance*, 3.

15 RSPs have a framework convention complemented by issue-specific protocols.[84] The framework conventions typically provide general terms and conditions and an overall direction for States to follow, however they are usually too vague to lead to decisive actions, and parties must therefore negotiate specific agreements in various domains.[85]

Figure 5.1 UNEP Regional Seas Programme[86]



The mandates of the different RSPs have evolved since their creation in the 1970s, which focused initially on pollution by oil, from ships and from land based sources and activities.[87] In the 1990s, the regional framework documents (the action plan and/or the framework convention) were mostly amended to integrate new principles of international law that emerged with the adoption of the CBD in 1992 and the entry into force of the UNCLOS in 1994.[88] This dynamic gradually expanded to encompass biodiversity conservation, particularly through the creation of MPAs.[89] For example, among the RSPs

[84] There are no framework conventions and protocols in the East Asian Seas, North-West Pacific and South Asian Seas regions. Billé and others, *Regional oceans governance*, 25.
[85] Ibid.
[86] Natalie C Ban and others, 'Systematic conservation planning: a better recipe for managing the high seas for biodiversity conservation and sustainable use' (2014) 7 Conservation Letters 41.
[87] Billé and others, *Regional oceans governance*, 26.
[88] Ibid, 25-26.
[89] In the Western Indian Ocean, South-East Pacific and the Caribbean. Ibid.

directly affiliated with UNEP, seven have adopted a separate protocol for protection of marine biodiversity.[90] Each of these protocols requires State parties to establish, either individually or cooperatively, protected areas to protect fragile and vulnerable ecosystems.[91] The mandates of the different RSPs have converged over time, and are now quite similar, covering the protection and management of the regional marine environment in a broad sense which includes the prevention and elimination of the pollution and the conservation of marine biodiversity.[92] This is likely due to several factors, including the influence of multilateral environmental agreements, realignment and consolidation of priorities and direction flowing from the global oversight of the UNEP via the formulation of collective Strategic Directions,[93] and the endorsement of the ecosystem approach as a common vision. UNEP has stated that all individual Conventions and Action Plans reflect a similar approach, yet each has been tailored by its own governments and institutions to suit their particular environmental challenges.[94] In some regions, the objective of achieving sustainable development within the region is also included.[95] Few regions have arrangements that pertain specifically to climate change, although many of the more recent arrangements reference climate change as a cross-cutting issue.[96] While it has been claimed that there are gaps and inconsistencies with respect to how climate change is dealt with in the RSP,[97] the strategic directions for

[90] The Caribbean, Mediterranean and Eastern Africa regions, the Red Sea and the Gulf of Aden, the Black Sea the South-East Pacific and the ROPME sea area. Cited in Oral, 'Forty years of the UNEP Regional Seas Programme: from past to future', 353.
[91] Ibid.
[92] Billé and others, *Regional oceans governance*, 27.
[93] The strategic directions provide high-level priorities for regions to take into consideration when developing strategies and workplans, aligning regional activities with ongoing global processes and encouraging consistent approaches across all regions. See further United Nations Environment Programme *Contributions of Regional Seas Conventions and Action Plans to a Healthy Ocean.* (UNEP 2022), 19 and https://www.unep.org/explore-topics/oceans-seas/what-we-do/working-regional-seas/strategy
[94] www.unenvironment.org/explore-topics/oceans-seas/what-we-do/working-regional-seas/why-does-working-regional-seas-matter
[95] E.g., in the Arctic, East Asian Seas, Mediterranean and North East Pacific. Cited in Billé and others, *Regional oceans governance*, 27.
[96] Mahon and Fanning, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance', 6.
[97] Oral, 'Forty years of the UNEP Regional Seas Programme: from past to future', 361.

the period 2022-2025 now explicitly identifies combatting climate change as a top priority goal.[98]

RSPs usually have no management or regulatory mandate in relation to fisheries, which are covered by RFBs.[99] Considerable differences exist in the geographical mandates of RFBs and they may cover both high seas areas and coastal maritime zones.[100] As with the RSP, the geographic scopes of the RFBs have been determined by a mix of scientific and political considerations and opportunistically, rather than by a systematic scheme to demarcate ocean regions.[101] While there are frequent geographical overlaps between RFBs, overlaps in their species mandates are not so frequent and special arrangements are often made to ensure complementarity and avoid actual incompatibility or conflict.[102] Regional Fishery Management Organizations (RFMOs) are a subset of RFB with a management mandate and the power to establish legally binding conservation and management measures, such as temporary closures.[103] Despite the plurality of RFBs and RFMOs, many areas of the ocean remain unregulated and many stocks and species unmanaged.[104] Notwithstanding the lack of a specific mandate regarding fisheries in the RSP, Billé and others conclude that the overall substantive mandates of the RSP and the RFBs are largely complementary, which means cooperation and coordination is key if an ecosystem approach is to be implemented (see further Section 3.a).[105] Chapter Six contains a case study analysing an example of such cooperation in the North East Atlantic between Regional Seas Programme for the North East Atlantic (OSPAR) and the North East Atlantic Fisheries Commission (NEAFC).

[98] UN Environment, *Regional Seas Strategic Directions 2022-2025* (2021), 10.
[99] With the exception of CCAMLR. See further Wright and others, *Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14*, 14.
[100] Billé and others, *Regional oceans governance*, 35.
[101] Robin M Warner, 'Conserving marine biodiversity in areas beyond national jurisdiction: co-evolution and interaction with the law of the sea' (2014) 1 Frontiers in Marine Science 6, 4.
[102] Billé and others, *Regional oceans governance*, 48-49.
[103] Ibid, 37.
[104] Rayfuse, 'Regional fisheries management organizations', 672 and Guillermo Ortuño Crespo and others, 'High-seas fish biodiversity is slipping through the governance net' (2019) 3 Nature Ecology & Evolution 1273.
[105] Billé and others, *Regional oceans governanc*, 49.

In terms of institutional structure, all RSPs have at least a Secretariat or Regional Coordinating Unit (RCU), which plays an administrative and coordination role.[106] In the case of the UNEP-administered RSPs, the Secretariat plays a more active role given there is a programmatic link.[107] Some RSPs also count on other institutional structures, mainly the protocols to the framework conventions, which aim to provide States with assistance and support for the implementation of regional legal instruments.[108] RSPs are also supported by Regional Activity Centres (RACs) which provide States with research support and technical assistance.[109] RACs carry out specialized activities of the Action Plan and report directly to the Secretariat or RCU.[110] However, for both political and funding reasons, not all RSPs have established RACs.[111] Other institutional arrangements include the establishment of Working Groups, Advisory Groups, or Specialised Committees aimed at supporting the work of the Secretariat and assisting governments in the implementation of the relevant regional instruments.[112]

Participation in the RSP has so far been restricted to the coastal States of the marine region and sometimes to regional economic groupings such as the European Union (EU).[113] Until relatively recently, RSPs focused mainly on coastal waters,[114] with success hinging on implementation by State parties in waters within their national jurisdiction.[115] Only five RSCs currently include ABNJ within their geographic mandate: the North East

[106] https://www.unep.org/explore-topics/oceans-seas/what-we-do/working-regional-seas/why-does-working-regional-seas-matter
[107] Billé and others, *Regional oceans governance: making Regional Seas programmes, regional fishery bodies and large marine ecosystem mechanisms work better together*, 27.
[108] Ibid.
[109] https://www.unep.org/explore-topics/oceans-seas/what-we-do/working-regional-seas/why-does-working-regional-seas-matter
[110] Ibid.
[111] The regions most advanced in their use of RACs are the Mediterranean and Black Sea, each with six RACs, as well as the Caribbean and the Northwest Pacific, each with four RACs. Ibid.
[112] E.g., in the Arctic, Baltic Sea, Black Sea, West, Central and Southern Africa region, etc. Ibid.
[113] The Convention on the Conservation of Antarctic Marine Living Resources (1980) 1329 UNTS 47 is however open to "any State interested in research or harvesting activities in relation to the marine living resources to which this Convention applies" (Article XXIX). This is because its mandate covers fisheries. See further Billé and others, *Regional oceans governance*, 27-8.
[114] Julien Rochette and others, 'The regional approach to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction' (2014) 49 Marine Policy 109, 110.
[115] Warner, 'Conserving marine biodiversity in areas beyond national jurisdiction: co-evolution and interaction with the law of the sea', 5.

Atlantic (OSPAR Convention),[116] Antarctica (CCAMLR Convention),[117] the Mediterranean (Barcelona Convention),[118] the South Pacific (Noumea Convention)[119] and the South East Pacific (Lima Convention).[120] The Lima Convention contains a more restricted geographic coverage of the high seas "up to a distance within which pollution of the high seas may affect that area."[121] However, it is considering possible expansion.[122] RSP parties have progressively taken a greater interest in ABNJ with several exploring options for extending their governance efforts to ABNJ, such as the Abidjan Convention[123] in the Southeast Atlantic[124] and the Nairobi Convention[125] in the Western Indian Ocean.[126] At the 1992 Earth Summit, States were called upon to consider

[116] Convention for the Protection of the Marine Environment of the North East Atlantic (1992) 2354 UNTS 67.
[117] CCAMLR (fn. 110) is an integral component of the Antarctic Treaty system, which is made up of the Antarctic Treaty itself, the Protocol on Environmental Protection to the Antarctic Treaty, CCAMLR, the Convention for the Conservation of Antarctic Seals (CCAS) and the main regulations for the Secretariat of the Antarctic Treaty. See further UNEP, 'Regional Seas programmes covering Areas Beyond National Jurisdictions', 10 and https://www.ats.aq/e/key-documents.html.
[118] Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (1995), available at www.ecolex.org (TRE-001284).
[119] Convention for the Protection of the Natural Resources and Environment of the South Pacific Region (1986), available at www.ecolex.org (TRE-000892).
[120] Convention for the Protection of the Marine Environment and Coastal Area of the South-East Pacific (1981) available at www.ecolex.org (TRE-000741).
[121] Article 1 Lima Convention, "The sphere of application of this Convention shall be the sea area and the coastal zone of the South-East Pacific within the 200-mile maritime area of sovereignty and jurisdiction of the High Contracting Parties and, beyond that area, the high seas up to a distance within which pollution of the high seas may affect that area."
[122] The Permanent Commission for the South Pacific (CPPS), the Executive Secretariat of the RSP for the South-East Pacific, adopted the Galapagos Declaration in 2012, whereby signatories committed to promoting coordinated action regarding their interests in living and non-living resources in ABNJ. Permanent Commission for the South Pacific, Commitment to Galapagos for the XXI Century, VIII Meeting of Ministers of Foreign Affairs, Puerto Ayora, Galápagos, Ecuador, 17 August 2012.
[123] Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West and Central African Region (1981), available at www.ecolex.org (TRE-000547).
[124] In 2014, parties to the Abidjan Convention adopted a decision requesting the Secretariat to "set up a working group to study all aspects of the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction within the framework of the Abidjan Convention". Decision CP11/10 Conservation and Sustainable use of the Marine Biodiversity of the Areas Located beyond National Jurisdictions, UNEP, cited in Glen Wright and others, 'The long and winding road: negotiating a treaty for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction' (2018) IDDRI Studies N 82, 28.
[125] The Nairobi Convention for the Development, Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean (2010) (Amended). Available at www.ecolex.org (TRE-157165).
[126] In 2015 parties to the Nairobi Convention adopted a decision urging States to "cooperate in improving the governance of areas beyond national jurisdiction, building on existing regional institutions including

strengthening and extending the RSP where necessary[127] and in 2016, the United Nations Environment Assembly (UNEA) adopted a resolution that encouraged parties to RSCs to consider the possibility of increasing the regional coverage of those instruments in accordance with international law.[128] However, there remains an absence of guidance in this regard. Despite these tentative steps towards expansion, significant gaps remain in geographic coverage with most RSPs not covering ABNJ and little political will to establish new organizations.[129] This may change with the adoption of a new international treaty to protect biodiversity beyond national jurisdiction (BBNJ) (see Section 4.a.ii).

i. The RSP and Marine Protected Areas

Regional arrangements in the marine environment have sometimes surpassed global protections,[130] especially in the context of pollution and MPA establishment.[131] The RSP has been especially pioneering in relation to the development of MPAs in ABNJ and networks of TBMPA across national jurisdictions and beyond. Thus far, only three RSCs have established MPAs in ABNJ.[132] The first high seas MPA established within the framework of a regional sea was created in the Mediterranean, when three States (France, Italy and Monaco) established the Pelagos Sanctuary for marine mammals in 1999.[133] It was recognised as a Specially Protected Area of Mediterranean Importance (SPAMI)

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the Nairobi Convention and developing area-based management tools such as marine spatial planning". Wright and others, 'The long and winding road', 28.

[127] UNCED, Agenda 21: Programme of Action for Sustainable Development (1992) UN Doc A/ Conf. 151/26. Agenda 17, para. 17.119(a).

[128] United Nations Environment Assembly of the United Nations Environment Programme, Second session Nairobi, 23–27 May 2016. UNEP/EA.2/Res.10, para. 13.

[129] Emily Marie Barritt and Jorge E Viñuales, 'Legal Scan: A Conservation Agenda for Biodiversity Beyond National Jurisdictions', *Cambridge Centre for Environment, Energy and Natural Resource Governance, University of Cambridge Working Paper* (2016), 54.

[130] Rochette and others, 'The regional approach to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction', 109.

[131] Robin M Warner, 'Conserving marine biodiversity in areas beyond national jurisdiction: co-evolution and interaction with the law of the sea' (2014) 1 Frontiers in Marine Science 6.

[132] Wright and others, 'The long and winding road', 26. The Lima Convention has a limited mandate in ABNJ as described in the previous section. Article 14 of the Noumea Convention contains an express legal basis to establish protected areas and State Parties are provided with a mandate to regulate or prohibit adverse human activities. However, no MPA has been established under this regional framework to date. See further Rochette and others, 'The regional approach to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction', 112 and Yoshifumi Tanaka, *A dual approach to ocean governance: the cases of zonal and integrated management in international law of the sea* (Routledge 2008), 202-203.

[133] David Freestone, 'The Limits of Sectoral and Regional Efforts to Designate High Seas Marine Protected Areas' (2018) 112 AJIL Unbound 129, 131.

under the Barcelona Convention in 2001.[134] It was the world's first MPA formally established in the high seas and has a transboundary character encompassing the jurisdictions of France, Italy and Monaco, however, jurisdictional extensions by the relevant State parties means that the Sanctuary no longer contains a high seas element.[135] As regards fisheries, regulation falls under the competence of the General Fisheries Commission for the Mediterranean and Black Sea (GFCM), therefore there is a need for coordination between the two bodies.[136] In the Southern Ocean, the parties to the CCAMLR Convention have to date established two huge MPAs. In 2009, the South Orkney Islands MPA was established,[137] the first MPA in the world located entirely in the high seas,[138] and in 2017, the world's largest MPA was created in the Ross Sea.[139] Parties to the Antarctic Treaty[140] can only designate protected areas in consultation with the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) as the relevant RFMO in the region and vice versa.[141] In 2010, parties to the OSPAR Convention established six MPAs in ABNJ,[142] followed by a seventh in 2012.[143] By the end of 2020, the OSPAR Network of MPAs included over 542 MPAs in national waters

[134] UNEP, 'Regional Seas programmes covering Areas Beyond National Jurisdictions' (2017) Regional Seas Reports and Studies No 202, United Nations Environment Programme, 117. Once a marine area is recognised as a SPAMI, all the Contracting Parties must "comply with the measures applicable to the SPAMIs and not to authorise nor undertake any activities that might be contrary to the objectives for which the SPAMIs were established." Articles 8-3 of the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (1995) (SPA/BD Protocol), available on www.ecolex.org (TRE-001220).

[135] See further Chapter Four and Guiseppe Notarbartolo di Sciara and Tundi Agardy, 'Building on the Pelagos Sanctuary for Mediterranean marine mammals' in Mackelworth, P, *Marine Transboundary Conservation and Protected Areas* (Routledge 2016).

[136] See further Rochette and others, 'The regional approach to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction', 113. The MoU between the Barcelona Convention and FAO-GFCM (2012) includes collaboration on criteria to identify MPAs. See further James Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, 281-286.

[137] Conservation Measure 91-03 (2009) Protection of the South Orkney Islands Southern Shelf MPA, adopted at CCAMLR meeting XXVIII.

[138] Yoshifumi Tanaka, *The International Law of the Sea* (3 edn, Cambridge University Press 2019), 425.

[139] Conservation Measure 91-05 (2016) Ross Sea region Marine Protected Area. Adopted at CCAMLR meeting XXXV. Parties have not been able to reach agreement on proposals to establish further MPAs in the region. https://www.science.org/content/article/once-again-new-antarctic-reserves-fail-win-backing.

[140] The Antarctic Treaty (1959) 402 UNTS 71. https://www.ats.aq/e/environmental.html

[141] See further Harrison, *Saving the oceans through law: the international legal framework for the protection of the marine environment*, (First edn, Oxford University Press 2017) 281-286.

[142] OSPAR Decisions 2010/1, 2010/02, 2010/3, 2010/04, 2010/05 and 2010/6.

[143] OSPAR Decision 2012/1 on the establishment of the Charlie-Gibbs North High Seas Marine Protected Area.

and 10 MPAs situated in areas beyond the limits of national EEZs.[144] OSPAR also cooperates with fishing authorities and other international organizations which have a mandate over activities which fall outside of its scope (see Chapter Six for a detailed discussion).

Freestone has observed that while these initial high seas MPA initiatives are extremely important, they are limited by the fact that they are only binding on the restricted number of parties to the treaties that establish them.[145] They are not binding on third States or bodies unless on a voluntary basis.[146] They also only apply to a limited number of human activities. For example, fishing, mining and shipping are specifically excluded from the mandate of OSPAR.[147] Therefore it is essential for OSPAR to work with other international organizations that have a legal competence over these activities within its regulatory area. It follows that marine conservation efforts are unfortunately often hindered by the difficulties faced in addressing such complex multiple use issues in an area.[148] While RSPs may appear to be multi-sectoral in principle, the fact that they do not have a regulatory mandate over key economic sectors such as fisheries, shipping and offshore exploitation of non-living marine resources would indicate otherwise.[149]

ii. Effectiveness of the RSP

Rochette and others have identified several factors which limit the effectiveness of the RSP more generally, including limited mandates, lack of interaction with socio-economic sectors such as fisheries, lack of resources, and poor implementation due to lack of political will, political instability or weak enforcement mechanisms. [150] UNEP has specifically cited the "the lack of necessary interaction with the fisheries sector and other socioeconomic sectors" as one of the "most fundamental problems hampering the

[144] OSPAR Commission, *Status of the OSPAR Network of Marine Protected Areas in 2020,* 1.
[145] Freestone, 'The Limits of Sectoral and Regional Efforts to Designate High Seas Marine Protected Areas', 132.
[146] Wright and others, 'The long and winding road', 33; Nele Matz-Lück and Johannes Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?' (2014) 49 Marine Policy 155, 157.
[147] Article 4, Annex V OSPAR Convention. See further Chapter Six.
[148] B. C. O'Leary and others, 'The first network of marine protected areas (MPAs) in the high seas: The process, the challenges and where next' (2012) 36 Marine Policy 598, 600.
[149] Rochette and others, 'Regional oceans governance mechanisms: A review', 14.
[150] Ibid, 13.

implementation of the RSP."[151] For example, as stated above and explored further in Chapter Six, high impact sectors such as fishing, mining and shipping are specifically excluded from the mandate of OSPAR. The OSPAR framework also does not deal with enforcement, either with respect to third States or contracting parties.[152] Most RSCs are not binding on third States or bodies unless on a voluntary basis.[153] A 2015 study of the UNEP RSPs highlighted an uneven landscape of governance structures, including some without a framework convention and little consistency among the activities regulated and the substantive content of those with a convention.[154] In relation to compliance, glaring gaps were found between programmes, with only the Mediterranean RSP having adopted a formal compliance mechanism and committee.[155]

In practice, State parties have appeared reluctant to address implementation measures with consequences for jurisdiction and control.[156] Billé and others have concluded that the implementation of regional agreements remains far from systematic and comprehensive.[157] This can be due to a number of factors. Overall, weak implementation has been attributed to a lack of investment, both financial and human, in the institutional architecture of the RSP, which has hampered higher level strategic and political work as well as the provision of technical and legal assistance.[158] The institutional frameworks of the RSP have been critiqued for not receiving adequate funding from State parties. Most have not been updated since they were created and financial and human resources remain limited,[159] illustrating that while States consider the RSP to have a useful function worth

[151] The First Inter-Regional Programme Consultation held in The Hague, 24-26 June 1998. Cited in Billé and others, *Regional oceans governance: making Regional Seas programmes, regional fishery bodies and large marine ecosystem mechanisms work better together*, 52.
[152] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 161.
[153] Ibid, 157.
[154] Oral, 'Forty years of the UNEP Regional Seas Programme: from past to future', 361. The Northwest Pacific, South-East Asian Seas and the East Asian Seas do not have a framework convention. See Sands and others, *Principles of international environmental law*, 465.
[155] Oral, 'Forty years of the UNEP Regional Seas Programme: from past to future', 362.
[156] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 163.
[157] Billé and others, *Regional oceans governance*, 52. The authors cite the disconnect between the persistence of pollution versus the number of regional agreements aimed at preventing pollution as a glaring example.
[158] Ibid, 54.
[159] Rochette and others, 'Regional oceans governance mechanisms: A review', 13.

sustaining, it is not considered a priority for substantial investment.[160] In developing countries, governments may not have the capacity or the means to implement strong environmental policies while in States with stronger governance ability, lack of coordination and even conflicting sectoral policies are common obstacles to implementation. [161] Finally, national capacities have not always been fully utilised by regional bodies.[162]

Despite the above shortcomings, there is general agreement that the regional approach plays an essential linking role between the global and national or local level of governance,[163] as well as promoting harmonization among coastal States sharing a common interest in a marine space.[164] Several important enabling conditions have been identified which have allowed some regions to make noteworthy progress despite the presence of challenges. These include robust legal and policy frameworks, a history of active State engagement in ocean management and regional processes, long-term political and institutional stability, the presence or absence of pervasive territorial or maritime disputes, the nature and extent of sea-based activities, stakeholder engagement processes, clear economic and/or environmental imperatives for improving cooperation, and the availability of financing and resources.[165] Several of these enabling factors are visible in the North East Atlantic (see Chapter Six, Section 5(b)).

The EU's International Ocean Governance (IOG) Forum considers that regional governance arrangements have the potential to fill some of the gaps created by the current fragmented international ocean governance framework by facilitating an integrated implementation of the ocean related Sustainable Development Goals (SDGs) via the creation of joint baselines and working with regionally-specific and integrated targets and

[160] Bensted-Smith and Kirkman, *Comparison of approaches to management of large marine areas*, Executive Summary, iv.
[161] Billé and others, *Regional oceans governance*, 54-55.
[162] Ibid, 55.
[163] Rochette and others, 'The regional approach to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction', 109.
[164] Oral, 'Forty years of the UNEP Regional Seas Programme: from past to future', 361.
[165] Wright and others, 'Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14', 5-6 and Rothwell and others, *The Oxford handbook of the law of the sea*, 904.

indicators.[166] The RSP, in particular, has been praised for the provision of valuable regional frameworks for: "assessing the state of the marine environment, addressing key developments (e.g. socio-economic activities, coastal settlements, land-based activities) that interact with the marine environment; and agreeing on appropriate responses in terms of strategies, policies, management tools, and protocols," which provide a useful baseline for tracking progress against globally agreed goals and targets, such as MPA coverage.[167]

4. Regional Ocean Governance and the Ecosystem Approach.

As pointed out in Chapter Four, transboundary integration across ecosystem boundaries is a key aspect of the ecosystem approach, which requires, at the same time, a harmonized approach to governance.[168] It has often been claimed that ROG is a governance model most consistent with an ecosystem approach given that it has a geographical rather than sectoral scope.[169] While, as previously noted, the geographical scope of the RSPs and RFBs were in fact initially determined by political opportunity rather than any systematic scheme to encompass all oceanic regions of the world,[170] concrete efforts have since been made to incorporate the ecosystem approach into ROG mechanisms. For example, since 2004, the RSP has made efforts to develop Strategic Directions with a common vision that recognizes the value of an ecosystem approach and most RSCs have now embraced the ecosystem approach.[171] In 2016, the United Nations Environment Assembly (UNEA) reiterated the important role of the RSCs and their Action Plans in providing cross sectoral

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[166] Sebastian Unger, Barbara Neumann and Ben Boteler, Improving the International Ocean Governance Framework, Discussion paper for Thematic Working Group 1, EU International Ocean Governance Forum, April 2020, 3 citing Institute for Advanced Sustainability Studies, Institute for Sustainable Development and International Relations & TMG – Think Tank for Sustainability (2020) *Marine Regions Forum 2019: Achieving a healthy ocean – regional ocean governance beyond 2020.* Conference Report, Marine Regions Forum 2019, 30 September – 2 October 2019, Berlin.

[167] Johnson and others, 'Building the regional perspective: platforms for success', 76-77.

[168] Louise M. Lieberknecht, *Ecosystem-Based Integrated Ocean Management: A Framework for Sustainable Ocean Economy Development*. A report for WWF-Norway by GRID-Arendal (2020), 22.

[169] Barritt and Viñuales, 'Legal Scan: A Conservation Agenda for Biodiversity Beyond National Jurisdictions', 53.

[170] Warner, 'Conserving marine biodiversity in areas beyond national jurisdiction: co-evolution and interaction with the law of the sea', 4.

[171] David E Johnson, Maria Adelaide Ferreira and Christopher Barrio Froján, 'Regional Seas Biodiversity under the post-2020 Global Biodiversity Framework' (UNEP 2021), 37-38. See also discussion in Chapter Four, Section 1.b.

and transboundary collaborative frameworks for the ecosystem approach in the marine environment.[172]

Ways in which the RSP could be said to have applied the ecosystem approach include creating a forum for stakeholder engagement and inter-sectoral cooperation, supporting management actions at the appropriate scale, considering the effects of activities on other ecosystems via transboundary cooperation and recognition of the spatial scale of ecosystems (see Figure 4.1 Malawi Principles, Chapter Four). A notable and practical way in which the RSP has contributed to the achievement of an ecosystem approach, is through the development of common methodologies for assessing the state of the marine environment at a bio-regional scale. In 2014, the Regional Seas Indicators Working Group was established, which adopted 22 core indicators which were mapped against the objectives under each of the Regional Seas policy frameworks, as well as against the SDGs and the Aichi Biodiversity Targets in order to facilitate reporting requirements under different but overlapping global instruments.[173]

The cooperation and coordination strengths of ROG are seen as a particular advantage when it comes to implementing the ecosystem approach. Gjerde and Wright consider the regional level an important vehicle for advancing the ecosystem approach through the creation of "context-specific platforms through which States, stakeholders and competent regional and global management organisations can communicate, coordinate and collaborate."[174] As explained in the previous chapter, inter-sectoral cooperation is recommended by the CBD as a means to apply the Malawi principles, with increased procedural cooperation and linkages between the various existing ocean regulatory regimes proposed as a means to accelerate implementation of the ecosystem approach.[175]

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[172] United Nations Environment Assembly of the United Nations Environment Programme, UNEP/EA.2/Res.10 (2016). Cited in Johnson, Ferreira and Froján, ibid, 38.

[173] United Nations Environment Programme, *Contributions of Regional Seas Conventions and Action Plans to a Healthy Ocean*, 21.

[174] Kristina M Gjerde and Glen Wright, 'Towards Ecosystem-based Management of the Global Ocean: Strength-ening Regional Cooperation through a New Agreement for the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction' (2019) STRONG High Seas Project, 18.

[175] Elizabeth A Kirk, 'Maritime zones and the ecosystem approach: A mismatch' (1999) 8 RECIEL 67, 69-70; Yoshifumi Tanaka, 'Zonal and Integrated Management Approaches to Ocean Governance: Reflections on a Dual Approach in International Law of the Sea' (2004) 19 The International Journal of Marine and Coastal Law 483, 505-506.

OSPAR has explicitly stated that the aim of its institutional cooperation is to help it deliver an ecosystem approach to the management of human activities in the marine environment (see further Chapter Six).[176] However, a recent study by Mahon and Fanning found that while most regions had some form of coordination mechanism or were attempting to develop them,[177] few were well developed enough to provide the level of integration needed for ecosystem-based management.[178] The authors found that integrated policies are the most difficult type to develop and implement given the multiple levels, actors and jurisdictions involved.[179] For this reason, as of yet there are still very few regions where efforts to establish integration mechanisms have progressed far enough to be evaluated.[180] The following sections will discuss the cooperation and coordination strengths and weaknesses of ROG in more detail.

a. Intra and inter-regional cooperation and coordination

The regional approach has been commended for making cooperation easier and faster than a global one, where more diverse stakeholders with more contrasting interests make negotiations more challenging and protracted.[181] However, when it comes to inter-regional cooperation this has proven more challenging to facilitate[182] and research has demonstrated that the existing level of cooperation and coordination between the different ROG organizations varies widely.[183] A 2017 study by Wright and others claimed that opportunities for region-to-region exchanges remain largely absent from global governance processes.[184] However, it is increasingly becoming a necessity. For example, given that no regional organisation has a mandate covering the entire set of ocean-related SDG targets, cooperation and coordination across sectors and among competent regional

[176] https://www.ospar.org/about/international-cooperation/collective-arrangement+
[177] Mahon and Fanning, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance', 11 referencing the findings of companion paper Mahon and Fanning, 'Regional ocean governance: Integrating and coordinating mechanisms for polycentric systems', 4-6.
[178] Mahon and Fanning, 'Regional ocean governance: Integrating and coordinating mechanisms for polycentric systems', 4-5.
[179] Ibid, 6-7.
[180] Ibid, 7.
[181] Billé and others, *Regional oceans governance*, 51.
[182] Barritt and Viñuales, 'Legal Scan: A Conservation Agenda for Biodiversity Beyond National Jurisdictions', 54.
[183] Rochette and others, 'Regional oceans governance mechanisms: A review', 16.
[184] Wright and others, 'Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14', 6.

organisations is crucial.[185] There may be opportunities to create improved mechanisms for coordination between regions within the post-2020 global biodiversity framework (GBF) and the new BBNJ treaty, whose national implementation is likely to be supported on a regional as well as global scale (see Sections 3.b.i and ii below).[186]

Despite a history of long standing tensions,[187] cooperation and coordination between the RSP and the RFBs has been encouraged by UNEP[188] and the Food and Agriculture Organization of the United Nations (FAO) and "reflects the growing nexus between fisheries and environmental management."[189] RSCs and individual action plans can serve to strengthen capacities at the regional and national levels as they pursue common objectives across conservation and fisheries management.[190] This may include intra- and inter-regional cooperation for the establishment of MPA networks or strengthening the formal relationships and collaboration with RFMOs.[191] Several RSPs and RFBs have formalized their cooperation by means of Memoranda of Understanding (MoUs),[192] have standing agenda-items on cooperation, accord each other observer status and send designated representatives to each other's meetings.[193] It could be argued that these are examples of institutional convergence. Despite some progress, recent studies have acknowledged that better integration is needed between RSC Action Plans and RFBs.[194] FAO has also highlighted serious governance challenges with RFBs, including

[185] Ibid.
[186] https://www.unep.org/explore-topics/oceans-seas/what-we-do/working-regional-seas/why-does-working-regional-seas-matter
[187] Wright and others, 'Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14', 14.
[188] For example, via the UNEP Global Strategic Directions for the RSP. See further UN Environment, *Regional Seas Strategic Directions 2022-2025* (2021).
[189] Billé and others, *Regional oceans governance*, 44 citing UNEP *Ecosystem-based management of fisheries: Opportunities and challenges for coordination between marine Regional Fishery Bodies and Regional Seas Conventions.* Regional Seas Reports and Studies N°175 (UNEP 2001)
[190] Johnson and others, 'Building the regional perspective: platforms for success', 77.
[191] Ibid.
[192] E.g., OSPAR and NEAFC. See further Chapter Six.
[193] Billé and others, *Regional oceans governance*, 45.
[194] Johnson, Ferreira and Froján, 'Regional Seas Biodiversity under the post-2020 Global Biodiversity Framework', 6.

insufficient levels of cooperation with other international organizations and other RFBs and poor relationships with non-contracting parties.[195]

Coordination and cooperation between RSPs can happen formally and informally. For example, MoUs have been concluded between OSPAR and the Secretariat of the Cartagena Convention[196] and the Abidjan Convention,[197] designed to foster information exchange and cooperation on issues of mutual interest. On a more informal level, experiences between the RSP are sometimes exchanged through the participation of staff members from one programme in meetings of another programme.[198] The OSPAR Commission and the Baltic Marine Environment Commission (HELCOM)[199] have also indicated that they plan collaborate in relation to the development a common understanding of other effective area based management tools (OECMs) in their maritime regions.[200] Such cooperation is vital given the lack of any explicit guidance in either Convention and the overlap of contracting parties between OSPAR[201] and HELCOM.[202]

b. Global-regional-national cooperation and coordination

There is an increasing focus on the ability of ROG to deliver the global oceans agenda and respond to emerging issues.[203] The fact that the RSP is embedded in the UNEP structure naturally provides it with a useful global context. The overall strategy of the RSP is defined by the UNEP governing body; yet the different RSCs and action plans

[195] FAO, Performance reviews by regional fisheries bodies: introduction, summaries, synthesis and best practices. Volume I: CCAMLR, CCSBT, ICCAT, IOTC, NAFO, NASCO, 116 NEAFC. FAO Fisheries and Aquaculture Circular No. 1072, FIPI/C1072 (2012). Available at http://www.fao.org/docrep/015/i2637e/i2637e00.pdf. Accessed 17 September 2022. Cited in Billé and others, *Regional oceans governance*, 1.
[196] Memorandum of Understanding between the Secretariat of the OSPAR Commission for the Protection of the marine environment of the North East Atlantic and the Cartagena Convention Secretariat, OSPAR Agreement 2021-03.
[197] Memorandum of Understanding between the Secretariat of the OSPAR Commission for the Protection of the marine environment of the North East Atlantic and the Secretariat of the Abidjan Convention, OSPAR Agreement 2013-12.
[198] Billé and others, *Regional oceans governance*, 43.
[199] https://helcom.fi/. HELCOM implements the Regional Seas Convention on the Protection of the Marine Environment of the Baltic Sea Area (1992) 1507 UNTS 167, known as the Helsinki Convention.
[200] Comments made at United Nations Ocean Conference 2022, Side Event on *Delivering global commitments in the Baltic Sea region,* 30 June 2022. https://www.un.org/en/conferences/ocean2022/events/side
[201] See list of contracting parties at https://www.ospar.org/
[202] See list of contracting parties at https://helcom.fi/about-us/
[203] United Nations Environment Programme, *UNEP Medium Term Strategy 2018-2021* (2016), 16.

continue to be shaped according to the needs and priorities of specific regions which are identified and decided by the relevant participating national governments.[204] This is supportive of the Malawi principles which recommends that management be decentralized to the lowest appropriate level (Figure 4.1, Chapter Four). The UNEP helps to provide a framework for coordination and institutional support to the RSP which includes programmatic support and assistance with the implementation of the conventions and action plans of the UNEP-administered programmes.[205] Additionally, global meetings of the RSP are regularly organised, giving the opportunity for the regions to share their experiences and adopt global Strategic Directions.[206] This 'global-regional-national' structure can be viewed as an advantage in that it enables regions to insert themselves more easily into the global ocean governance structure, and thus better respond to needs emanating from the global level while at the same time maintaining their regional specificities.[207]

In light of the primacy accorded by the UNCLOS to certain global bodies, for example, the International Maritime Organization (IMO) and the International Seabed Authority (ISA), ROG mechanisms that wish to pursue the ecosystem approach within their geographical areas are required to cooperate and coordinate with these global bodies.[208] While implementation at the regional level is not a formal requirement for global entities such as the IMO and ISA, it still provides a useful tool for parties to come together to streamline and harmonise issues.[209] Furthermore, coordination between legal regimes at the regional and global level is necessary, not only for geographical reasons, overlapping mandates and the interconnectedness of the ocean, but also due to the fact that even when regional in nature, marine regulatory regimes tend to deal with only some of the pressing

[204] Billé and others, *Regional oceans governance*, 27.
[205] Ibid, 43.
[206] https://www.unep.org/explore-topics/oceans-seas/what-we-do/working-regional-seas/strategy
[207] Billé and others, *Regional oceans governance*, 27.
[208] Ibid, 48. See for example, the MoUs agreed between OSPAR-IMO and OSPAR-ISA as well as the Collective Arrangement agreed between competent authorities for the management of MPAs in ABNJ within OSPAR. This will be discussed further in Chapter Six.
[209] Johnson, Ferreira and Froján, 'Regional Seas Biodiversity under the post-2020 Global Biodiversity Framework' 6.

issues relevant to the application of the ecosystem approach.[210] As stated earlier, most RSCs only apply to a limited number of human activities and are not binding on third parties, thus rendering implementation of the ecosystem approach challenging without cooperation. Given that a wide range of human activities in the ocean are being managed by different organizations with different responsibilities, cooperation is essential to ensure cohesion. A key challenge to cooperation and coordination between existing ROG mechanisms has been the fact that they were conceived and designed successively and independently of each other, not as a suite of complementary tools.[211] The documented efforts and ambition for increased cooperation occurring at the regional level could be said to be indicative of a process of convergence occurring amongst different regimes, which is being driven by the common purpose of implementing an ecosystem approach to marine management. Therefore, it could be argued that implementation of the ecosystem approach is in itself a driver of convergence between different regimes.

Another problem identified by UNEP has been at the national level, where coordination between the different sectors dealing with fisheries and environmental protection has failed to materialize and, in some instances, actively work against each other.[212] There have been calls for better national coordination between respective Ministries.[213] Perhaps for such reasons, there has been strong advocacy for the need for global oversight and support in order to assist effective regional cooperation across jurisdictions and sectors.[214] Otherwise, as Gjerde and Wright warn there is a danger that sectoral priorities may dominate over finding a way to effectively incorporate biodiversity considerations.[215] Improved mechanisms for "inter-regional" and "region-to-global" cooperation have been suggested, which would gather different regional organisations and further involve

[210] David Langlet and Rosemary Rayfuse, 'The Ecosystem Approach in Ocean Planning and Governance: An Introduction' in Langlet D and Rayfuse R (eds.) *The Ecosystem Approach in Ocean Planning and Governance* (Brill Nijhoff 2018), 453.
[211] Billé and others, *Regional oceans governance*, 60.
[212] Ibid citing UNEP, *Ecosystem-based management of fisheries.*
[213] Johnson, Ferreira and Froján, 'Regional Seas Biodiversity under the post-2020 Global Biodiversity Framework', 6.
[214] E.g., Gjerde and Wright, 'Towards Ecosystem-based Management of the Global Ocean: Strength-ening Regional Cooperation through a New Agreement for the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction', 18.
[215] Ibid.

stakeholders, NGOs, and scientists in regional discussions.[216] However it still remains to be seen how this would function in practice.

i. ROG and the post-2020 Global Biodiversity Framework

According to a recent study, obligations to implement the post 2020 GBF present an opportunity to strengthen regional partnerships and bridge national and global scales.[217] The potential contribution of the RSP to the post 2020 GBF, as well as compatibility and opportunities for convergence between these regimes has been the subject of initial research.[218] While ocean elements do not feature heavily in the current draft of the post-2020 GBF text, MPAs are likely to be a key feature of new global targets.[219] Therefore, given the above-described experience and successes of the RSP in relation to establishment of MPAs and marine environmental protection more generally, RSCs and their action plans are in a unique position to support States in achieving ocean related goals under the new GBF as well as other international goals such as the SDGs (see Chapter Two).[220] According to the authors of the above-mentioned study, "no-one else is in a position to provide coordination and cooperation at the regional scale, associated with reducing threats and taking into account the transboundary commitments of Ecosystem-Based Management".[221] However at present, the CBD reporting system does not contain a regional dimension and therefore when States submit their national reports directly to the CBD it does not contain a regional perspective.[222] It has been argued that including a regional dimension in the post 2020 GBF would empower the role of ROG organizations

[216] Wright and others, 'Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14', 6.
[217] Johnson, Ferreira and Froján, 'Regional Seas Biodiversity under the post-2020 Global Biodiversity Framework', 6.
[218] Ibid.
[219] See First Draft of the post 2020 global biodiversity framework, Target 3, CBD/WG2020/3/3, 5 July 2021, available at https://www.cbd.int/conferences/post2020/wg2020-03/documents. The text is likely to be finalized at COP 15 taking place from 7-15 December in Montreal, Canada. http://sdg.iisd.org/events/un-biodiversity-conference-cbd-cop-15-part-2/
[220] For more on how the RSP contributes to the SDGs, see the recent report, United Nations Environment Programme *Contributions of Regional Seas Conventions and Action Plans to a Healthy Ocean*. (UNEP 2022).
[221] Johnson, Ferreira and Froján, 'Regional Seas Biodiversity under the post-2020 Global Biodiversity Framework', 4.
[222] Ibid, 6.

to gather data for the purposes of CBD targets, thus leading to a greater alignment between the global and regional level.[223]

ii. The impact of the BBNJ treaty on ROG

Rothwell and Stephens have observed that the need to address threats to ABNJ poses a significant challenge to regional cooperation and will require greater commitment from States and regional organizations.[224]As mentioned in Section 3(a), some steps have been taken towards expansion of regional coverage by RSCs in ABNJ and many argue for the regional level to play more of a role in this regard.[225] However, it is still unclear what precise role ROG mechanisms will play in a new BBNJ treaty. Given that many activities in ABNJ are currently regulated at the sectoral and regional level, a key sticking point in negotiations has been how the institutional arrangements of the new internationally legally binding instrument (ILBI)[226] will interact with these existing frameworks. In this regard the General Assembly instructed the conference at the outset of negotiations that the new instrument "should not undermine existing relevant legal instruments and frameworks and relevant global, regional and sectoral bodies".[227] There remains significant ambiguity around the term 'should not undermine' and various interpretations exist.[228] It is arguable that such flexible language was deliberately chosen in order to justify different approaches to the institutional structure of the ILBI.[229] The Prep Comm report 2017 stated that the ILBI would "promote greater coherence with and complement

[223] Ibid.
[224] Donald Rothwell and others, *The Oxford handbook of the law of the sea* (First edn, Oxford University Press 2015), 903.
[225] Mahon and Fanning, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance', 2.
[226] UN General Assembly Resolution on an International legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, A/RES/72/249, 24 December 2017. See further Chapter Three.
[227] Ibid, para.7.
[228] Zoe Scanlon, 'The art of "not undermining": possibilities within existing architecture to improve environmental protections in areas beyond national jurisdiction' (2017) 75 ICES Journal of Marine Science 405, 405-409.
[229] Alex G. Oude Elferink, 'Exploring the future of the institutional landscape of the oceans beyond national jurisdiction' (2019) Review of European, Comparative & International Environmental Law, 4.

existing relevant legal instruments and frameworks and relevant global regional and sectoral bodies".[230]

In the case of ABMTs and MPAs, reports have suggested that the reference to 'should not undermine' is actively being used in support of existing mechanisms and a regional approach, while resisting calls for a strong overarching global body.[231] This may be explained by the fact that, in the case of ABMTs, existing interests in ABNJ are already quite entrenched within existing institutions.[232] At the third BBNJ Intergovernmental Conference (IGC-3), opinions remained divided on a number of issues concerning ABMTs and MPAs, in particular determining the role of relevant global, regional, and sectoral bodies, whether different processes for MPAs should be distinguished from those of ABMTs and provisions around implementation, and monitoring and review.[233]

While "entrenched positions softened" and progress was made at the fourth intergovernmental conference (IGC-4) on some aspects of governance of MPAs, it is still not clear how existing ROG mechanisms, with authority to establish ABMTs and MPAs, would interact with a global overarching body, such as a Conference of Parties (COP).[234] Thus far, institutional discussions in the context of ABMTs and MPAs have identified a 'spectrum of options' encompassing global, hybrid, and regional proposals.[235] Those advocating a global approach would like to see the creation of a global body with the power to make legally binding decisions, including with respect to the establishment of

[230] Report of the Preparatory Committee established by the General Assembly resolution 69/292: Development of an International Legally Binding Instrument under the United Nations Convention on the Law of the Sea on Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction (advance, unedited version). 2017, 8.
[231] Oude Elferink, 'Exploring the future of the institutional landscape of the oceans beyond national jurisdiction', 4.
[232] Ibid.
[233] IISD, 'Summary of the Third Session of the Intergovernmental Conference on the Conservation and Sustainable Use of Marine Biodiversity of Areas Beyond National Jurisdiction: 19-30 August 2019', (2019) 25 Earth Negotiations Bulletin 218, 1.
[234] IISD, 'Summary of the Fourth Session of the Intergovernmental Conference on an International Legally Binding Instrument under the UN Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biodiversity of Areas Beyond National Jurisdiction: 7-18 March 2022', (2022) 25 Earth Negotiations Bulletin 225, 1-2; 21.
[235] Elisa Morgera and others, 'Summary of the First Session of the Intergovernmental Conference on an International Legally Binding Instrument under the UN Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biodiversity of Areas Beyond National Jurisdiction: 4–17 September 2018' (2018) 25 Earth Negotiations Bulletin 1, 16.

MPAs, which would coordinate existing sectoral and regional bodies and fill gaps.[236] It looks increasingly likely that there will be a COP with global authority.[237] The current draft text also contains a reference to a Scientific and Technical Body, which would operate under a COP,[238] and may "draw on appropriate advice from relevant legal instruments and frameworks and relevant global, regional, subregional and sectoral bodies […]."[239] It is likely that this body will have a key role to play in relation to the development of criteria for the identification of MPAs[240] and review of MPA proposals submitted by parties under a new treaty.[241]

Others have argued that regional bodies are already well placed to create and manage ABMTs and therefore efforts should be focused on strengthening their efforts and coordination among them.[242] Proponents of this approach argue that a global body should be limited to standard setting only.[243] However, the issue with this approach is that not all regions have competent, if any ROG mechanisms, thus leaving gaps in coverage. Also, many existing regional organizations lack a global focus on marine biodiversity, which the new treaty could provide.[244] Furthermore, MPAs designated solely at the regional level are unlikely to be recognized by third States or organizations outside the region.[245] A lack of global oversight is also likely to lead to inconsistent progress at the regional level[246] and unlikely to provide the representative, ecologically connected network of MPAs across national waters and ABNJ that is required by global targets.

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[236] Ibid. See Draft Article 19 Further revised draft text, 30 May 2022. Options I and II reflect different iterations of an overarching global approach.
[237] See Draft Article 48 Conference of the Parties, *Further revised draft text.*
[238] Draft Article 49(4) Scientific and Technical Body, ibid.
[239] Draft Article 49 (3), ibid.
[240] Draft Article 17bis (2), ibid.
[241] Draft Article 18(2), ibid.
[242] Morgera and others, *Summary of First Session of the Intergovernmental Conference on an International Legally Binding Instrument,* 16.
[243] Oude Elferink, 'Exploring the future of the institutional landscape of the oceans beyond national jurisdiction', 3.
[244] Kristina M Gjerde, Harriet Harden-Davies and Kahlil Hassanali, *High seas treaty within reach* (2022) 377 Science 6612, 1241.
[245] Kristina M. Gjerde and Anna Rulska-Domino, 'Marine Protected Areas beyond National Jurisdiction: Some Practical Perspectives for Moving Ahead' (2012) 27 The International Journal of Marine and Coastal Law 351, 369.
[246] Ibid.

A hybrid approach would seek to share competences between existing bodies and a new global body and was proposed at IGC-4 as a means to bridge the gap between the above binary options.[247] Progress was made at the fifth intergovernmental conference (IGC-5)[248] in many areas. For example, key principles and approaches which would advance ecosystem based management were accepted,[249] it was agreed to give the COP a mandate to adopt measures, formally recognise measures adopted under other frameworks (which would extend their applicability to BBNJ parties) and make recommendations to existing bodies or members thereof.[250] However, not much advancement was made on resolving the question of the relationship to existing regional bodies, which observers have said remains one of the most controversial issues.[251]

The shortcomings regarding inter-sectoral cooperation and coordination have been recognised within the BBNJ process and there are attempts to address it. It is generally agreed that effective cooperation is most efficiently facilitated by a secretariat with the support of a COP.[252] With regard to MPAs, draft Article 14(a) aims to "enhance cooperation and coordination" in the use of ABMTS and MPAs, "among States, relevant legal instruments and frameworks and relevant global, regional, subregional and sectoral bodies, which will also promote a holistic and cross-sectoral approach to the conservation and sustainable use of marine biological diversity" in ABNJ."[253] The IUCN has suggested that this article could be improved by specifying a goal for such cooperation which would take into account ecological connectivity needs.[254] Furthermore, it notes that cooperation is requires at all stages of MPA design, designation, management, monitoring and

[247] IISD, *Summary of the Fourth Session of the Intergovernmental Conference on an International Legally Binding Instrument*, 20.
[248] Held from 15-26 August 2022. See https://www.un.org/bbnj/.
[249] Gjerde, Harden-Davies and Hassanali, *High seas treaty within reach*, 1241.
[250] IDDRI, 'Bringing the ship to shore: Significant progress towards a high seas biodiversity treaty', Blog Post on IGC-5 outcomes, 2 September 2022. See https://www.iddri.org/en/publications-and-events/blog-post/bringing-ship-shore-significant-progress-towards-high-seas
[251] Ibid.
[252] IUCN Commentary on the further revised draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (A/CONF.232/2022/5), 8 August 2022, 62.
[253] Draft Article 14 (a) Objectives, *Further revised draft text*, 30 May 2022.
[254] IUCN *Commentary on the further revised draft text*, 49.

enforcement.[255] During the IGC-4 meeting, some State delegations proposed the establishment of a specific mechanism for cooperation and coordination, which could potentially be a platform within a future COP where global, regional, subregional and sectoral bodies could come together to formulate coordinated and collaborative approaches.[256] Along a similar vein, the IUCN has called for the COP to establish an "interim coordination mechanism" to advance cooperation on an "eco-regional scale" which would support implementation of the BBNJ agreement, in particular with regard to ABMT design and management.[257] It is important that any new provisions and platforms for cooperation redress current weaknesses and gaps within global and regional governance.[258]

The weaknesses of current regional mechanisms are clear: they do not fully cover ABNJ or have universal State membership, therefore in the absence of a global overarching body, who will fill these gaps? As noted earlier, there are significant regional weaknesses with regard to a limited scope to regulate human activities, enforcement and compliance.[259] Some regions have more powerful governance mechanisms than others with considerable differences in funding, causing disadvantages between regions and an absence of a level playing field at the global level.[260] This results in an inability to protect transboundary species and ecosystems or deal with transboundary impacts from bordering regions with less stringent regulations.[261] In their recent global overview of ROG mechanisms, Mahon and Fanning highlighted several key areas where regional level capacity needs to be scaled up: institutional architecture, policy development, management planning, technical capacity for on-the ground implementation and development of capacity at the regional level for the type of inter-regional cooperation

[255] Ibid.
[256] IISD, *Summary of the Summary of the Fourth Session of the Intergovernmental Conference on an International Legally Binding Instrument*, 7; 21.
[257] See IUCN *Commentary on the further revised draft text*, 64.
[258] Gjerde and Wright, 'Towards Ecosystem-based Management of the Global Ocean: Strength-ening Regional Cooperation through a New Agreement for the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction', 7.
[259] Rochette and others, 'The regional approach to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction', 115-116.
[260] Billé and others, *Regional oceans governance*, 60.
[261] Ibid.

which is essential to achieve integration in line with the ecosystem approach.[262] As noted in Billé and others "strong efforts in just a few regions will still not prevent loss of marine biodiversity at the global level."[263]

5. The Regional Approach to Transboundary Marine Protected Areas

The literature identifies several clear advantages of a regional approach to the establishment of MPAs. A regional approach takes the uniqueness of the local marine ecosystem into account before devising and applying the most appropriate legal and management tools.[264] It is therefore a targeted rather than a generic approach,[265] which takes into account the local political, legal and ecological context of a given region.[266] As stated earlier, it is more consistent with an ecosystem approach to marine management as it has a geographical rather than a sectoral scope.[267] For the development of ecologically representative and connected systems of protected areas, biogeographic classifications have been deemed essential.[268] Given that most ROG approaches take ecological criteria into account in a serious manner, and are not limited by national borders, it follows that they are attractive platforms for management of TBMPA networks. This strategy is also supportive of the Malawi Principles, which recognize that the ecosystem approach should be undertaken at the appropriate spatial and temporal scale.[269] Both of the case studies in Chapters Six and Seven are examples of regional governance on a biogeographic scale.

It has also proven to be a valuable platform for conducting a coordinated approach, given the abundance of shared interests and more diverse groups of stakeholders in comparison

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[262] Mahon and Fanning, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance', 2.
[263] Billé and others, *Regional oceans governance*, 60.
[264] Rochette and others, 'The regional approach to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction', 109.
[265] Barritt and Viñuales, 'Legal Scan: A Conservation Agenda for Biodiversity Beyond National Jurisdictions', 54.
[266] Rochette and others, 'The regional approach to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction', 109.
[267] Barritt and Viñuales, 'Legal Scan: A Conservation Agenda for Biodiversity Beyond National Jurisdictions', 53.
[268] Spalding and others, 'Marine ecoregions of the world: a bioregionalization of coastal and shelf areas', 574.
[269] Malawi Principle 7, Figure 4.1, Chapter Four.

to the global level.[270] Johnson and others highlight the common approaches developed under the RSP framework for monitoring and assessment of the state of the marine environment as a valuable tool to collect information on MPA coverage, ecological representativity and coherence at the regional scale. [271] In this way the RSP contributes to institutional stability and facilitates the regional cooperation needed for long-term sustainable MPA network development and implementation.[272] The case study in Chapter Six, which deals with the North East Atlantic, will examine in detail the governance framework of a Regional Seas Convention, albeit one that is independently established outside of UNEP. However, as discussed in Section 3(a), an independent RSP still benefits from UNEP's regional seas coordination activities and has regular interaction with UNEP. While Johnson and others consider that ensuring regional coherence of MPA network design, compliance and enforcement policies, and information sharing is an optimal way to counter commercial and industrial forces actively working against sustainable development,[273] it is submitted that if these sectors are excluded from the scope of the regional convention, it remains a challenging endeavour in reality.

Given the fragmented state of ocean governance, several studies agree that inter-institutional and cross-sectoral coordination and cooperation are key to successful conservation and sustainable use of biodiversity in ABNJ.[274] This will be essential for effective management of MPAs in ABNJ. As mentioned in Section 3(a)(i), RSCs which have established MPAs in ABNJ all have cooperation agreements in place with relevant competent authorities operating in their regulatory areas. As will be explored in detail in Chapter Six, the process of designating OSPAR MPAs in ABNJ has in fact led to greater cooperation and discussion between all the relevant competent authorities.[275] This may

[270] Rochette and others, 'The regional approach to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction', 109.
[271] Johnson and others, 'Building the regional perspective: platforms for success', 77.
[272] Ibid, 77.
[273] Ibid, 75.
[274] Wright and others, 'The long and winding road', 29. See also Rochette and others, 'The regional approach to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction', 115.
[275] O'Leary and others, 'The first network of marine protected areas (MPAs) in the high seas: The process, the challenges and where next', 604. See also the OSPAR Collective Arrangement, discussed in detail in Chapter Six, which aims to become a collective and multilateral forum composed of all competent entities addressing the management of human activities in this region is evidence of this.

well be one of the primary strengths of the regional approach. However, most examples of inter-sectoral and institutional cooperation in ABNJ tend to occur on an *ad hoc*, voluntary basis without overarching coordination.[276] When the IPCC recently emphasized the importance of MPA networks for the maintenance of ecosystem services, it cautioned that "geographic barriers […] and barriers to regional cooperation limit the potential for such networks".[277] Climate change, population pressures, economic globalization, and unsustainable exploitation of marine resources have been cited as some of the challenges inhibiting the ability to co-operate nationally, regionally, and internationally.[278] As will be illustrated in Chapters Six and Seven, another area of weakness in terms of the regional approach to MPAs has been in the area of compliance and enforcement, especially with regard to third parties and ABNJ. Some commentators have noted that if regional legal frameworks incorporated measures to implement obligations and control compliance, they would offer more promise for effective marine environmental protection. [279]

Mahon and Fanning suggest that ROG mechanisms may have the potential to be the 'missing link' between national and global systems, which is required to improve the implementation of global ocean governance.[280] Notwithstanding the above discussion on weaknesses of ROG and the need for strengthening of current mechanisms, law of the sea scholars believe that regional cooperation will remain essential for the effective implementation of the law of the sea and sustainable oceans management.[281] Hence why the selection of two regional case studies in this thesis, which provide a thorough analysis of two different approaches to regional cooperation (hard and soft law), is very timely. Due to the sectoral nature of the UNCLOS framework and the different jurisdictional zones it created in the ocean (which are not under review and not included in the limited

[276] For an overview see UNEP-WCMC, 'Governance of areas beyond national jurisdiction for biodiversity conservation and sustainable use: Institutional arrangements and cross-sectoral cooperation in the Western Indian Ocean and the South East Pacific', 30-48.
[277] Hans-Otto Pörtner and others, 'IPCC special report on the ocean and cryosphere in a changing climate' Intergovernmental Panel on Climate Change (IPCC 2019), Summary for policymakers, para C2.1, 35.
[278] Werle and others, 'The Future of Ocean Governance and Capacity Development', 3.
[279] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 162.
[280] Mahon and Fanning, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance', 11.
[281] Rothwell and others, *The Oxford handbook of the law of the sea*, 904.

scope of the BBNJ negotiations), it is necessary to work within existing conditions to a large degree. This is what makes mechanisms for improved cooperation between different organizations such an attractive and practical option. As the EU IOG Forum recently observed, it is essential to "develop new forms of cooperative spatial governance" which consider both areas within and beyond national jurisdiction.[282] The idea of creating a 'global oceans authority' has been disregarded as a pipe dream due to the complexity and diversity of existing ocean governance arrangements, as well the considerable time and effort already invested in the creation of these entities by States.[283] Instead what is needed for today's ocean governance seascape is "much more active coordination and cooperation between States, organizations, institutions, and private participants in the development, implementation, and enforcement of ocean-related norms."[284] In this context, Billé and others argue in favour of informal mechanisms for coordination over a formal reorganization of ROG.[285] The case study in Chapter Seven, the Eastern Tropical Pacific, will provide an insight into both the benefits and challenges associated with a more informal mechanism for regional coordination.

While existing regional cooperation remains sub-optimal in many cases, improvement may be possible through guidance developed at the global level and the provision of assistance to the regions which need it.[286] Some authors argue that the mandates of various ROG mechanisms need to be revised in order to improve synergies, complementarities and coherence in the international oceans governance regime as a whole.[287] This could include, as mentioned earlier, expanding geographical coverage of some regimes to include ABNJ and broadening mandates to reflect an ecosystem approach to management, bearing in mind the responsibilities of other organizations working in the same geographical region.[288] Of course, such an undertaking only makes sense if the mechanism in question is resilient enough to cope with such expansion. As

[282] Sebastian Unger and others, *Improving the International Ocean Governance Framework*, 4.
[283] Mahon and Fanning, 'Regional ocean governance: Integrating and coordinating mechanisms for polycentric systems', 3.
[284] Rothwell and others, *The Oxford handbook of the law of the sea*, 896.
[285] Billé and others, *Regional oceans governance*, 112
[286] Rothwell and others, *The Oxford handbook of the law of the sea*, 896.
[287] Billé and others, *Regional oceans governance*, 111.
[288] Ibid.

Billé and others point out, expanding the mandate of an underfunded and understaffed RSP to ABNJ is pointless.[289] Unfortunately, it remains the case that many RFBs and RSPs are individually weak mechanisms, short of the necessary resources to effectively implement their mandate, and reliant on the good faith of individual State parties to implement the measures agreed at the regional level.[290] Any strengthening exercise must also take into account the considerable diversity between regions.[291] In this regard, it has been recommended to improve the opportunities for knowledge transfer between "well resourced, 'properly functioning'" RSPs and those that are under resourced and less politically stable.[292] This thesis attempts to add to the literature on this question by selecting case studies in both the former and latter situations, and assessing how both can learn from one another in a symbiotic and bidirectional manner rather than via a simplistic one way knowledge transfer.

Therefore, while acknowledging the need for greater cooperation and coordination, Billé and others suggest that this should not overshadow the basic need to strengthen each mechanism for its own sake.[293] Given that new regional arrangements are declining and the overall suite of ROG mechanisms is stabilizing, Mahon and Fanning suggest that the next phase in ROG should be focused on structuring and strengthening the full global-regional suite of arrangements and its national linkages.[294] Given the ongoing debate over the potential of ROG mechanisms, the next part of this thesis will focus on two regional case studies which are notable for their efforts to establish transboundary networks of MPAs. One is an example of a formal, legally binding Regional Seas Convention in the North East Atlantic, while the other is an example of an informal non-binding mechanism in the Eastern Tropical Pacific. The strengths and weaknesses of both types of mechanisms will be examined in the case studies.

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[289] Ibid
[290] Ibid, 61.
[291] Mahon and Fanning, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance', 4.
[292] Johnson, Ferreira and Froján, 'Regional Seas Biodiversity under the post-2020 Global Biodiversity Framework', 7.
[293] Billé and others, *Regional oceans governance*, 61.
[294] Mahon and Fanning, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance', 4.

Chapter 6 Case Study I: Regional Cooperation for the Establishment and Management of a Transboundary Network of Marine Protected Areas in the North East Atlantic

The purpose of this chapter is to examine the enabling elements and challenges within a traditional legally binding framework to support regional cooperation for the establishment and management of a transboundary network of marine protected areas (TBMPAs). The North East Atlantic is notable *inter alia* for being the first region to introduce a transboundary network of MPAs encompassing both national jurisdictions and ABNJ.

1. The North East Atlantic Ocean

The precise geographical extent of the North East Atlantic (NEA) varies according to different European and international legal instruments.[1] The Regional Seas Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR)[2] covers most of the North East Atlantic (NEA) and its adjacent seas, which is a vast area of about 13.5 million km^2,[3] stretching from the Mid-Atlantic Ridge in the west to the North Sea in the East, and from the North Pole southward to the Azores.[4] The OSPAR maritime area is defined based on the maritime zones of its Contracting Parties (CPs) and includes a specific area of high seas and seabed beyond national jurisdiction in the Atlantic and Arctic Oceans.[5] Approximately 40% of the maritime area is situated in areas beyond national jurisdiction (ABNJ),[6] a sizeable amount in comparison to most other Regional

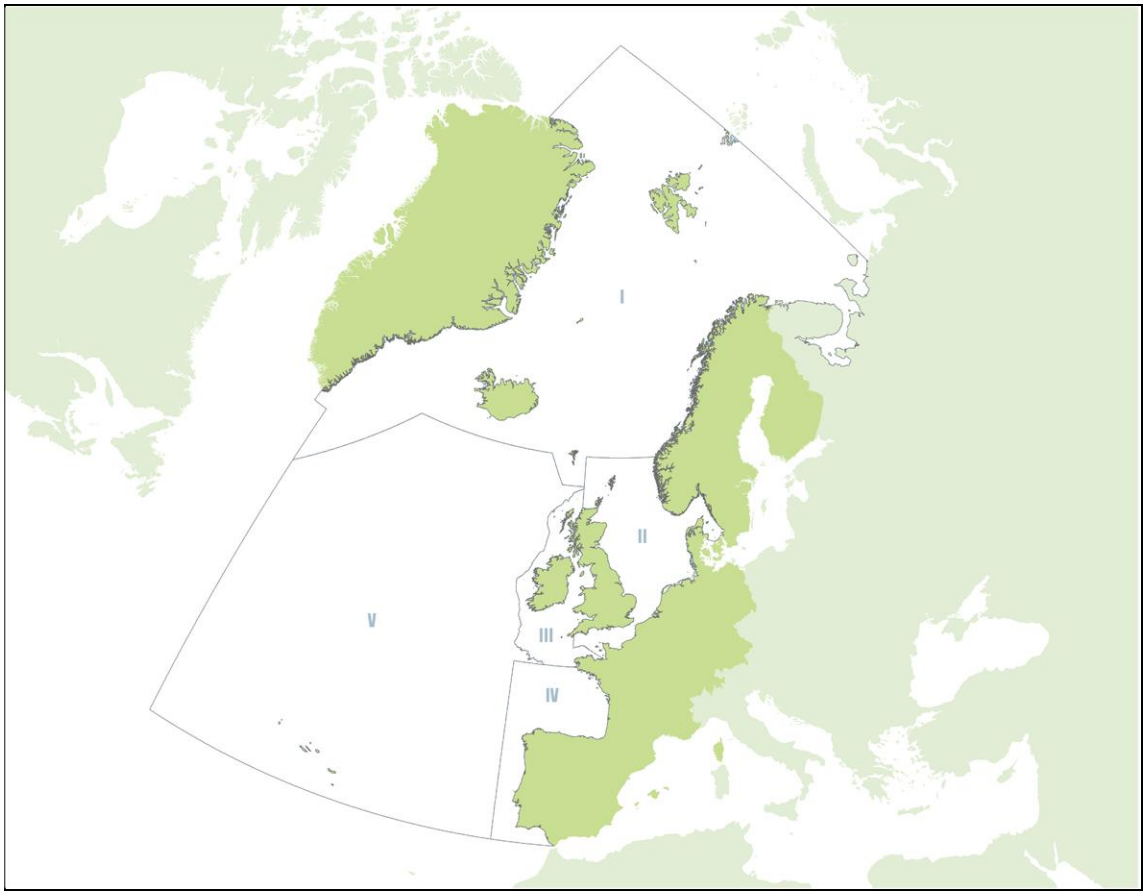
[1] See further Ronan Long, 'North East Atlantic and the North Sea' in Donald Rothwell and others, *The Oxford Handbook of the Law of the Sea* (Oxford University Press 2015), 649 and ICES, 'Definition and rationale for ICES ecoregions.' In Report of the ICES Advisory Committee, ICES Advice 2020, Section 1.4.
[2] Convention for the Protection of the Marine Environment of the North East Atlantic (1992) 2354 UNTS 67.
[3] Strategy of the OSPAR Commission for the Protection of the Marine Environment of the North East Atlantic 2030. Agreement 2021-01: North East Atlantic Environment Strategy (replacing Agreement 2010-02), (NEAS 2030), 1.
[4] https://www.unep.org/explore-topics/oceans-seas/what-we-do/working-regional-seas/regional-seas-programmes/north-east?_ga=2.110011909.180273129.1634848425-1753429031.1632768489
[5] Article 1(a) OSPAR Convention. See Figure 6.1.
[6] https://www.ospar.org/work-areas/bdc/marine-protected-areas/mpas-in-areas-beyond-national-jurisdiction

Seas Conventions (RSCs).[7] The inclusion of a significant portion of ABNJ is said to be related to historical reasons concerning dumping of low-level radioactive waste, rather than due to biodiversity considerations.[8]

The maritime area is further subdivided into five regions, for the purposes of environmental assessment and monitoring,[9] and is rich in biological diversity with a diverse range of environmental conditions and different ecosystems with important habitats and globally important populations of many marine species.[10] It encompasses approximately 162,000 km of coastline,[11] much of which is densely populated, highly industrialised or used intensively for agriculture.[12] The NEA is heavily impacted by an ever growing number of human activities.[13] The North East Atlantic Environment Strategy (NEAS) 2030, which sets out how the OSPAR Convention is to be implemented between 2020-2030, identifies the following major environmental challenges for the region: pollution, eutrophication, over-exploitation of living and non-living resources, incidental by-catch, non-indigenous species, underwater noise, damage to the seabed and marine litter, [14] with significant prominence given to the threat of climate change.[15]

[7] Erik J Molenaar and Alex G Oude Elferink, 'Marine protected areas in areas beyond national jurisdiction-the pioneering efforts under the OSPAR convention' (2009) 5 Utrecht L Rev 5, 9.
[8] David Johnson, 'Conserving the Charlie–Gibbs Fracture Zone: one of the world's first high seas marine protected areas' in Mackelworth P (ed.) *Marine Transboundary Conservation and Protected Areas* (Routledge 2016), 278.
[9] Region I: Arctic waters, Region II: Greater North Sea, Region III: Celtic Seas, Region IV: Bay of Biscay and Iberian Coast, Region V: Wider Atlantic. See Figure 6.1.
[10] OSPAR Quality Status Report 2010, Chapter 2. https://qsr2010.ospar.org/en/ch02.html; NEAS 2030, 1.
[11] Ibid, 2.
[12] Ibid.
[13] Bethan C O'Leary and others, 'The first network of marine protected areas (MPAs) in the high seas: the process, the challenges and where next' (2012) 36 Marine Policy 598, 599.
[14] NEAS 2030, 2.
[15] Ibid.

Figure 6.1 OSPAR Maritime Area and Sub-Regions[16]



2. Regional Ocean Governance in the North East Atlantic

The NEA region has been credited with setting a global example of "collaborative maritime governance structures" for the purposes of protecting the marine environment.[17] The main driver behind the much-lauded regional cooperation occurring in this region has been OSPAR, which has been described as a "comprehensive and unified framework for regional action".[18] The Preamble to the OSPAR Convention makes specific reference to Article 197 of UNCLOS on global and regional cooperation for the protection and preservation of the marine environment and considers that "the common interests of States concerned with the same marine area should induce them to cooperate at regional

[16] https://www.ospar.org/convention/the-north-east-atlantic
[17] Long, *North East Atlantic and the North Sea*, 660.
[18] Ibid.

or sub-regional levels". NEAS 2030 also refers to regional cooperation as being the "cornerstone of effective protection and sustainable use of the ocean."[19] It describes OSPAR's regional approach as taking "account of the different ecological and socio-economic conditions in the different regions" which "facilitates the implementation of targeted actions and measures in the regions, sub-regions and areas where they are appropriate."[20]

OSPAR is an independent Regional Seas Program (RSP),[21] with 16 Contracting Parties (CPs), including the European Union (EU).[22] All CPs are EU Member States except for Iceland, Norway, Switzerland and the United Kingdom. It is self-described as the "mechanism by which 15 Governments and the EU cooperate to protect the marine environment of the NEA".[23] Other regional and international organizations with a mandate in the maritime area of the North East Atlantic and with whom OSPAR endeavours to cooperate include the EU, the North East Atlantic Fisheries Commission (NEAFC), a Regional Fisheries Management Organization (RFMO) with competence to manage fisheries in the North East Atlantic,[24] the International Seabed Authority (ISA),[25] the International Maritime Organisation (IMO),[26] the International Commission for the Conservation of Atlantic Tunas (ICCAT),[27] the North Atlantic Salmon Conservation Organisation (NASCO)[28] and the North Atlantic Marine Mammal Commission

[19] NEAS 2030, 2.
[20] Ibid, 6.
[21] Which means that it has not been established by the United Nations Environment Programme (UNEP) but cooperates with it and attends regular meetings. See further Chapter Five.
[22] OSPAR's Contracting Parties are Belgium, Denmark, the EU, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom. See https://www.ospar.org/organisation/contracting-parties
[23] https://www.ospar.org/about
[24] https://www.neafc.org/
[25] The ISA is mandated under UNCLOS to organize, regulate and control all mineral-related activities in the international seabed area for the benefit of mankind as a whole. It has 167 Member States and the European Union. See further https://www.isa.org.jm/ and Chapter Three.
[26] The IMO is the United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships. It has 175 member States and three associate members. See further https://www.imo.org/en/About/Membership/Pages/Default.aspx
[27] ICCAT is a Regional Fisheries Management Organization (RFMO) responsible for the conservation of tunas and tuna-like species in the Atlantic Ocean and its adjacent seas. It currently has 52 Contracting Parties and is open to any government that is a member of the UN, any specialized UN agency or any inter-governmental economic integration organizations such as the EU. See further https://www.iccat.int/en/
[28] NASCO is an international organization, established by convention in 1984, whose objective is to conserve, restore, enhance and rationally manage Atlantic salmon though international co-operation,

(NAMMCO).[29] All parties to OSPAR are also members of the ISA and the IMO. NEAFC counts Denmark, the EU, Iceland, Norway and the Russian Federation and the United Kingdom as CPs.[30] Russia is the only member of NEAFC that is not a member of OSPAR, and Switzerland is the only OSPAR Contracting Party not a member of NEAFC.

The International Council for the Exploration of the Seas (ICES), an intergovernmental marine science organization, has played a key role in the NEA, in terms of providing a common scientific knowledge base for decision makers. For example, it has agreements to provide scientific advice to the EU, NASCO, NEAFC and OSPAR[31] and the ecoregions developed by ICES provide the broad-scale spatial framework to address management challenges and monitor the changing ecology of the NEA.[32] All ICES advice is linked to an ecoregion or group of ecoregions.[33] The large spatial overlap between the OSPAR Maritime Area, the NEAFC Convention Area and the ICES Convention,[34] has been described as a "fortunate coincidence" [35] from a governance perspective and an enabling factor for integrated, cross sectoral ecosystem-based ocean management.[36] All OSPAR CPs are ICES members, except for Luxembourg, Switzerland and the EU.[37]

The EU also plays a vital role in fostering regional cooperation for the protection of the marine environment in the NEA, first by binding its own Member States to relevant legislation, and secondly, by entering into agreements with third countries, and regional and multilateral bodies that have a mandate in maritime affairs in the region.[38] The EU's

taking account of best available scientific information. Member States include Canada, Denmark, the EU, Norway, Russia, UK and USA. See further https://nasco.int/. OSPAR entered into a Memorandum of Understanding with NASCO in 2013, in which they agreed to participate in meetings of common interest, share information and cooperate on specific issues. See OSPAR Agreement 2013-01.

[29] NAMMCO is an intergovernmental organization which advises governments on the conservation status, sustainable removals and responsible hunting methods of marine mammals. Member States are the Faroe Islands, Greenland, Iceland and Norway. See https://nammco.no/.

[30] https://www.neafc.org/about

[31] https://www.ices.dk/about-ICES/global-cooperation/Pages/Scientific-cooperation.aspx

[32] ICES, 'Definition and rationale for ICES ecoregions' in Report of the ICES Advisory Committee 2020, Section 1.4.

[33] Ibid.

[34] Convention for The International Council for the Exploration of the Sea, 12 September 1964.

[35] Johnson, 'Conserving the Charlie–Gibbs Fracture Zone: one of the world's first high seas marine protected areas', 278.

[36] Molenaar and Elferink, 'Marine protected areas in areas beyond national jurisdiction-the pioneering efforts under the OSPAR convention', 13.

[37] https://www.ices.dk/about-ICES/who-we-are/Pages/Member-Countries.aspx

[38] Long, *North East Atlantic and the North Sea*, 661.

Marine Strategy Framework Directive (MSFD),[39] in particular, has been a strong driver of convergence in the NEA and explicitly compels EU Member States to coordinate their conservation and management measures and to work with third countries through the regional seas agreements.[40] In its Preamble, the MSFD specifically recognizes the need for cooperation due to the transboundary nature of the marine environment and states that:

> "Member States should cooperate to ensure the coordinated development of marine strategies for each marine region or subregion. Since marine regions or subregions are shared both with other Member States and with third countries, Member States should make every effort to ensure close coordination with all Member States and third countries concerned. Where practical and appropriate, existing institutional structures established in marine regions or subregions, in particular Regional Sea Conventions, should be used to ensure such coordination."[41]

The MSFD also encourages the use of existing environmental assessments carried out under RSCs for the purposes of Member States' initial assessment of their marine waters in order that assessment methodologies will be consistent across marine regions and transboundary impacts and features will be taken into account.[42] The OSPAR Regions (Figure 6.1) are broadly similar but not identical to the subregions under the MSFD.[43] In 2015, the subregion definitions under the MSFD were accepted by ICES in order to reconcile ecoregions within the EU.[44] OSPAR has plans to further harmonize regional coordination requirements for those CPs that are also EU Member States, including *inter alia* assessment methods.[45] NEAS 2030 underlines the important relationship between

[39] Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive), OJ L 164, 25.6.2008.
[40] Article 6(1) MSFD on regional cooperation explicitly refers to **"**existing regional institutional cooperation structures, including those under Regional Sea Conventions, covering that marine region or subregion". See also Long, *North East Atlantic and the North Sea*, 661.
[41] Recital 13, MSFD.
[42] Article 8(1), (2) and (3) MSFD.
[43] See Article 4 MSFD.
[44] ICES, 'Definition and rationale for ICES ecoregions' in Report of the ICES Advisory Committee 2020, Section 1.4.
[45] Arising from Commission Decision (EU) 2017/84820. NEAS 2030, 14

OSPAR and the EU, stating that for CPs who are also EU Member States, "OSPAR provides a framework for cooperation that contributes to the achievement of their legal obligations under relevant EU instruments."[46] The OSPAR Commission has also stated that the MSFD and OSPAR are both inspired by the same objectives and principles, with the implementation of the ecosystem approach at their core.[47] In light of the withdrawal of the United Kingdom from the EU, it is arguable that OSPAR now has a greater role to play in terms of coordinating marine environmental protection policies in the NEA.

3. The OSPAR Convention

The OSPAR Convention as it stands today entered into force in 1998.[48] It evolved from instruments focused on addressing dumping at sea[49] and land-based sources of marine pollution,[50] which were unified and updated by the OSPAR Convention of 1992.[51] The principal purpose of this merger was to create a quasi- comprehensive regime in a single instrument for the protection of the NEA marine environment.[52] Article 2 of the OSPAR Convention deals with general obligations concerning the protection and preservation of the marine environment, resembling the provisions on the protection of the marine environment contained in UNCLOS.[53] Article 2 (1) (a) states:

> "The Contracting Parties shall, in accordance with the provisions of the Convention, take all possible steps to prevent and eliminate pollution and shall take the necessary measures to protect the maritime area against the adverse effects of human activities so as to safeguard human health and to conserve marine

[46] NEAS 2030, 6
[47] OSPAR Commission, 'Finding Common Ground: Towards regional coherence in implementing the Marine Strategy Framework Directive in the North East Atlantic region through the work of the OSPAR Commission.' 2012, 3.
[48] https://www.ospar.org/convention/text
[49] Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (1972) 932 UNTS 3.
[50] Convention for the Prevention of Marine Pollution from Land-Based Sources (1974) 1546 UNTS 103.
[51] https://www.ospar.org/about
[52] Yoshifumi Tanaka, *A dual approach to ocean governance: the cases of zonal and integrated management in international law of the sea* (Routledge 2008), 149.
[53] Nele Matz-Lück and Johannes Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?' (2014) 49 Marine Policy 155, 158.

ecosystems and, when practicable, restore marine areas which have been adversely affected."

The principal focus of OSPAR was originally on pollution prevention. The basic rules and principles listed in the main Convention text are elaborated on in more detail in five Annexes to the Convention and three accompanying Appendices. Annexes I - IV were adopted together with the Convention and deal with pollution from land-based sources (Annex I), pollution by dumping or incineration (Annex II), pollution from offshore sources (Annex III) and the assessment of the quality of the marine environment (Annex IV). A new Annex V on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area was adopted in 1998 to cover non-polluting human activities.[54] Article 2, Annex V states that CPs shall:

a. "take the necessary measures to protect and conserve the ecosystems and the biological diversity of the maritime area, and to restore, where practicable, marine areas which have been adversely affected; and

b. cooperate in adopting programmes and measures for those purposes for the control of the human activities identified by the application of the criteria in Appendix 3."

Article 3(1) Annex V enables the OSPAR Commission, responsible for implementing the Convention,[55] to *inter alia*,

"a. draw up programmes and measures for the control of human activities;

b.(i) collect and review information on such activities and their effects on ecosystems and biological diversity;

(ii) develop means, consistent with international law, for instituting protective, conservation, restorative or precautionary measures related to specific areas or sites or related to particular species or habitats."[56]

[54] It entered into force in 2000, together with Appendix 3, which contains criteria for identifying human activities for the purposes of Annex V. See Annex V, Appendix 3, para 2. https://www.ospar.org/about.
[55] Article 10 (2) (a) OSPAR Convention.
[56] Annex V, Article 3 (1)(b)(ii).

Article 2(1) of the Convention and Article 3(1) of Annex V provide the legal basis for the establishment of marine protected areas (MPAs) in the OSPAR maritime area, which will be discussed in more detail in Section 3 (a). According to some interpretations, the vague wording of Article 2, Annex V allows States to initially have a wide margin of appreciation, which is then limited by subsequent Article 3.[57] Article 3 is one of the few areas where the OSPAR Commission is explicitly entitled to enact measures,[58] which can apply to the entire Maritime Area or a specific sub region.[59] It does so through the adoption of Decisions, which are legally binding on the Contracting Parties,[60] and Recommendations[61] and other agreements[62] which have no binding force. Molenaar suggests that even though Recommendations are non-binding, in practice they have almost the same weight as legally binding decisions, given that consensual agreement is required to adopt them[63] and are often endowed with similar features such as deadlines and reporting requirements.[64] This practice highlights the increasing normative trend towards a merging of hard and soft law measures in international environmental law, discussed in Chapter Two.

While in theory Annex V covers the regulation of all human activities which can have an adverse effect on the marine ecosystems and the biodiversity in the North East Atlantic, fisheries[65] and shipping[66] are expressly excluded from its mandate, both in national and

[57] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?' 159; Danielle Smith and Julia Jabour, 'MPAs in ABNJ: lessons from two high seas regimes' (2017) 75 ICES Journal of Marine Science 417, 420.
[58] Ibid, 159.
[59] Molenaar and Elferink, 'Marine protected areas in areas beyond national jurisdiction-the pioneering efforts under the OSPAR convention', 14.
[60] Article 13 (2) OSPAR Convention.
[61] Article 13 (5) OSPAR Convention.
[62] https://www.ospar.org/about/how; https://www.ospar.org/convention/agreements
[63] Smith and Jabour, 'MPAs in ABNJ: lessons from two high seas regimes', 420.
[64] Molenaar and Elferink, 'Marine protected areas in areas beyond national jurisdiction-the pioneering efforts under the OSPAR convention' 14.
[65] The Preamble to the Convention states that "questions relating to the management of fisheries are appropriately regulated under international and regional agreements dealing specifically with such questions". Also, Article 4 Annex V states that" no programme or measure concerning a question relating to the management of fisheries shall be adopted under this Annex."
[66] Article 4 Annex V states that "where the Commission considers that action under this Annex is desirable in relation to a question concerning maritime transport, it shall draw that question to the attention of the International Maritime Organisation."

beyond national jurisdiction.[67] As a result, OSPAR cannot regulate one of the main sources of pollution in the oceans or the most impactful form of biomass extraction from the oceans.[68] Where the OSPAR Commission considers that action is desirable in relation to fisheries "it shall draw that question to the attention of the authority or international body competent for that question"[69] (see Section 2) and with regard to shipping, it shall be brought to the attention of the IMO, and endeavours shall be made to cooperate with them in order to achieve the appropriate response.[70] In 2009, OSPAR confirmed that the following human uses may be subject to OSPAR regulation: scientific research, cable-laying, dumping, construction of installations and artificial islands, and deep-sea tourism.[71] However, it has stated explicitly that deep-sea mining in the Area is outside its mandate and falls under the remit of the ISA.[72] The same goes for fishing and shipping as stated above.

Article 10 of the Convention provides for the establishment of the OSPAR Commission, which is tasked with monitoring compliance and devising implementation measures.[73] It is made up of representatives of each of the Contracting Parties.[74] Decision-making is largely consensus-based; however, provision is made in the Convention for decision-making by a three-quarters majority vote of the Commission.[75] In practice the OSPAR Commission seeks full consensus for its legally binding Decisions.[76] The Commission may allow non-party States, international governmental organisations and NGOs to participate as observers in Commission meetings, without the right to vote.[77]

[67] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 161.
[68] Ibid, 159.
[69] OSPAR Commission, 'OSPAR's Regulatory Regime for establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ) of the OSPAR Maritime Area,' 22-26 June 2009, para. 2.14.
[70] Ibid.
[71] Ibid, para 2.23.
[72] Ibid para 2.7 and 4.5. See also Annex 1.
[73] Article 10 (2) (a) and (c) OSPAR Convention.
[74] Article 10(1) OSPAR Convention.
[75] Article 13(1) OSPAR Convention; Long, *North East Atlantic and the North Sea*, 660.
[76] Smith and Jabour, 'MPAs in ABNJ: lessons from two high seas regimes', 420.
[77] Article 11 OSPAR Convention.

The compliance provisions of OSPAR have been described as relatively strong by Tanaka,[78] however their implementation in practice, particularly regarding management and enforcement of MPAs have been critiqued strongly[79] (see further Section 3(a)(ii)). The reporting obligations for compliance are set out more clearly than the overall vague substantive obligations.[80] Under Article 22 of the Convention, CPs must submit periodical reports to the Commission on implementation measures taken and their effectiveness.[81] This obligation also includes the collection and submission of information on activities involving OSPAR MPAs, which should be useful for future management decisions and contribute to more effective conservation despite its procedural character.[82]

Under Article 23 of the Convention, the OSPAR Commission must assess compliance based on the periodical reports submitted under Article 22. While this provision reinforces the supervision and control power of the Commission, OSPAR does not possess enforcement jurisdiction against a CP and thus far has not imposed measures on non-parties.[83] Given that Decisions and Recommendations are to be adopted mostly by consensus, it is highly unlikely that an enforcement action against a fellow CP would be voted for. In cases where a Decision is voted for by a three quarters majority it is only binding on those that have voted for it.[84] The OSPAR Secretariat administers the work under the Convention and runs the formal meeting schedule of OSPAR.[85] It also manages the reporting of Contracting Parties on the implementation of OSPAR measures and the reporting of data under OSPAR monitoring programmes.[86]

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[78] Tanaka, *A dual approach to ocean governance: the cases of zonal and integrated management in international law of the sea*, 152.
[79] E.g., Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?' and Johnson, 'Conserving the Charlie–Gibbs Fracture Zone: one of the world's first high seas marine protected areas'.
[80] Articles 22 and 23 OSPAR Convention. Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 159.
[81] Article 22 OSPAR Convention.
[82] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 159.
[83] Yoshifumi Tanaka, *The International Law of the Sea* (3 edn, Cambridge University Press 2019), 346.
[84] Article 13(2) OSPAR Convention.
[85] Article 12 OSPAR Convention.
[86] Ibid.

a. OSPAR MPA Network

Tanaka has observed that a remarkable feature of the OSPAR Convention is its evolutionary nature.[87] This can be observed in its evolution from instruments focused on pollution to including a wider range of human activities impacting on the marine environment of the NEA as well as its early adoption of new normative principles and approaches such as the ecosystem approach (see further Chapter Four), the precautionary principle and the polluter pays principle.[88] OSPAR's development of a MPA network is also illustrative of this evolutionary approach. The text of the Convention notably does not contain an explicit legal basis for the establishment of MPAs, rather the concept of MPAs was developed via the OSPAR Commission through several non-binding Recommendations.[89]

During the 1998 Ministerial Meeting of the OSPAR Commission in Sintra, Portugal, during which Annex V and the OSPAR Strategy for 2000-2010 was adopted, the Commission made a commitment to promote the establishment of a network of MPAs to ensure the "sustainable use, protection, and conservation of marine biological diversity and ecosystems", to be known as the OSPAR Network of Marine Protected Areas ("the OSPAR Network").[90]

In 2003, Recommendation 2003/3 was adopted with the purpose of establishing the OSPAR Network of MPAs to:

> "a. protect, conserve and restore species, habitats and ecological processes which have been adversely affected by human activities;
>
> b. prevent degradation of, and damage to, species, habitats and ecological processes, following the precautionary principle;

[87] Tanaka, *A dual approach to ocean governance: the cases of zonal and integrated management in international law of the sea*, 185; 187.
[88] Long, *North East Atlantic and the North Sea*, 660; NEAS 2030, 5. Article 3(1)(b)(iv) specifically refers to the application of an integrated ecosystem approach by the OSPAR Commission when carrying out its work under Annex V.
[89] Tanaka, *A dual approach to ocean governance: the cases of zonal and integrated management in international law of the sea*, 185-187.
[90] OSPAR Commission Guidelines for the Identification and Selection of Marine Protected Areas in the OSPAR Maritime Area (Agreement number: 2003-17), 1

c. protect and conserve areas that best represent the range of species, habitats and ecological processes in the maritime area."[91]

Under the Recommendation, parties were to ensure that the OSPAR MPA Network is 'ecologically coherent' and 'well-managed' by 2010.[92] As outlined in Chapters Two and Three, this is broadly in line with similar MPA commitments adopted at the global level during this time. The 2003 Recommendation was amended and updated in 2010 to reflect the fact that "despite the collective efforts […], the network of MPAs in 2010 is not yet considered to be ecologically coherent throughout the entire OSPAR maritime area".[93] Therefore, the 2003 Recommendation was amended to ensure that:

> "By 2012 it is ecologically coherent, includes sites representative of all biogeographic regions in the OSPAR maritime area, and is consistent with the CBD target for effectively conserved marine and coastal ecological regions;
>
> by 2016 it is well managed (i.e., coherent management measures have been set up and are being implemented for such MPAs that have been designated up to 2010)."[94]

Section 5 of this chapter will assess the current status of the OSPAR MPA network and whether it has met its stated goals.

The Recital to Recommendation 2003/3 makes specific reference to Article 2(1) of the Convention, Annex V and in particular Article 3(1) of Annex V which "makes it a duty of the OSPAR Commission to develop means, consistent with international law, for instituting protective, conservation, restorative or precautionary measures related to specific areas or sites or related to specific species or habitats." Therefore, it is evident that Annex V, and in particular Article 3, essentially provide the underlying legal basis for the establishment of MPAs in the OSPAR maritime area. The OSPAR Commission has stated that MPAs form part of the wider work OSPAR has initiated under Annex V

[91] OSPAR Recommendation 2003/3 on a Network of Marine Protected Areas, OSPAR 03/17/1-E, para 2.1.
[92] Ibid.
[93] OSPAR Recommendation 2010/2 on amending Recommendation 2003/3 on a network of Marine Protected Areas, OSPAR 10/23/1, Annex 7, 2.1.
[94] Ibid, 2.2.

and should work in partnership with other measures to protect and conserve the ecosystems and biological diversity of the OSPAR maritime area.[95] OSPAR's MPA network is also considered a key means of implementing its strategic objectives.[96]

i. Designation

OSPAR defines an MPA as "an area within the maritime area for which protective, conservation, restorative or precautionary measures, consistent with international law, have been instituted for the purpose of protecting and conserving species, habitats, ecosystems or ecological processes of the marine environment",[97] which has been described as a comprehensive MPA definition aiming at a holistic view of marine ecosystems,[98] and noteworthy in the sense that it refers to the components of biological diversity (species, habitats, ecosystems, ecological processes).[99]

CPs are required to nominate sites to be included in the OSPAR network, which must then be reported on annually.[100] The 2003 Recommendation is supported by a set of guidelines on identification and selection of MPAs in the OSPAR maritime area (hereinafter known as the 2003-17 Guidelines).[101] In relation to sites under national jurisdiction, parties should consider whether any areas within its jurisdiction justify selection as MPAs, following the 2003-17 Guidelines, and then report to the OSPAR Commission the areas that it has selected for inclusion in the OSPAR MPA Network.[102] New MPAs nominated to the OSPAR network are considered during the annual meeting of the OSPAR Biodiversity Committee.[103]

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[95] OSPAR Commission, 'Guidance on developing an ecologically coherent network of OSPAR marine protected areas', (Reference number 2006-03), para. 2
[96] Specifically Strategic Objectives 5 and 6 which deal with the achievement of biologically diverse and healthy seas. See further NEAS 2030, 4-5.
[97] OSPAR Recommendation 2003/3, 1-2.
[98] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 156.
[99] Ingvild Ulrikke Jakobsen, *Marine protected areas in international law: An arctic perspective* (Brill 2016), 8.
[100] OSPAR Recommendation 2003/03, 3.1; See further https://www.ospar.org/work-areas/bdc/marine-protected-areas/nominating-mpas
[101] OSPAR Agreement 2003-17, see fn. 90.
[102] OSPAR Recommendation 2003/03, para 3.1; OSPAR Agreement 2003-17, para 11.
[103] https://www.ospar.org/work-areas/bdc/marine-protected-areas/nominating-mpas

The process of identification and selection of MPAs is broken down into two stages:[104]

1. Identification of possible sites.[105]
2. Prioritization of sites for designation.[106]

For a site to be designated as an MPA by OSPAR, it must meet several but not all of the criteria specified in Appendix 1 of the 2003-17 Guidelines, which fall under the following headings:

- Threatened or declining species and habitats/biotopes[107]
- Important species and habitats/biotopes
- Ecological significance
- High natural biological diversity
- Representativity
- Sensitivity
- Naturalness.

Appendix 2 of the 2003-17 Guidelines lists some practical considerations to consider, such as size, potential for restoration, degree of political and stakeholder acceptance, potential for success of management measures, impact of human activities and scientific value. Prioritization may occur for some areas, for example, those which hold a higher population of species warranting protection or for areas with a higher level of support from stakeholders.[108] The process for designating MPAs in ABNJ is different to that of national jurisdictions, with a collective procedure envisaged (see further Section 3 (b)(i) below), however the same identification and selection guidelines apply.

Given that the EU is a party to OSPAR, there are important inter-linkages between OSPAR MPAs and EU mandated MPAs, which is explicitly recognized by OSPAR. Therefore, where a CP is already required to set up sites under the EU's protected area

[104] OSPAR Agreement 2003-17, Section 3.
[105] Following criteria listed in Appendix 1 of the 2003-17 Guidelines.
[106] Following criteria in Appendices 1 and 2 of the 2003-17 Guidelines.
[107] The OSPAR Commission prepares the OSPAR List of Threatened and/or Declining Species and Habitats, which is based on nominations by State parties and observers. https://www.ospar.org/work-areas/bdc/species-habitats
[108] OSPAR Agreement 2003/17, para. 9.

network[109] in the OSPAR maritime area, OSPAR enables them to report that area as a component of the OSPAR Network of MPAs.[110] Long has commented that the OSPAR MPA network complements the MSFD and should therefore not be viewed in isolation from the overall scheme of regional environmental protection in the region.[111]

ii. Management

Recommendation 2003/3 states that CPs should develop a management plan and associated measures[112] in accordance with the guidelines issued for management of OSPAR MPAs, (hereinafter known as the 2003-18 Guidelines).[113] It is noteworthy that these guidelines were adopted in the form of an Agreement and not as a Recommendation; therefore, they cannot be categorised as a formal measure admissible under the OSPAR Convention.[114] They are essentially non-binding technical guidance.

The 2003-18 Guidelines recommend that management plans be developed with the active involvement of relevant stakeholders from the earliest stages.[115] There has been disagreement among CPs on the question of whether management measures are required to be in place prior to designation of an MPA.[116] However it has been agreed that the institution of such measures, before or at the same time as the establishment of an MPA, is desirable.[117] The 2003-18 guidelines state that for any MPA nominated to the network, management measures should be implemented at the latest five years after designation.[118] The effectiveness of any management measures adopted will need to be evaluated and management plans adapted as necessary on a regular basis.[119]

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[109] Known as Natura 2000. See further https://ec.europa.eu/environment/nature/natura2000/index_en.htm.
[110] OSPAR Recommendation 2003/3, 3.5.a
[111] Long, *North East Atlantic and the North Sea*, 663.
[112] Paras. 3.3.a and 3.3.b.
[113] OSPAR Commission, 'Guidelines for the Management of Marine Protected Areas in the OSPAR Maritime Area' (Agreement 2003-18).
[114] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 160.
[115] OSPAR Agreement 2003-18, 2.
[116] OSPAR Commission, *OSPAR's Regulatory Regime for establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ)*, para 5.4.
[117] Ibid, para 5.7
[118] OSPAR Agreement 2003-18, para 3.2.d.
[119] Ibid, 2.

While OSPAR encourages regulation of MPAs through the implementation of these management guidelines, there is no formal regulation on behalf of OSPAR. Rather the efficacy of the OSPAR regime is dependent upon CPs implementing their regional obligations by means of national and EU law.[120] The 2003-18 guidelines specifically state that national legislation may be required to support the management of OSPAR MPAs within national jurisdiction.[121]

Concerning the regulation of human activities, the 2003-18 Guidelines state that "action may be needed to regulate activities both within the areas of national jurisdiction and in the rest of the maritime area as appropriate."[122] It also notes that such activities may need to be regulated within or in the vicinity of an MPA in order to achieve the objectives of the MPA designation.[123] In terms of managing human activities, it suggests the following options either individually or in any combination:[124]

- Maintenance of existing levels of activities.
- Regulation of the intensity of activities.
- Regulation of activities in space (including zoning).
- Regulation of activities in time (ban of certain activities for a specific period, e.g., during breeding seasons or spawning periods).
- Introduction of less harmful practices (e.g., change in fishing gear, less noisy engines)
- Substitution of materials or substances (e.g., to avoid contamination).
- Total ban of activities.
- Restoration.

However as stated earlier, several important human activities fall outside the scope of OSPAR's competence, including fishing, shipping and mining. Therefore, in situations where competence to take measures lies with another authority, or their consent is required, Recommendation 2003/03 recommends that parties should take steps to seek

[120] Long, *North East Atlantic and the North Sea*, 661.
[121] OSPAR Agreement 2003-18, para 7.
[122] Ibid, 3
[123] Ibid.
[124] Ibid, 5.

the adoption of and/or consent for those measures.[125] Where OSPAR does have competence, it is recommended that CPs should initiate management processes under its domestic legislation.[126]

The potential content of management plans is specified in the 2003-18 Guidelines via an outline structure for a management plan based on the IUCN model.[127] The practical guidance for establishing management plans contained therein is aimed at OSPAR MPAs within national jurisdiction only.[128] Where CPs have nominated EU natura sites as OSPAR MPAs, their existing management plans will suffice, with no further action necessary.[129] It is generally accepted that the success of MPAs is very much contingent upon the quality and effectiveness of the management measures (see Chapter Two), yet the OSPAR Commission has previously reported difficulties in assessing management due to the absence of specific information from CPs.[130] This may be due to the fact that very few MPAs in the EU and OSPAR Member States have management plans in place.[131]

In 2020, the OSPAR Commission found that while appropriate management is in place for some OSPAR MPAs, implementation is still required for many, stating that "only 14 % of OSPAR MPAs are known to be moving towards, or have achieved, their conservation objectives".[132] A 2022 study found that that most OSPAR MPAs do not have a management plan but overlapping regulatory documents managed by independent national agencies.[133] Given that many OSPAR MPAs may be subject to multiple designations, including EU Natura sites and national MPA legislation, it has been recommended that OSPAR MPAs should have one unified management plan which refers to all applicable regulations, and is independent from external mechanisms which could

[125] OSPAR Recommendation 2003/3, para 3.2.b.ii.
[126] Ibid, para. 3.2.b(i)
[127] OSPAR Agreement 2003-18, 2-3.
[128] Appendix 1.
[129] Appendix 1, para 3.
[130] Long, *North East Atlantic and the North Sea*, 664.
[131] See AL Perry, J Blanco and N Fournier, *Unmanaged= Unprotected: Europe's marine paper parks.* Oceana, Brussels, 2020.
[132] OSPAR Commission *Status of the OSPAR Network of Marine Protected Areas in 2020*, 2.
[133] Julia Roessger, Joachim Claudet and Barbara Horta e Costa, 'Turning the tide on protection illusions: The underprotected MPAs of the 'OSPAR Regional Sea Convention'' (2022) 142 Marine Policy 105109, 7; Perry, Blanco and Fournier, *Unmanaged= Unprotected: Europe's marine paper parks.*

be changed without conservation objectives in mind and have a direct impact on the quality of the MPA.[134] The OSPAR Commission has acknowledged management weaknesses and stated that additional efforts to implement management measures are necessary to achieve the conservation objectives of OSPAR MPAs in parallel with long-term monitoring programmes.[135] It has identified a lack of data and the lack of a common understanding on what constitutes effective management as being a challenge for assessing management effectiveness.[136] Assessment guidance has been developed to evaluate whether the aim of establishing a well-managed network is being achieved,[137] while the development of assessment methodology is ongoing.[138]

b. OSPAR MPAs in ABNJ

OSPAR has a mandate to establish MPAs in ABNJ.[139] The 2003 Recommendation defines the OSPAR MPA Network as including sites within national jurisdiction and "any other area in the maritime area outside the jurisdiction of the Contracting Parties which has been included as a component of the network by the OSPAR Commission".[140] Given that OSPAR operates as a RSC under the umbrella of UNCLOS,[141] all actions taken by OSPAR in ABNJ need to be consistent with UNCLOS, in particular Part VII on the high seas, Part XI on the Area and Part XII on the protection and preservation of the environment.[142] OSPAR has been described as "pioneering"[143] and precedent setting[144] in its efforts to establish MPAs in ABNJ, especially given that UNCLOS does not contain

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[134] Roessger, Claudet and e Costa, 'Turning the tide on protection illusions: The underprotected MPAs of the 'OSPAR Regional Sea Convention'', 7.
[135] OSPAR Commission, *Status of the OSPAR Network of Marine Protected Areas in 2020*, 2.
[136] Ibid.
[137] OSPAR Commission, 'Guidance to assess the effectiveness of management of OSPAR MPAs: a self-assessment scorecard.' (OSPAR Agreement 2007-5.)
[138] https://www.ospar.org/work-areas/bdc/marine-protected-areas/guidance-for-the-development-and-management-of-the-ospar-network
[139] See OSPAR Commission, *OSPAR's Regulatory Regime for establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ)*.
[140] OSPAR Recommendation 2003/3, para 1.1.
[141] Johnson, 'Conserving the Charlie–Gibbs Fracture Zone: one of the world's first high seas marine protected areas', 28.
[142] OSPAR's Regulatory Regime for establishing MPAs in ABNJ of the OSPAR Maritime Area. OSPAR 09-22-1'E, Annex 6, 1, para. 2.1 See further Chapter Three.
[143] Molenaar and Elferink, 'Marine protected areas in areas beyond national jurisdiction-the pioneering efforts under the OSPAR convention'.
[144] Tammy E Davies and others, 'Tracking data and the conservation of the high seas: Opportunities and challenges' (2021) 58 Journal of Applied Ecology 2703, 1.

an explicit legal basis to do so (see Chapter Three). As mentioned in the previous chapter, OSPAR is only the third RSC to establish MPAs in the high seas, following efforts in the Mediterranean and Antarctica.[145] It therefore provides a useful case study for learning about the intricacies of implementation.[146]

Some legal aspects of OSPAR's competence to establish MPAs in ABNJ was clarified in 2008, when OSPAR sought advice from the OSPAR group of Jurists/Linguists.[147] The advice concluded that CPs have an obligation to protect biodiversity in ABNJ and specifically OSPAR has competence to:

- set up a process to designate and establish a network of MPAs in ABNJ;
- identify features to be protected, set conservation objectives and prescribe relevant measures; and
- adopt measures for those human uses for which competence is identified or to co-operate with the competent authorities where such an organisation or organisations are in place.[148]

It confirmed that within the OSPAR maritime area "no other international organisation has the mandate for setting in place an integrated process for the protection of an area in ABNJ having regard to human activities and their cumulative impacts on the basis of the ecosystem approach (including *i.a.* the assessment of the status of the environment, the identification of features to be protected, the establishment of objectives and monitoring measures)."[149] Molenaar argues that this allows the OSPAR Commission to act as an 'authority by default' in the absence of a competent international organization at the global level.[150]

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[145] See further Chapter Five and Sarah Ryan Enright, 'Marine Protected Areas in the high seas:The role of regional ocean governance' (2020) 25 Environmental Liability-Law, Policy and Practice 248, 255.
[146] Davies and others, 'Tracking data and the conservation of the high seas: Opportunities and challenges', 1.
[147] See OSPAR Commission, *OSPAR's Regulatory Regime for establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ)* and OSPAR Commission, 'Rules of Procedure of the OSPAR Commission' (Reference Number: 2013-02), F(iv).
[148] Ibid, 9.
[149] Para 2.21.
[150] Molenaar and Elferink, 'Marine protected areas in areas beyond national jurisdiction-the pioneering efforts under the OSPAR convention', 10.

The advice also confirmed two major limitations when it comes to designating MPAs in ABNJ, which will be discussed in more detail in below:

- OSPAR cannot regulate all human activities in ABNJ and,
- it can only bind its own Contracting Parties to any protective measures.[151]

It is important to note that this document does not take the form of a legally binding OSPAR Decision nor the form of a Recommendation (whilst not legally binding, is an official and influential OSPAR measure). Therefore, as surmised by Matz-Lück and Fuchs, its value should be taken as that of an internal policy document rather than a legal instrument.[152] Nevertheless it is the most elaborate document issued by the OSPAR Commission regarding its own mandate[153] and arguably an influential instrument of soft law.

i. Designation

Despite OSPAR coming into force in 1998, the establishment of MPAs within national waters of CPs preceded those in ABNJ, mainly due to practical reasons such as clarity on national ownership and responsibility.[154] Designating MPAs in ABNJ was seen as less clear, although recognised as necessary.[155] Since 2005, all 12 Contracting Parties bordering the NEA have nominated sites to the OSPAR MPA Network both in their national waters as well as collectively in ABNJ.[156] In 2007 OSPAR began considering proposals for several MPA sites in ABNJ[157] which resulted in the establishment of a network of MPAs in the high seas of the OSPAR maritime area in 2010, an action described as an "unprecedented step".[158]

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[151] OSPAR Commission, *OSPAR's Regulatory Regime for establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ)*, para. 4.3.
[152] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 159.
[153] Ibid.
[154] O'Leary and others, 'The first network of marine protected areas (MPAs) in the high seas: the process, the challenges and where next', 599.
[155] Ibid.
[156] OSPAR Commission *Status of the OSPAR Network of Marine Protected Areas in 2019*, 1.
[157] https://www.ospar.org/work-areas/bdc/marine-protected-areas/mpas-in-areas-beyond-national-jurisdiction
[158] O'Leary and others, 'The first network of marine protected areas (MPAs) in the high seas: the process, the challenges and where next', 598.

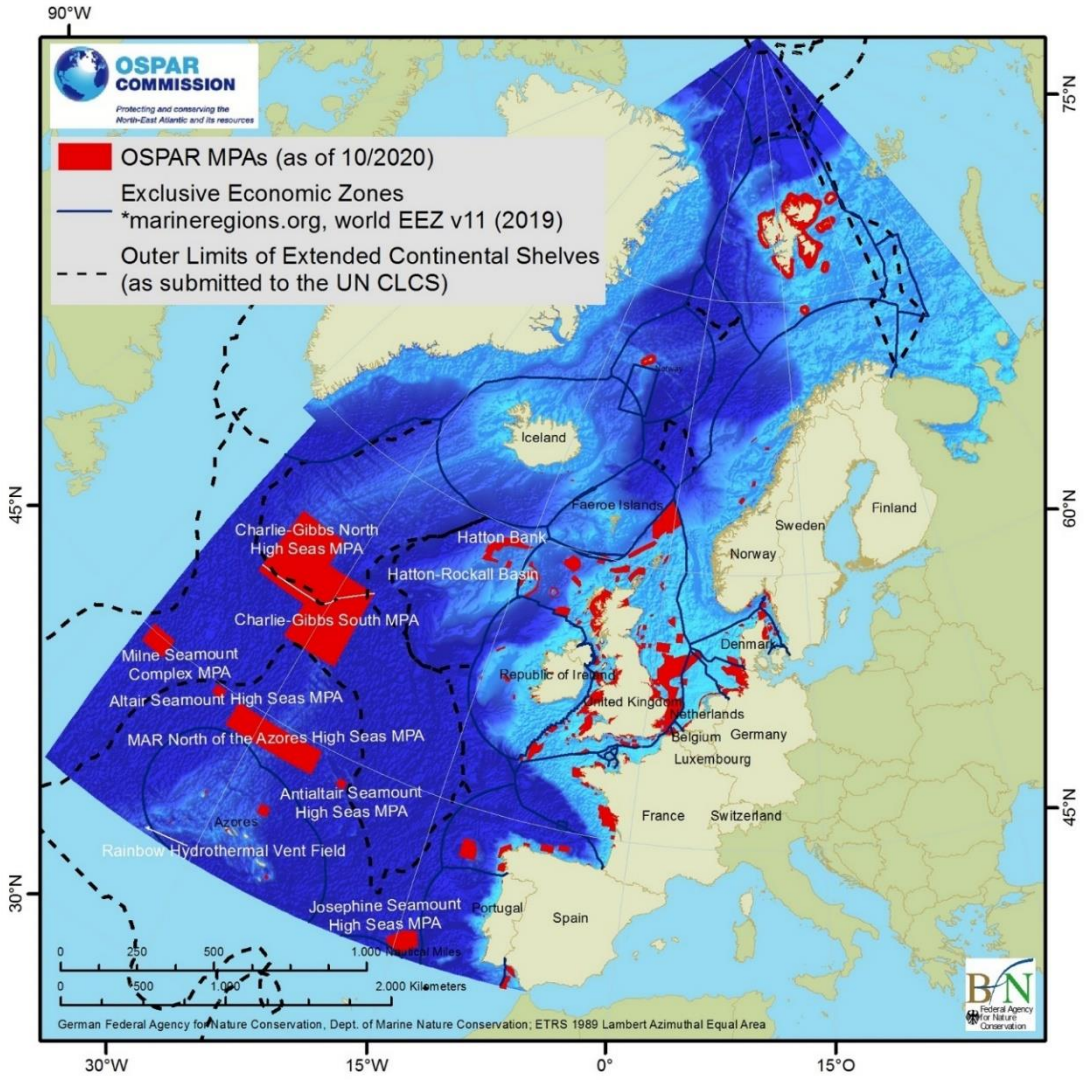
The first six MPAs in ABNJ were established by OSPAR Decisions in 2010, together covering an area of 286,200 km^2.[159] These MPAs are known as the Milne Seamount Complex MPA,[160] the Charlie-Gibbs South MPA,[161] the Altair Seamount High Seas MPA,[162] the Antialtair Seamount High Seas MPA,[163] the Josephine Seamount High Seas MPA[164] and the MidAtlantic Ridge North of the Azores High Seas MPA.[165] They were mostly designated for benthic[166] features, including fracture zones and seamounts. A seventh high seas MPA followed in 2012, the Charlie Gibbs North MPA,[167] which is pelagic in nature.[168]

The text of the designation Decisions is broadly similar, recalling *inter alia* Article 2(1) of the OSPAR Convention, Annex V and its Article 3(1)(b)(ii), Recommendation 2003/3, international commitments regarding networks of MPAs and relevant UNCLOS provisions and United Nations General Assembly Resolutions. All Decisions contain a precise geographical description of the area to be protected and state that the MPA boundaries may be reviewed by the OSPAR Commission.[169]

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[159] Ibid.
[160] OSPAR Decision 2010/1 on the Establishment of the Milne Seamount Complex Marine Protected Area, OSPAR 10/23/1-E, Annex 34
[161] OSPAR Decision 2010/2 on the establishment of the Charlie-Gibbs South Marine Protected Area, OSPAR 10/23/1-E, Annex 36.
[162] OSPAR Decision 2010/3 on the Establishment of the Altair Seamount High Seas Marine Protected Area, OSPAR 10/23/1-E, Annex 38
[163] OSPAR Decision 2010/4 on the Establishment of the Antialtair Seamount High Seas Marine Protected Area, OSPAR 10/23/1-E, Annex 40.
[164] OSPAR Decision 2010/5 on the Establishment of the Josephine Seamount High Seas Marine Protected Area, OSPAR 10/23/1-E, Annex 42.
[165] OSPAR Decision 2010/6 on the Establishment of the MAR North of the Azores High Seas Marine Protected Area, OSPAR 10/23/1-E, Annex 44.
[166] The term benthic refers to anything associated with or occurring on the bottom of a body of water. https://oceanservice.noaa.gov/facts/benthic.html
[167] OSPAR Decision 2012/1 on the establishment of the Charlie Gibbs North High Seas Marine Protected Area.
[168] Pelagic refers to the water column and is to be distinguished from benthic, which refers to the bottom of a body of water. See further https://oceanservice.noaa.gov/facts/pelagic.html
[169] See e.g., OSPAR Decision 2012/1, para 3.2.

Figure 6.2. OSPAR MPA Network 2020[170]



The OSPAR MPAs in ABNJ are a prime illustration of the legal complexities inherent in the current fragmented international legal framework for MPAs, explained in Chapter Three. Each MPA is subject to a different jurisdictional regime depending on its geography and how much of it falls completely within an ABNJ. For example, the Milne Seamount Complex and the Charlie Gibbs South MPAs are situated entirely in ABNJ, with the seabed, subsoil and water column protected collectively by OSPAR parties, which is the most straightforward situation.[171]

[170] Available at https://oap.ospar.org/en/ospar-assessments/committee-assessments/biodiversity-committee/status-ospar-network-marine-protected-areas/assessment-sheets-mpa/
[171] https://www.ospar.org/work-areas/bdc/marine-protected-areas/mpas-in-areas-beyond-national-jurisdiction

Additional complexities have emerged due to submissions to extend continental shelves by several OSPAR Contracting Parties in 2009, which has created uncertainty within the OSPAR MPA selection process in terms of how MPAs with dual legislation (the water column under international legislation and national legislation being applied for the seafloor) could function.[172] For example, the Altair, Antialtair and Josephine Seamount MPAs, and the MidAtlantic Ridge North of the Azores MPA are situated within an area subject to an extended continental shelf (ECS) submission by Portugal.[173] A co-management approach has been developed whereby Portugal has committed to protecting the seabed and the subsoil within these areas while OSPAR agreed to collectively protect the water column of these MPAs.[174] Therefore these MPAs were designated both by OSPAR (for the waters overlying the seabed) and Portugal (for the seabed).[175] The Charlie Gibbs North MPA is partly situated within an area subject to an ECS submission by Iceland.[176] The water column is protected collectively by OSPAR parties while the seabed and the subsoil remain unprotected.[177]

Although it would seem that the dual legal regimes of the seabed and the water column would be legally difficult to co-manage, in practice success boils down to a willingness of States to engage cooperatively with the competent authorities, with the case of co-management of the four ABNJ MPAs above by Portugal and OSPAR being cited as a good example.[178] For an MPA to achieve its objectives, the coherent management of the seabed together with the water column is essential as activities in either realm will likely

[172] O'Leary and others, 'The first network of marine protected areas (MPAs) in the high seas: the process, the challenges and where next', 602.
[173] https://www.un.org/depts/los/clcs_new/commission_submissions.htm.
[174] Collective arrangement between competent international organisations on cooperation and coordination regarding selected areas in areas beyond national jurisdiction in the North East Atlantic, OSPAR Agreement 2014-09 (Update 2018), Annex 1B.
[175] O'Leary and others, 'The first network of marine protected areas (MPAs) in the high seas: the process, the challenges and where next', 602.
[176] https://www.un.org/depts/los/clcs_new/commission_submissions.htm
[177] https://www.ospar.org/work-areas/bdc/marine-protected-areas/mpas-in-areas-beyond-national-jurisdiction
[178] O'Leary and others, 'The first network of marine protected areas (MPAs) in the high seas: the process, the challenges and where next', 602.

impact the ecosystem in the other.[179] The OSPAR combination of coastal State jurisdiction over the ECS and an internationalised regime protecting the water column while ECS decisions are pending has been described as a promising start for inter-institutional cooperation.[180]

By the end of 2018 the OSPAR MPA network comprised of 10 MPAs in ABNJ, including the following nationally nominated MPAs: the Rainbow Hydrothermal Vent Field, Hatton Bank SAC and Hatton-Rockall Basin.[181] These MPAs are situated within areas subject to an ECS submission by Portugal and the UK respectively and have special status. The Rainbow Hydrothermal Vent Field is located on the Portuguese continental shelf, including the ECS.[182] It has technically been assigned to Portugal, but in the category of 'beyond the EEZ', given that 22km^2 of it lie beyond the Portuguese Exclusive Economic Zone (EEZ).[183] Hatton Bank SAC and Hatton Rockall Basin have also been assigned to the UK, in the category of 'beyond the EEZ'.[184] The seabed and subsoil of these sites are protected by Portugal and the UK respectively, while the water column remains unprotected.[185] The North-West Rockall SAC is sometimes referred to as an eleventh MPA as it partly extends beyond the UK EEZ, however for calculations of MPA coverage it is assigned to the category of UK MPAs.[186] It falls under the categories 'EEZ' and 'beyond the EEZ'.[187]

[179] Ibid.
[180] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 162.
[181] https://www.ospar.org/work-areas/bdc/marine-protected-areas/mpas-in-areas-beyond-national-jurisdiction
[182] Ibid.
[183] Marta Chantal da Cunha Machado Ribeiro, Fernando Loureiro Bastos and Tore Henriksen, *Global Challenges and the Law of the Sea* (Springer 2020), 458; On the Portuguese OSPAR MPAs see further Marta Chantal Ribeiro, 'The 'Rainbow': the first national marine protected area proposed under the high seas' (2010) 25 The International Journal of Marine and Coastal Law 183.
[184] Ibid.
[185] https://www.ospar.org/work-areas/bdc/marine-protected-areas/mpas-in-areas-beyond-national-jurisdiction
[186] Ibid.
[187] Ribeiro, Bastos and Henriksen, *Global Challenges and the Law of the Sea*, 458.

The Hatton-Rockall plateau was proposed as a candidate OSPAR MPA in 2007 but set aside due to the political complexity of competing and unresolved ECS submissions.[188] Instead, several seabed features around the Hatton-Rockall plateau have been designated as national offshore MPAs including the OSPAR nominated SACs, Hatton Bank and North-West Rockall Bank, and the Hatton Rockall Basin Nature Conservation MPA.[189] NEAFC has recommended and enforced the closure of several defined areas to bottom trawling and fishing with static gear for the protection of Vulnerable Marine Ecosystems (VMEs)[190] in the area, known as the Hatton-Rockall closures.[191] The water column overlying the Hatton-Rockall plateau falls under the remit of several international bodies, including OSPAR, the EU, NEAFC, NASC, ICCAT, NAMMCO, and the International Whaling Commission (IWC).[192] The Hatton-Rockall plateau is an example of the complex legislative framework that applies to many offshore transboundary situations which incorporate national jurisdiction, ABNJ, and are subject to ECS submissions.[193] The governance of the ecosystem around the Rockall and Hatton banks has been described as a 'super wicked' marine governance problem due to the array of competing regulations.[194]

Designation Procedure

As explained in Section 3(a)(i), when establishing an MPA within national jurisdiction it is up to the individual CP to assess an area and justify why an MPA is needed in accordance with the criteria set out in the identification and selection guidelines.[195] Essentially the nomination procedure is carried out within the concerned CP. However,

[188] David E Johnson and others, 'Rockall and Hatton: Resolving a super wicked marine governance problem in the High Seas of the northeast Atlantic Ocean' (2019) 6 Frontiers in Marine Science 69, 8.
[189] Ibid, 2-3. Designated under the 2010 Marine (Scotland) Act.
[190] See Chapter Three.
[191] Johnson and others, 'Rockall and Hatton: Resolving a super wicked marine governance problem in the High Seas of the northeast Atlantic Ocean', 4.
[192] Ibid, 2.
[193] Ibid, 6.
[194] Ibid.
[195] OSPAR Agreement 2003-17.

within ABNJ there is a need for collective agreement of the OSPAR Contracting Parties, and an OSPAR measure to include the area within the network.[196]

Recommendation 2003/3, as amended, sets out the procedure for designation of MPAs in ABNJ stating that CPs should contribute, as practicable, to assessments of areas beyond national jurisdiction in the North East Atlantic which may justify selection as an OSPAR MPA (under the criteria set out in the 2003-17 guidelines) and propose to the OSPAR Commission the areas that should be selected.[197] Observers to the Convention may also propose an MPA in ABNJ but it must be supported by a CP to receive formal consideration and all CPs must support designation.[198] The nomination procedure for MPAs in ABNJ is prepared as a concerted effort by all OSPAR CPs and may require continuous work for several years given the amount of environmental data that needs to be collected.[199]

In 2019, parties developed general consultation procedures for establishing MPAs in ABNJ in the OSPAR Maritime Area in order to increase transparency and acceptance of the nomination process.[200] The stated objective of the Consultation Procedures is to collect as much relevant information as possible to ensure that OSPAR has the best available knowledge before establishing MPAs in ABNJ[201] and to draw attention of users, coastal states and other stakeholders to the proposed MPA in order for them to provide relevant scientific information and express possible concerns.[202] OSPAR will publish the nomination documents for a proposed ABNJ MPA on its website with a general invitation for comments.[203] In addition, the Secretariat will invite the most potentially affected

[196] OSPAR Commission, *OSPAR's Regulatory Regime for establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ*), para 5.3.
[197] OSPAR Recommendation 2003/3, 3.1.c and d.
[198] OSPAR Agreement 2013-02, Annex 2, para. 4.2, 23. This occurred most recently in the case of the North Atlantic Current and Evlanov Sea basin MPA (NACES). See further Section 5.
[199] UNEP, 'Regional Seas Application of Area-based Management Tools, including Marine Protected Areas – Case Studies' (UNEP 2019), 4.
[200] OSPAR, 'General consultation procedures for establishing Marine Protected Areas in Areas Beyond National Jurisdiction of the OSPAR Maritime Area.' (OSPAR Agreement 2019-09.)
[201] Ibid, 2.
[202] https://www.ospar.org/work-areas/bdc/marine-protected-areas/mpas-in-areas-beyond-national-jurisdiction
[203] Ibid.

OSPAR and non OSPAR States, as well as relevant IGOs and NGOs to comment on the proposals.[204]

ii. Management

OSPAR has a relatively wide mandate for identifying and assessing areas within the OSPAR maritime area in need of protection, but when it comes to establishing protective measures for the management of human activities, the limits to OSPAR's competence become more evident.[205] As stated earlier, OSPAR may take management measures in relation to the following activities in ABNJ: scientific research, cable-laying, dumping, construction of installations and artificial islands, and deep-sea tourism.[206] However it cannot regulate all human activities in ABNJ, with important areas such as fisheries, shipping and mining being outside its remit.[207] Consequently, in order to create a network of MPAs in ABNJ it is essential for OSPAR to work with other international organisations that have legal competence over activities within its maritime area.[208] If an activity is subject to OSPAR regulation, then all OSPAR measures are open to CPs, that is, Decisions, Recommendations, and other agreements (for example, guidelines, guidance, code of conduct).[209] In relation to ABNJ, OSPAR may also choose to use diplomatic means of interaction with other states and actors that operate or plan to operate in ABNJ within the OSPAR Maritime Area.[210]

OSPAR manages the collectively designated MPAs in the ABNJ by developing OSPAR Recommendations outlining the measures and actions to be taken, either separately or collectively, by CPs, which are developed based on the information collated in the nomination documents.[211] While legally binding Decisions are used to designate all ABNJ MPAs, non-binding Recommendations have been issued thus far on management.

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[204] Ibid.
[205] OSPAR Commission, *OSPAR's Regulatory Regime for establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ*), 5.
[206] Ibid.
[207] Ibid para 2.22.
[208] O'Leary and others, 'The first network of marine protected areas (MPAs) in the high seas: the process, the challenges and where next', 599.
[209] OSPAR Commission, *OSPAR's Regulatory Regime for establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ*), para 5.1.
[210] Ibid.
[211] UNEP, *Regional Seas Application of Area-based Management Tools*, 4.

Despite not being legally binding, Johnson has argued they do place a "moral obligation" on CPs to act collectively.[212] The text of the management Recommendations state that the purpose is to "guide" OSPAR CPs in their actions and adoption of measures to protect the biological diversity of MPAs in ABNJ.[213] They also state that the management of human activities in ABNJ MPAs should be guided by the general obligations in Article 2 of the Convention and that an appropriate level of resources should be committed by each CP in order to achieve the conservation objectives of the ABNJ MPA.[214] Recommended management actions include raising awareness, information building, furthering science, considering new developments and evaluation of any associated environmental impact assessments (EIAs), and promotion of the MPAs to third parties.[215] CPs should report annually on any actions taken to implement management measures within the competency of OSPAR.[216] The conservation objectives agreed for the sites are included in an Annex to the Management Recommendations. The fact the management, which is essentially the means to implement an MPA, is dealt with via soft law measures, illustrates an interesting dichotomy whereby OSPAR utilizes a legally binding framework for its structure and the designation of MPAs, yet when it comes to management, compliance and enforcement, it engages non-binding measures or leaves it up to Member States in their national jurisdictions. In this sense OSPAR represents an interesting merger of hard and soft law approaches to regional cooperation for the protection of the marine environment, which some authors claim is becoming an international norm.[217]

OSPAR can only bind its own CPs to any protective measures.[218] For example, it may prohibit the laying of submarine cables in a MPA but this measure will not apply to non-contracting parties.[219] As a result, it is recommended that OSPAR cooperate with other

[212] Johnson, 'Conserving the Charlie–Gibbs Fracture Zone: one of the world's first high seas marine protected areas', 279.
[213] See e.g., OSPAR Recommendation 12-01, para 2.1
[214] E.g., OSPAR Recommendation 21-01, para 3.2.
[215] E.g., OSPAR Recommendation 12-01, Section 3 Programmes and Measures.
[216] E.g., Ibid para 5.1 https://www.ospar.org/work-areas/bdc/marine-protected-areas/mpas-in-areas-beyond-national-jurisdiction
[217] Johnson, 'Conserving the Charlie–Gibbs Fracture Zone: one of the world's first high seas marine protected areas', 282.
[218] OSPAR Commission, *OSPAR's Regulatory Regime for establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ*), 4.3.
[219] Ibid, para 2.6.

international organisations to set relevant standards that may also bind non-parties.[220] A further complication may occur whereby an authority with competence to regulate a field of activity outside of OSPAR's competence (e.g., in fisheries, shipping or mining) adopts protective measures, but not all OSPAR contracting parties are parties to that respective regime.[221] Finding a pathway to achieve third State compliance is considered as a vital task to ensure the effectiveness of the OSPAR MPA network.[222] According to the most recent 2020 OSPAR MPA status report,[223] CPs have begun to implement management actions for OSPAR MPAs in ABNJ. The report reiterates that successful management of these MPAs requires cooperation with international organisations with competence for the management of fishing, shipping and deep-sea mining.[224]

4. Regional Cooperation in the North East Atlantic

Regional cooperation with other competent authorities in the OSPAR maritime area is essentially mandated by Annex V to the OSPAR Convention.[225] OSPAR has stated that the aim of institutional cooperation is to help it deliver an ecosystem approach to the management of human activities in the marine environment.[226] In relation to modalities of cooperation with other competent authorities in the region, the OSPAR Convention does not contain rules of procedures for such co-operation, therefore affording the OSPAR Commission with a wide discretion; it may choose a collective approach, using soft law instruments such as Memoranda of Understanding (MoUs) and encouraging mutual observer status.[227] Generally speaking, the OSPAR Commission is free to adopt the most appropriate and effective mode of interaction, which might be different from organisation to organisation and range from awareness-raising to concrete proposals for action.[228]

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[220] Ibid, para 4.4.
[221] Ibid, para 4.5.
[222] Yao Huang and Pham Tran Vuong, 'Marine Protected Areas in ABNJ versus the Principle of High Seas Freedom: Possible Pathway from the OSPAR Experience' in Keyuan, Z (ed) *Sustainable Development and the Law of the Sea* (Brill Nijhoff 2017), 189.
[223] OSPAR Commission, *Status of the OSPAR Network of Marine Protected Areas in 2020*, 2.
[224] Ibid.
[225] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 161.
[226] https://www.ospar.org/about/international-cooperation/collective-arrangement+
[227] OSPAR Commission, *OSPAR's Regulatory Regime for establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ*), para 4.7.
[228] Ibid.

In 2008 as part of the preparatory work for the adoption of MPAs in ABNJ, OSPAR developed a roadmap, wherein OSPAR sought to formalise working relationships with other key competent authorities in the Maritime Area, including the IMO, ISA and NEAFC by adopting formal MoUs between these organisations.[229] The MoU between OSPAR and NEAFC notes their "complementary competences and responsibilities for fisheries management and environmental protection" in the NEA, including ABNJ.[230] For example, NEAFC has identified VMEs and mandated bottom fisheries closures, many of which overlap with OSPAR sites.[231] It has been claimed that many of the high seas MPA sites chosen by OSPAR took into account NEAFC closures in order to increase international acceptance.[232] During the site selection process, a member of NEAFC was also a member of the OSPAR MPA group, which allowed for the delivery of a more coherent high seas network, with the final set of MPA sites established by NEAFC and OSPAR being closely aligned geographically.[233] The parallel work by NEAFC and on their protected area designation processes,[234] has led some commentators to claim that a complementary network of sites has been established by both organisations in the region.[235]

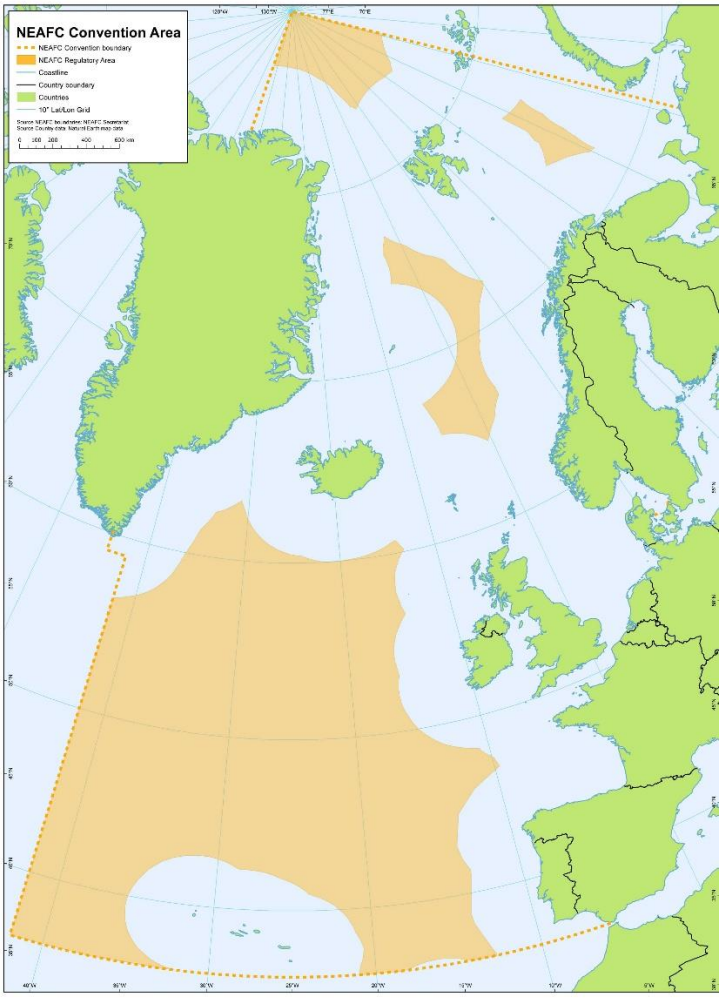
The NEAFC-OSPAR MoU lays down the basis for future cooperation, namely through the sharing of data, working together to develop a common understanding of the precautionary approach; cooperating regarding maritime spatial planning (MSP) and area management, encouraging marine science in the NEA, cooperating on specific projects through ICES, establishing reciprocal observer arrangements and the provision of reports

[229] Ibid.
[230] Memorandum of Understanding between the North East Atlantic Fisheries Commission (NEAFC) and the OSPAR Commission (2008), 2.
[231] Ingrid Kvalvik, 'Managing institutional overlap in the protection of marine ecosystems on the high seas. The case of the North East Atlantic' (2012) 56 Ocean and Coastal Management 35.
[232] O'Leary and others, 'The first network of marine protected areas (MPAs) in the high seas: the process, the challenges and where next', 600.
[233] Ibid.
[234] Glen Wright and others, 'Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14' (2017) Partnership for Regional Ocean Governance (PROG): IDDRI, IASS, TMG & UN Environment, 35.
[235] Glen Wright and Julian Rochette, 'Regional Ocean Governance of Areas Beyond National Jurisdiction: Lessons Learnt and Ways Forward', STRONG High Seas Project (2019), 17.

of meetings relevant to one another's work.[236] However, despite sharing some common objectives, it is important to remember that the scope of competence of OSPAR and NEAFC differs and they do not have overlapping mandates in terms of the types of measures they may adopt.[237] NEAFC has a more specific and narrow focus than OSPAR, with its main objective being the long-term conservation and optimum utilisation of fishery resources in its Convention Area.[238] To this end, it has competence to adopt management measures for various fish stocks and control measures to ensure that they are properly implemented.[239] NEAFC also adopts measures, such as VMEs, to protect other parts of the marine ecosystem from potential negative impacts of fisheries.[240] NEAFC's management role is mainly on the high seas,[241] but measures can apply to areas within national jurisdiction in cases where the relevant coastal State suggests such an arrangement.[242] Furthermore, in contrast to OSPAR, NEAFC's conservation and management measures for fisheries are generally legally binding for all its CPs.[243]

[236] MoU between NEAFC and OSPAR (2008), 2-3.
[237] UNEP, *Regional Seas Application of Area-based Management Tools*, 5; Smith and Jabour, 'MPAs in ABNJ: lessons from two high seas regimes', 420.
[238] www.neafc.org.
[239] Ibid.
[240] Ibid.
[241] See map of the NEAFC Convention Area here: https://www.neafc.org/page/27
[242] See Asmundsson S and Corcoran E, 'The Process of Forming a Cooperative Mechanism Between NEAFC and OSPAR', UNEP Regional Seas Reports and Studies No. 196 (2015), 2.
[243] Ibid, 3

Figure 6.3 NEAFC Convention Area[244]



In 2010, OSPAR brokered a MoU with the ISA.[245] In its preamble, the MoU refers to the competence of the ISA regarding effective protection of the marine environment.[246] The operative part refers to mutual consultation and cooperation where marine scientific research and preservation of the marine environment are concerned but avoids any clarification regarding the respective territorial competences of either party.[247] An MoU

[244] Source: https://neafc.org/page/27. See Article 1 Convention on Future Multilateral Cooperation in North East Atlantic Fisheries, adopted on 18 November 1980 and entered into force in 1982. Available at https://neafc.org/basictexts. It replaced the earlier 1959 North East Atlantic Fisheries Convention.
[245] Memorandum of Understanding with the International Seabed Authority (the Authority), OSPAR Agreement 2010-9, OSPAR 10/23/1, Annex 12.
[246] "The Authority is competent to take necessary measures in order to ensure effective protection of the marine environment from harmful effects which may arise from activities in the Area as set out in Article 145 of the Convention and section 1, paragraph 5(g) of the 1994 Agreement".
[247] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 161.

was agreed with the IMO in 2018, the purpose of which is to cooperate within the scope of the London Convention and Protocol[248] at the regional level.[249] Areas of cooperation include ensuring free flow of mutually useful information and capacity building activities.[250] There also remains in place the Agreement of Cooperation between IMO and OSPAR which is more general in nature and broadly mentions future cooperation and consultation, as well as mutual assistance.[251]

These bilateral cooperation arrangements[252] were the first step towards a coordinated approach to regional cooperation for the management of the OSPAR MPA network and helped to strengthen attempts to broker a 'collective arrangement', coordinated by OSPAR and involving all the competent authorities in the OSPAR maritime region, for the potential management of selected areas in ABNJ.[253] Given the weaknesses of governance at the global level, the goal was to create a specific cooperative mechanism for multi-sectoral management of these MPAs via long term cooperation between the relevant stakeholders.[254] In 2014, the Collective Arrangement (CA)[255] was adopted by OSPAR and NEAFC, to establish a wider scope of cooperation and coordination, different from that contained in their bilateral MoU.[256] The CA applies to selected areas in ABNJ,[257] and which include the first seven high seas OSPAR MPAs,[258] areas that NEAFC has closed to bottom fishing,[259] and any other areas where a competent international organisation has established area-based management measures.[260] The CA states that cooperation and coordination in the NEA should be based on *inter alia*

[248] Convention for the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972), as modified by the Protocol of 7 November 1996, 1046 UNTS 120.
[249] Memorandum of Understanding between the International Maritime Organization (IMO) and the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Commission) on the promotion of the London Convention and Protocol (2018), para 1.
[250] Ibid, para 2.
[251] See ibid, Preamble, 1-2.
[252] For a full list, see https://www.ospar.org/about/international-cooperation/memoranda-of-understanding
[253] O'Leary and others, 'The first network of marine protected areas (MPAs) in the high seas: the process, the challenges and where next', 600.
[254] Ibid, 603.
[255] OSPAR Agreement 2014-09 (Update 2018).
[256] UNEP, *Regional Seas Application of Area-based Management Tools*, 5.
[257] Which are specified in Annex 1 of the CA.
[258] See Annex 1B, CA.
[259] See Annex 1A, CA.
[260] Annex 1, CA.

applicable international principles, standards and norms, any bilateral MoUs between competent international organizations and scientific evidence.[261] Areas of cooperation include the exchange of information and data, notification of any proposed activities, and cooperation with regard to EIAs and Strategic Environmental Assessments (SEAs).[262] Formal annual meetings have since been held, bringing together the Secretariats of both organisations, CP representatives, observers from other competent international organisations, and NGOs.[263]

OSPAR distinguishes the CA from the bilateral MoUs in the sense that it aims at a wider participation of all competent organisations and bodies in order to ensure a multilateral dialogue and collaborative work in the future.[264] The foremost objective of the collective arrangement is to facilitate cooperation and coordination on area based management between legally competent authorities, share information on each other's activities and avoid undermining each other's conservation and management measures.[265] They also keep a joint record of areas subject to specific measures and mutually inform of any modification of existing measures or of any new measures or decisions.[266]

The CA has been described as an evolving text and not a legal document.[267] While OSPAR and NEAFC are the first participants to endorse this arrangement, the aim is for it become a collective and multilateral forum composed of *all* competent entities addressing the management of human activities in this region.[268] There are continued discussions to bring additional organisations into the collective arrangement which to date have not yet been formalised.[269] However, organizations such as the ISA, IMO and ICCAT are invited to join meetings under the CA.[270] The incorporation of global bodies

[261] CA, para 4.
[262] CA, para 6.
[263] Wright and Rochette, 'Regional Ocean Governance of Areas Beyond National Jurisdiction: Lessons Learnt and Ways Forward', 17.
[264] https://www.ospar.org/about/international-cooperation/collective-arrangement
[265] UNEP, 'Regional Seas Application of Area-based Management Tools, 6.
[266] Ibid.
[267] Johnson, 'Conserving the Charlie–Gibbs Fracture Zone: one of the world's first high seas marine protected areas', 280.
[268] https://www.ospar.org/about/international-cooperation/collective-arrangement
[269] Ibid.
[270] Ibid.

such as the ISA and IMO has proven challenging, with practical reasons cited such as different levels of technical scrutiny among global bodies and incompatible meeting cycles.[271] It may also be the case that "third-party countries do not share the same interests and knowledge as countries within the region and may prevent progress within the remit of competent global organisations."[272] According to Johnson, the adoption of bilateral MoUs and the CA represent an ongoing "trust building exercise" in the region which recognizes aspects of common purpose and respects specific legal mandates.[273] Wright and Rochette posit that the CA demonstrates that coordination and cooperation between competent international organisations in ABNJ can be achieved despite the lack of an overarching legal framework at the global level.[274] However it remains a bilateral agreement between OSPAR and NEAFC and thus incomplete without the other key competent organizations in the area, in particular the ISA and the IMO.

5. Current Status of the OSPAR MPA Network

The latest MPA Status report was published in 2020 and refers to the status of the OSPAR MPA network as of October 2020.[275] At this time the network comprised 552 MPAs with a total surface area of 874,127 km^2 or 6.5 % of the OSPAR Maritime Area.[276] 542 of these MPAs are situated within national waters, with most sites have in territorial waters (19.3%) with only 2.8 % of EEZs covered by OSPAR MPAs.[277] The ABNJ of the OSPAR maritime area holds 10 OSPAR MPAs, covering 8.9 % of this area.[278] In 2021, a new MPA was designated in ABNJ by OSPAR, the North Atlantic Current and Evlanov Sea basin (NACES) MPA,[279] which aims to protect and conserve seabirds and the

[271] Johnson and others, 'Rockall and Hatton: Resolving a super wicked marine governance problem in the High Seas of the northeast Atlantic Ocean', 17.
[272] Wright and others, 'Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14', 56.
[273] Johnson and others, 'Rockall and Hatton: Resolving a super wicked marine governance problem in the High Seas of the northeast Atlantic Ocean', 6.
[274] Ibid, 17.
[275] OSPAR Commission, *Status of the OSPAR Network of Marine Protected Areas in 2020.* Available at https://oap.ospar.org/en/ospar-assessments/committee-assessments/biodiversity-committee/status-ospar-network-marine-protected-areas/assessment-sheets-mpa/2020/.
[276] Ibid, 1.
[277] Ibid
[278] Ibid
[279] OSPAR Decision 2021/01 on the establishment of the North Atlantic Current and Evlanov Sea basin Marine Protected Area. OSPAR 21/13/1, Annex 23.

ecosystems of the waters super adjacent to the seabed that support them.[280] It is an area of approximately 595,196 km2 situated in the wider Atlantic, bounded to the north by the Charlie-Gibbs Fracture Zone and in the south by the Azores.[281] It was first presented to the OSPAR Commission in 2016 by BirdLife International, an Observer to the Convention, subsequently gaining the support of all Contracting Parties to move to designation.[282]

a. Ecological Coherence of the OSPAR MPA Network

OSPAR is unique in the sense that it is attempting to develop a transboundary network of MPAs which covers areas under national jurisdiction and those in ABNJ. As discussed in Chapter Four, OSPAR has developed influential, non-binding guidance (hereinafter referred to as the 2006/3 Guidance) to assist parties in interpreting the concept of an 'ecologically coherent' network of MPAs in the OSPAR maritime area.[283] When assessing the ecological coherence of the OSPAR network, a number of criteria are applied including geographical distribution of MPAs, MPA coverage across biogeographic regions and representation and replication of marine habitats and species within OSPAR MPAs.[284] A 2014 evaluation of the coherence of this network considered that the OSPAR high seas MPAs are more correctly categorized as individual 'sets' of MPAs rather than sites operating together as a network.[285] This study acknowledged that assessment of ecological coherence is a challenging task particularly in the marine environment where data may be limited; furthermore at the time of the study there was no precedent to follow given the lack of any coherent network of MPAs in any area of the world under national jurisdiction despite several decades of effort.[286]

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[280] Ibid, para 2.1
[281] OSPAR Recommendation 2021/01, Annex 24, para 1.1.
[282] Davies and others, 'Tracking data and the conservation of the high seas: Opportunities and challenges', 3.
[283] OSPAR Commission, *Guidance on Developing an Ecologically Coherent Network of OSPAR Marine Protected Areas* (2006/3).
[284] UNEP, *Regional Seas Application of Area-based Management Tools*, 4.
[285] David Johnson and others, 'When is a marine protected area network ecologically coherent? A case study from the North-east Atlantic' (2014) 24 Aquatic Conservation: Marine and Freshwater Ecosystems 44, citing the work of John C. Roff, 'Networks of marine protected areas - the demonstrability dilemma' (2014) 24 Aquatic Conservation 1.
[286] Ibid, 46.

The 2020 OSPAR MPA Status report concluded that the OSPAR MPA network cannot yet be considered ecologically coherent.[287] It found that OSPAR MPAs are currently distributed unevenly across the five OSPAR Regions and that further work is required to ensure that at-risk habitats and species are adequately protected within the MPA network.[288] If the network is not well-distributed across space, then it is likely that the network will not exhibit connectivity or representativity of ecoregions and habitats.[289] Independent studies have also found that the OSPAR network is unevenly protected.[290] However, the 2020 status report did find that the network has a good representation of several biogeographic regions within the NEA, which is one of the requirements for ecological coherence.[291]

A major challenge in relation to the assessment of ecological coherence is the paucity of relevant data on *inter alia* occurrence, distribution and status of species and habitats.[292] Ecological coherence of the network cannot be achieved unless the distribution gaps in the network are closed.[293] With a better understanding of the current state of ecological coherence and of management effectiveness, CPs can consider where additional MPAs need to be nominated in order to fill gaps in the network and if management measures need to be adjusted to achieve conservation objectives.[294] The 2020 Status Report concluded that data deficiencies and the lack of a feasible methodology currently hamper a sophisticated eco-coherence assessment but efforts are being made to solve these issues.[295] Assessment guidance has been developed to evaluate whether the aim of

[287] OSPAR Commission *Status of the OSPAR Network of Marine Protected Areas in 2020,* 1.
[288] Ibid.
[289] O'Leary and others, 'The first network of marine protected areas (MPAs) in the high seas: the process, the challenges and where next', 603.
[290] Roessger, Claudet and e Costa, 'Turning the tide on protection illusions: The underprotected MPAs of the 'OSPAR Regional Sea Convention'', 5.
[291] OSPAR Commission *Status of the OSPAR Network of Marine Protected Areas in 2020,* 1.
[292] Ibid.
[293] Ibid 1-2.
[294] Ibid, 2.
[295] Ibid, 1.

establishing an ecologically coherent[296] is being achieved, while the development of assessment methodology is ongoing.[297]

However despite these efforts, a recent 2022 analysis painted a far from rosy picture, concluding that protection levels in OSPAR MPAs remain largely unknown.[298] The authors found that 97.9% of OSPAR MPAs are "partially protected" (see Chapter Two), of which 30% are moderately protected, 63% unprotected and 7% weakly protected. [299] They deemed that only 0.03% of the network was highly protected.[300] They also found that highly protected MPAs could only be found in territorial seas, thus highlighting governance challenges in other maritime zones (see Chapter Three). EEZs appear to pose particular challenges, notably due to the cumbersome procedures under the EU Common Fisheries Policy, which regulates fisheries in EU Member States.[301] For example, the EEZs in the OSPAR maritime zone had the lowest MPA coverage (less than 6%) with more than 93% of MPAs unprotected, leading the authors to conclude that these MPAs do not offer any greater protection that unprotected areas outside MPAs.[302] Surprisingly there is a greater level of protection in the OSPAR ABNJ than in the EEZ. The 2022 study found that 55% of the ABNJ MPAs were moderately protected, citing collective implementation and collaboration between OSPAR and NEAFC as a key factor for success. [303] The OSPAR Commission has acknowledged the issues with protection and stated that improved reporting of relevant data on species and habitats as well as on

[296] OSPAR Commission, 'Background document to support the assessment of whether the OSPAR network of Marine Protected Areas is ecologically coherent' (2007). Available at https://www.ospar.org/work-areas/bdc/marine-protected-areas/guidance-for-the-development-and-management-of-the-ospar-network
[297] https://www.ospar.org/work-areas/bdc/marine-protected-areas/guidance-for-the-development-and-management-of-the-ospar-network
[298] Roessger, Claudet and e Costa, 'Turning the tide on protection illusions: The underprotected MPAs of the 'OSPAR Regional Sea Convention'', 2.
[299] Ibid, 5.
[300] Ibid.
[301] European Court of Auditors, 'Marine Environment: EU protection is wide but not deep.' Special Report 26 (2020), 28.
[302] Roessger, Claudet and e Costa, 'Turning the tide on protection illusions: The underprotected MPAs of the 'OSPAR Regional Sea Convention'', 7.
[303] Ibid, 6.

management is required to understand what is being protected and if it is being protected effectively.[304]

b. Assessment of OSPAR as a model for transboundary marine conservation

While, as demonstrated in the preceding section, OSPAR has not yet achieved a fully ecologically coherent or connected network of TBMPAs and has challenges with management effectiveness, it can be described as a success in terms of *initiating* regional transboundary conservation. In terms of establishing MPAs in ABNJ, it has been described as the "most ambitious project" thus far.[305] As a result of OSPAR's pioneering efforts and perceived success in this context, regional organizations could have an enhanced role under a new BBNJ treaty. Bearing this in mind, it is worth examining the enabling conditions which have helped OSPAR to succeed in establishing a transboundary network of MPAs, including the world's first network of MPAs in ABNJ. They include the following:

- OSPAR has an **unequivocal legal mandate** to deliver conservation, including the establishment of MPAs in national jurisdiction and beyond (see Sections 3(a) and (b)), which clearly provides an enabling environment for decision makers.[306] This was achieved in part due to the particular regional dynamic in the NEA, which is very much driven by its membership.[307] OSPAR's Contracting Parties are all developed countries within which there is substantial political will and commitment to tackling environmental issues.[308] Of all the European RSCs, OSPAR has the largest group of EU Member States. Complementary legislation and technical guidance at the EU level feeds into the OSPAR MPA network and

[304] OSPAR Commission *Status of the OSPAR Network of Marine Protected Areas in 2019*, 1.
[305] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 156.
[306] Johnson, 'Conserving the Charlie–Gibbs Fracture Zone: one of the world's first high seas marine protected areas', 282.
[307] Ibid, 278.
[308] Wright and others, 'Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14', 36.

vice versa, as discussed in Section 2, and OSPAR has openly expressed its commitment to facilitate the coordinated implementation of the MSFD.[309]

- There is **high degree of cooperation** in the NEA. Long has observed that all the OSPAR coastal States appear committed to promoting shared objectives, which has resulted in greater levels of inter-State cooperation and coordination on difficult law of the sea issues compared to what has been achieved elsewhere.[310] OSPAR has over four decades of experience and has already demonstrated that it can ensure cooperation between its CPs in the areas of monitoring and reducing discharge of hazardous substances, the regulation of offshore oil and gas activity and establishing ecological quality objectives.[311] The cooperation between NEAFC and OSPAR with regard to MPAs in ABNJ was deemed successful largely due to the high degree of trust and cooperation already in existence between the Secretariats of both organizations.[312] This fact that all members of OSPAR (bar Switzerland), are also members of NEAFC and have long standing experience cooperating together on environmental protection in other forums, such as the EU, is clearly a factor in generating such a level of trust.

- The EU, OSPAR and NEAFC also have access to a **common scientific knowledge base** in the NEA via their cooperation with ICES. As explained earlier, the large spatial overlap between the OSPAR, NEAFC and ICES Convention areas has significantly aided the process of cross sectoral cooperation and coordination in the NEA. The overlap in geography and mandate among several of the key regional organizations in the NEA has supported significant cooperation, which has further enabled the creation of a common evidence base

[309] See OSPAR Commission, 'Finding Common Ground: Towards regional coherence in implementing the Marine Strategy Framework Directive in the North East Atlantic region through the work of the OSPAR Commission', 578/2012, 3 and NEAS 2030.
[310] Long, *North East Atlantic and the North Sea*, 670-71.
[311] Wright and others, 'Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14', 36.
[312] Ibid, 56.

and high level of expertise across the NEA region, which naturally provides fertile ground for advancing marine environmental protection.[313]

- The level of **joint environmental assessment** in the NEA is high, which provides a common scientific basis for decision making. The OSPAR Convention requires CPs to cooperate in the monitoring of the marine environment, including the effects of activities and inputs,[314] and the OSPAR Commission has a long track record in organising marine environmental monitoring and publishing environmental assessments, both thematic reports and overall integrated environmental assessments.[315] The OSPAR Quality Status Report (QSR)[316] provides the overarching summary of the environmental state of the OSPAR Maritime Region and its five subregions, and is the primary basis for coordination of national environment assessments.[317] Via the integrated environmental assessments, which underpin the OSPAR Quality Status Reports, the OSPAR Commission has created a high level of information sharing and joint assessment in the North East Atlantic.[318] This aims to ensure coherence between OSPAR CPs themselves as well as those CPs who are EU Member States. EU Member States may also use the QSR for their own reporting purposes.[319] OSPAR is an exception among RSCs in this regard, with most having general environmental assessment obligations that leave the specification of process and content up to CPs.[320] As discussed in Chapter Five, this type of joint environmental assessment helps to create useful baselines for tracking progress against *inter alia* globally agreed targets such as those for MPA coverage.

[313] OSPAR Commission, *Finding Common Ground*, 3.
[314] Annex IV.
[315] OSPAR Commission, *Finding Common Ground*, 5.
[316] https://oap.ospar.org/en/ospar-assessments/quality-status-reports/
[317] OSPAR Commission, *Finding Common Ground*, 5.
[318] Ibid, 2.
[319] https://www.ospar.org/work-areas/cross-cutting-issues/qsr2023
[320] Kristina Gjerde, Glen Wright and Carole Durussel, 'Strengthening high seas governance through enhanced environmental assessment processes: A case study of mesopelagic fisheries and options for a future BBNJ treaty, STRONG High Seas Project (2021), 28.

In terms of challenges, the following points are noteworthy:

- While there is significant overlap between the Member States among many of the ROG mechanisms in the NEA (see Section 2), which has been an enabling element for marine environmental advances in the region, especially through overlapping membership of the EU and OSPAR and NEAFC and OSPAR, there are also gaps in membership whereby the decisions of one organization will not apply to third parties. For example, Russia is the only member of NEAFC that is not a member of OSPAR. Therefore, decisions by OSPAR are not applicable to Russia. This highlights the complexities of multiple international organizations operating in the same region with overlapping geographic areas but **different mandates and memberships** and highlights the essential need for cooperation and coordination of efforts. According to Matz-Lück and Fuchs, the overall contribution of the OSPAR MPA regime to more effective marine environmental protection in the region has been that of coordination and awareness raising.[321] It should be noted that this is not a minor achievement given that cooperation may be the only way forward to raise environmental standards, given the lack of appetite for a global ocean governing authority, as mentioned in Chapter Four.

- **Data deficiency.** Sites are usually selected based on available data; therefore sites that are well studied are more likely to be protected rather than because they are representative of the habitat or biodiversity or threatened by potential adverse effects of human activities.[322] This limitation can be overcome by embracing the precautionary principle, which OSPAR CPs are willing to do,[323] for example, in relation to the Milne Seamount Complex MPA, which had limited site specific information and instead was designated based on inferential information from other similar places.[324] However, it has also been acknowledged that a lack of

[321] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 164.
[322] O'Leary and others, 'The first network of marine protected areas (MPAs) in the high seas: the process, the challenges and where next', 600-601.
[323] Smith and Jabour, 'MPAs in ABNJ: lessons from two high seas regimes', 423.
[324] O'Leary and others, 'The first network of marine protected areas (MPAs) in the high seas: the process, the challenges and where next', 603.

economic activity in the area proposed, aided this approach.[325] Data deficiencies have also been cited as a hamper to establishing whether the OSPAR MPA network is ecologically coherent, as discussed in Section 5(a).

- The establishment of MPAs under the OSPAR Convention reflects the **limitations of the existing international legal framework** (as discussed in Section 3(b)(i)) and the limitations of OSPAR's competence when it comes to management of human activities in MPAs (as discussed in Section 3). Potential extensions of continental shelves have greatly enhanced legal uncertainty around the designation of MPAs in parts of the high seas adjacent to coastal States. Pending clarification of some of these issues by a new BBNJ treaty, the method for dealing with these complexities in the NEA has been enhanced regional cooperation. In fact, it has been argued that the regional State practice developed in the NEA has influenced the evolution of international treaty and customary law in a number of specialist fields, including the creation of new regional institutional structures and procedures for the management of transboundary ocean resources and the protection of the marine environment.[326] As discussed in Section 3(b)(ii), it has been suggested that the example of OSPAR, which operates under a legally binding framework yet utilizes soft law measures to achieve implementation via cooperation with a range of competent sectoral international organizations, is moving towards becoming an international norm, blending hard and soft law.[327] Rochette and others have suggested that given the limits of OSPAR's competence when it comes to regulating human activities, perhaps it would be better viewed as a regional platform for multi-sector cooperation, which would include activities such as "information exchange, cumulative impact assessment, scientific cooperation and marine spatial planning".[328] This line of thinking envisages

[325] Ibid.
[326] Long, *North East Atlantic and the North Sea*, 671.
[327] Johnson, 'Conserving the Charlie–Gibbs Fracture Zone: one of the world's first high seas marine protected areas', 282.
[328] Julien Rochette and others, 'The regional approach to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction' (2014) 49 Marine Policy 109.

OSPAR as more of an overarching platform for States to plan and strategise, rather than an operational actor which implements measures.

- OSPAR has been criticised for not offering a sufficient legal framework for the creation of "effective" MPAs in the region, in particular due to the **lack of a strong compliance and enforcement mechanism**.[329] As discussed throughout this chapter, in practice OSPAR does not deal with enforcement at all, neither with respect to third States, nor regarding OSPAR Contracting Parties, which is arguably a significant impediment to success.[330] As mentioned earlier, finding a pathway to achieve third State compliance is considered as a vital task to ensure the effectiveness of the OSPAR MPA network.[331] With regard to OSPAR's own members, as described in Section 3, OSPAR Decisions and Recommendations are to be adopted mostly by consensus, therefore it is highly unlikely that an enforcement action against a fellow Contracting Party would be voted for, and in cases where a Decision is voted for by a three quarters majority it is only binding on those that have voted for it.[332] Actions for improvement which have been singled out include the need for a management body, resources for management activities including surveillance and enforcement[333] and the creation of an institutional non-compliance mechanism.[334] In its 2030 Strategy, OSPAR claimed that by 2022, it will identify barriers to the effective management of MPAs, and by 2024 take steps to address them appropriately.[335] With regard to MPAs in ABNJ, it has stated that by 2024, it will establish a mechanism to ensure that where CPs are authorising human activities that may conflict with the conservation objectives of those MPAs, these activities will be subjected to an

[329] Ibid.
[330] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 161.
[331] Huang and Vuong, 'Marine Protected Areas in ABNJ versus the Principle of High Seas Freedom: Possible Pathway from the OSPAR Experience', 189.
[332] Article 13(2) OSPAR Convention.
[333] Johnson, 'Conserving the Charlie–Gibbs Fracture Zone: one of the world's first high seas marine protected areas', 279.
[334] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 164.
[335] NEAS 2030, 11.

EIA or SEA.[336] The fact that State parties to OSPAR, the IMO, ISA and NEAFC mostly overlap has been described as a lost opportunity to implement more ambitious protection measures than currently exist.[337] Without any legally binding measures for compliance and enforcement in ABNJ, OSPAR will need long term cooperation agreements with the other regulatory bodies in the region. O Leary and others have also recommended multiparty monitoring, control and surveillance plans.[338]

- In relation to better compliance and enforcement at the national level, this comes down to political and social will. As stated in Section 3(a)(ii), the OSPAR regime is dependent on CPs implementing their regional obligations by means of national and EU law. There are no consequences prescribed if a CP has not implemented national legislation to comply with OSPAR. In contrast, the EU has an enforcement process available to it via infringement proceedings before the Court of Justice.[339]

In terms of the future, OSPAR is aiming to incorporate other effective conservation measures (OECMs) into its network and achieve at least 30% coverage of the maritime area by 2030, while continuing to strive to ensure its MPA network is representative, ecologically coherent and effectively managed to achieve its conservation objectives. [340] At just 6.5% total coverage, not yet ecologically coherent and with allegations of management ineffectiveness, the OSPAR MPA network is still a long way off meeting these goals. It will need to increase the overall network coverage significantly as well as improve levels of protection.[341]

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[336] Ibid.
[337] Matz-Lück and Fuchs, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?', 164.
[338] O'Leary and others, 'The first network of marine protected areas (MPAs) in the high seas: the process, the challenges and where next', 604.
[339] https://ec.europa.eu/info/law/law-making-process/applying-eu-law/infringement-procedure_en#stages-of-an-infringement-procedure
[340] NEAS 2030, 11.
[341] Roessger, Claudet and e Costa, 'Turning the tide on protection illusions: The underprotected MPAs of the 'OSPAR Regional Sea Convention'', 6.

The question of whether the OSPAR model can be replicated elsewhere often arises. Some commentators have described the OSPAR Convention as a 'model for cooperation and coordination' calling for it to be replicated in other regions.[342] However, as this chapter has indicated, OSPAR is not perfect and has significant work to do in order to achieve ecological coherence and a higher quality of management. The answer of whether it can be emulated by other regions will also depend on a number of factors, including the socio-economic development of relevant States, levels of political integration in the region and existing levels of cooperation in a designated region.[343] The next chapter will examine a model of non-binding regional cooperation in the Eastern Tropical Pacific, which does not benefit from an overarching legally binding structure, such as an RSC and assess what lessons can be applied from the OSPAR experience and vice versa.

[342] Emily Marie Barritt and Jorge E Viñuales, 'Legal Scan: A Conservation Agenda for Biodiversity Beyond National Jurisdictions', *Cambridge Centre for Environment, Energy and Natural Resource Governance, University of Cambridge Working Paper* (2016), 54.
[343] Huang and Vuong, 'Marine Protected Areas in ABNJ versus the Principle of High Seas Freedom: Possible Pathway from the OSPAR Experience', 193; Molenaar and Elferink, 'Marine protected areas in areas beyond national jurisdiction-the pioneering efforts under the OSPAR convention', 20.

Chapter 7 Case Study II: Regional Cooperation for the Establishment and Management of a Transboundary Network of Marine Protected Areas in the Eastern Tropical Pacific

This chapter is a case study of a non-binding multilateral regional cooperation agreement between four States in the Eastern Tropical Pacific (ETP), which aims to create Latin America's first transboundary network of MPAs across four national jurisdictions and potentially a portion of the high seas. This chapter will present the challenges posed to this regional cooperation initiative by the fragmented state of regional ocean governance (ROG) in the ETP and assess what lessons can be applied here from the OSPAR experience.

1. The Eastern Tropical Pacific Ocean

The Eastern Tropical Pacific Ocean (ETP) extends from the Gulf of California to the north of Peru, covering 21 million square kilometres, which includes international waters and the national waters of 12 states.[1] The ETP is connected by a series of currents that provide a diverse and changing set of oceanographic conditions throughout the region and high levels of productivity and biodiversity.[2] It is considered one of the most productive oceans in the world with a biological richness that provides significant ecosystem services, including carbon storage, fisheries and tourism.[3] The region is characterized by its high biological diversity and regional endemism, including some of the last large concentrations of sharks globally[4] and the second most important nesting colony for green sea-turtles.[5] In recognition of the exceptional levels of biodiversity and extraordinary presence of endemic, native and migratory species, several world-

[1] Mark D Spalding and others, 'Marine ecoregions of the world: a bioregionalization of coastal and shelf areas' (2007) 57 BioScience 573, 576- 579; Summer L Martin, Lisa T Ballance and Theodore Groves, 'An ecosystem services perspective for the oceanic Eastern Tropical Pacific: Commercial fisheries, carbon storage, recreational fishing, and biodiversity' (2016) 3 Frontiers in Marine Science 50, 3.
[2] PC Fiedler and MF Lavín, 'A review of eastern tropical Pacific oceanography' (2006) 69 Prog Oceanogr 94.
[3] Martin, Ballance and Groves, 'An ecosystem services perspective for the oceanic Eastern Tropical Pacific: Commercial fisheries, carbon storage, recreational fishing, and biodiversity', 13.
[4] Alex Hearn and others, 'Hotspots within hotspots? Hammerhead shark movements around Wolf Island, Galapagos Marine Reserve' (2010) 157 Marine Biology 1899.
[5] Bryan P. Wallace and others, 'Global conservation priorities for marine turtles' (2011) 6 PloS one e24510.

renowned MPAs have been created in the region, including Galapagos (Ecuador), Cocos (Costa Rica), Coiba (Panama), Malpelo and Gorgona (Colombia). All of these MPAs, except for Gorgona, are World Heritage Sites,[6] two are Ramsar Sites (Galapagos and Cocos)[7] and the International Maritime Organization (IMO) has designated Galapagos and Malpelo as Particularly Sensitive Sea Areas (PSSAs).[8] Large numbers of migratory species, many of which travel between the MPAs, along with larvae dispersal, clearly demonstrate ecological connectivity within the region.[9] In fact, the area which encompasses these MPAs has been recognised as an Ecologically and Biologically Significant Area (EBSA) by parties to the Convention on Biological Diversity (CBD), on the basis that *inter alia* "the geomorphological structures of the area are biologically and ecologically significant and are important for the connectivity of species on their migratory routes and at other times of their life cycles (e.g., mating, birth, feeding. The area plays an important role for populations of hammerhead sharks, humpback whales, leatherback and Ridley turtles, and birds, such as cormorants, boobies and pelicans.).[10] EBSA status is usually accorded to areas deemed worthy of increased protection and management.[11]

Despite their immense ecological value, marine ecosystems in the ETP are becoming degraded due to the steady increase of anthropogenic pressures. Climate change,[12] illegal,

[6] https://whc.unesco.org/en/list/
[7] https://www.ramsar.org/sites/default/files/documents/library/sitelist.pdf
[8] http://www.imo.org/en/MediaCentre/HotTopics/PSSA/Pages/default.aspx
[9] Mauricio Romero-Torres and others, 'The Eastern Tropical Pacific coral population connectivity and the role of the Eastern Pacific Barrier' (2018) 8 Scientific reports 9354; Jorge Cortés and others, 'Marine biodiversity of Eastern Tropical Pacific coral reefs', *Coral reefs of the Eastern tropical Pacific* (Springer 2017); Hearn and others, 'Hotspots within hotspots? hammerhead shark movements around wolf island, galapagos marine reserve'.
[10] CBD Decision XII 22, Marine and coastal biodiversity: ecologically and biologically significant marine areas (EBSAs) (2012). UNEP/CBD/COP/DEC/XII/22, 18.
[11] Ben Boteler and others, 'Borderless conservation: integrating connectivity into high seas conservation efforts for the Salas y Gómez and Nazca ridges' (2022) *Frontiers in Marine Science*, forthcoming. On EBSAs, see also Chapter Four.
[12] Mauricio Castrejón and Anthony Charles, 'Human and climatic drivers affect spatial fishing patterns in a multiple-use marine protected area: The Galapagos Marine Reserve' (2020) 15 PloS one e0228094; Ellen Willis-Norton and others, 'Climate change impacts on leatherback turtle pelagic habitat in the Southeast Pacific' (2015) 113 Deep Sea Research Part II: Topical Studies in Oceanography 260.

unreported and unregulated fishing,[13] marine invasions,[14] pollution,[15] increasing tourism, coastal development and population growth[16] are among the well-documented problems posing a critical, growing threat to livelihoods, ecosystem sustainability and functioning of coastal zones. Overfishing, in particular, is a significant threat to migratory species in the ETP. It is generally accepted that overfishing is the primary cause of marine defaunation globally[17] and the principal cause for the decline of many migratory marine species in the ETP.[18] As well as intense fishing pressure from national vessels,[19] the high seas areas in this region have been subject to intense fishing effort in recent years by foreign flagged fleets, often loitering adjacent to or entering a marine protected area,[20] a trend which is likely to increase in the future. The IPCC has identified the ETP as an area which is facing complex fishing governance challenges due to climate change, given that fisheries productivity may be less affected in certain areas due to the presence of colder oceanic currents. [21] Climate change is exacerbating all other challenges facing the region. The marine and coastal ecosystems of the MPAs in the ETP are particularly vulnerable to climate change impacts. Warming surface waters, particularly during intense El Niño

[13] Laurenne Schiller and others, 'The demise of Darwin's fishes: evidence of fishing down and illegal shark finning in the Galápagos Islands' (2015) 25 Aquatic conservation 431; Cristina Castro and others, 'Marine mammals used as bait for improvised fish aggregating devices in marine waters of Ecuador, eastern tropical Pacific' (2020) 41 Endangered Species Research 289.
[14] James T Carlton, Inti Keith and Gregory M Ruiz, 'Assessing marine bioinvasions in the Galápagos Islands: implications for conservation biology and marine protected areas' (2019) 14 Aquatic Invasions.
[15] The World Wildlife Fund (WWF) cites the main sources of pollution in the ETP as municipal waste (untreated wastewater and garbage), agriculture run-off, discharges from vessels and port operations, industrial pollution from industry and oil operations and plastics. See https://www.wwfca.org/en/the_eastern_tropical_pacific_ocean_/
[16] José Ângelo Guerreiro da Silva and others, 'Transboundary MPAs: a challenge for the twenty-first century' (2012) 23 Management of Environmental Quality: An International Journal 328, 334; Jesse G. Hastings and others, 'MMAS in Eastern Tropical Pacific Seascape' (2015) 43 Coastal Management 172.
[17] Nathan Pacoureau and others, 'Half a century of global decline in oceanic sharks and rays' (2021) 589 Nature 567, which found that since 1970 the global abundance of oceanic sharks and rays declined by 71% owing to an 18-fold increase in relative fishing pressure.
[18] Cesar Peñaherrera-Palma and others, 'Justificación biológica para la creación de la MigraVía Coco-Galápagos' (2018) MigraMar y Pontificia Universidad Católica del Ecuador Sede Manabí Portoviejo, Manabí, Ecuador, 71.
[19] The Economist 'Piscine plunder. Ecuador, a victim of illegal fishing is also a culprit', 21 November 2020, available at www.economist.com/the-americas/2020/11/21/ecuador-a-victim-of-illegal-fishing-is-also-a-culprit.
[20] Juan José Alava and Fabrizio Paladines, 'Illegal fishing on the Galápagos high seas' (2017) 357 Science 1362.
[21] Alex Hearn and others, *A Proposal for Marine Spatial Planning of Ecuador's Exclusive Economic Zone around the Galapagos Marine Reserve.* Technical Document (2021), 10.

events, result in lower primary production and a general decline in biological activity.[22] During the past decades, the frequency and severity of El Niño events have increased, and climatic models have shown that this tendency will continue to worsen within the ETP region under current rates of global warming.[23] Weak governance has also been cited as an overarching problem.[24] Conservation efforts in the region have struggled due to lack of coordination among governments, civil society and academia, weak management of protected areas, limited capacity for monitoring and enforcement, limited control over the sources of marine pollution, lack of data or lack of access to data, limited public participation, lack of public awareness regarding the value of ecosystem services in the region as well as inadequate resources and funding.[25]

The cumulative nature of the pressures outlined above and the lack of an overarching cohesive governance framework to protect transboundary marine ecosystems, eventually led the governments of Ecuador, Costa Rica, Colombia and Panama to create a regional cooperation mechanism in 2004, known as the Eastern Tropical Pacific Marine Corridor (CMAR),[26] in order to ensure the sustainability of marine ecosystems in the ETP region. While the corridor is not yet formally designated, the initiative is regarded by some as a leading example of regional cooperation for the creation of a network of MPAs.[27] The emergence and creation of CMAR will be discussed in more detail in Section 3. First, the existing normative framework for regional ocean governance in the region will be analysed.

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[22] Yanyun Liu and others, 'Dynamic downscaling of the impact of climate change on the ocean circulation in the Galápagos Archipelago' (2013) 2013 Advances in Meteorology.
[23] Wenju Cai and others, 'Increased variability of eastern Pacific El Niño under greenhouse warming' (2018) 564 Nature 201.
[24] Corredor Marino del Pacífico Este (CMAR) *Action Plan 2019-2024*. San José, Costa Rica, 16; WildAid *An Analysis of the Law Enforcement Chain in the Eastern Tropical Pacific Seascape* (2010). Available at https://www.issuelab.org/resources/26036/26036.pdf. See also https://news.mongabay.com/2019/04/weak-governance-undermines-south-americas-ocean-ecosystems
[25] Randall Arauz and others *Science for the Conservation of Migratory Marine Species in the Eastern Pacific* (Migramar, 2017), 9; CMAR *Action Plan 2019-2024*, 16.
[26] CMAR is the Spanish acronym and refers to Corredor Marino del Pacifico Este Tropical.
[27] David E Johnson and others, 'Building the regional perspective: platforms for success' (2014) 24 Aquatic Conservation: Marine and Freshwater Ecosystems 75, 80.

2. Regional Ocean Governance in the Eastern Tropical Pacific

One of CMAR's original goals was to establish an adequate regional framework to facilitate the development and management of the marine corridor, in a manner compatible with the politics and legislation of the four member States and any applicable international conventions and agreements.[28] CMAR cites several international agreements as legal justification for its creation.[29] Specific reference is made to the International Convention for the Regulation of Whaling (ICRW),[30] the Ramsar Convention,[31] UNESCO World Heritage Convention,[32] Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES),[33] the United Nations Convention on the Law of the Sea (UNCLOS)[34] and the Convention on Biological Diversity (CBD).[35] Other international agreements such as the Inter-American Convention for Protection and Conservation of Sea Turtles[36] and the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere[37] are also mentioned.[38] While the influence of international conventions is evident in terms of inspiring collective action at the regional level, a comprehensive, overarching regional ocean governance (ROG) framework, such as OSPAR, is lacking in the ETP. Rather as will be demonstrated below, the existing governance framework in the region is fragmented with differing membership compositions, varying mandates and geographic coverage, and limited cross sectoral cooperation.

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[28] Corredor Marino del Pacífico Este (CMAR) *Action Plan 2005*. San José, Costa Rica, 4.
[29] Corredor Marino del Pacífico Este (CMAR) 'Corredor marino de conservación y desarrollo sostenible del pacifico este tropical entre las islas Coco – Galápagos – Malpelo – Coiba – Gorgona. Antecedentes y consideraciones técnicas para su definición.' Technical Document, San José, Costa Rica, March 2004, 9-12.
[30] The International Convention on the Regulation of Whaling (1946) 161 UNTS 72
[31] Convention on Wetlands of International Importance especially as Waterfowl Habitat (1971) 996 UNTS 245
[32] Convention Concerning the Protection of the World Culture and Natural Heritage (1972) 1037 UNTS 151.
[33] Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973) 983 UNTS 243.
[34] United Nations Convention on the Law of the Sea (1982) 1833 UNTS 397.
[35] Convention on Biological Diversity (1992) 1760 UNTS 79.
[36] Inter-American Convention for the Protection and Conservation of Sea Turtles (1997) 78 MARINE TURTLE NEWSLETTER 13.
[37] Convention on Nature Protection and Wild Life Preservation in the Western Hemisphere (1940), 56 Stat. 1354, 161 UNTS 193.
[38] CMAR Technical Document 2004, 9-12.

With respect to the United Nations Regional Seas Program (RSP), there is no RSP covering the ETP. While the Antigua Convention for the North East Pacific,[39] was signed in 2002 by Panama, Costa Rica, Colombia and several other Central American States,[40] it has not yet entered into force.[41] The geographic area covered by the Convention extends from the south of Colombia to the north of Mexico.[42] Therefore, Ecuador is not a Party. The principal purpose of the Convention is to establish a regional cooperation framework to encourage and facilitate the sustainable development of marine and coastal resources of the Northeast Pacific.[43] State parties approved an Action Plan in 2002 detailing how they planned to improve the environment of the North East Pacific,[44] however it is not yet supported by legally binding instruments.

The Lima Convention for the South-East Pacific[45] counts Ecuador, Colombia and Panama as State parties but not Costa Rica. It is primarily focused on the prevention, reduction and control of pollution and the environmental management of natural resources.[46] It is an associated RSP which means that it is not directly administered by UNEP.[47] Rather, the Executive Secretariat of the Lima Convention is held by the Permanent Commission for the South Pacific (CPPS),[48] an intergovernmental body, classified as an RFB by the Food and Agriculture Organization of the United Nations (FAO).[49] It was originally established in 1952 by Chile, Peru and Ecuador to fight illegal fishing, with Colombia

[39] Convention for Cooperation in the Protection and Sustainable Development of the Marine and Coastal Environment of the Northeast Pacific. Adopted on 18 February 2002. (Not yet in force). Available online at: www.ecolex.org (TRE-001350). Known as the Antigua Convention.
[40] Mexico, El Salvador, Honduras, Nicaragua and Guatemala.
[41] The Convention needs at least four country ratifications to come into force and only two countries (Guatemala and Panama) have ratified it thus far. www.unenvironment.org/explore-topics/oceans-seas/what-we-do/working-regional-seas/regional-seas-programmes/north-east-0
[42] Plan of Action for the Protection and Sustainable Development of the Marine and Coastal Areas of the North East Pacific 2002, para. 1.
[43] Article 1, Antigua Convention for the North East Pacific.
[44] Plan of Action North East Pacific 2002.
[45] Convention for the Protection of the Marine Environment and Coastal Area of the South-East Pacific (1981) available at www.ecolex.org (TRE-000741). Known as the Lima Convention.
[46] Article 3.1 Lima Convention.
[47] When UNEP administers a RSP, the Secretariat, administration of the Trust Fund and financial and administrative services are provided by UNEP. However, in an associated RSP, the financial and budgetary services are managed by the programme itself or hosting regional organization. See Chapter Five.
[48] CPPS is the Spanish acronym for Comisión Permanente del Pacifico Sur. http://www.cpps-int.org/index.php/home/cpps-historia.
[49] www.fao.org/fishery/rfb/cpps/en

joining in 1979.[50] CPPS became the Executive Secretariat for the Lima Convention in 1981 and thus effectively carries out a dual role. CPPS plays a key coordinating role in the region. One of its main objectives is to coordinate the maritime policies of its member states in its area of competence in order to adopt united regional positions at international fora.[51] It also plays a key linking role between marine scientific research and regional policy.[52]

In terms of geographic scope, the Lima Convention applies to the territorial seas and EEZs of participating States and has a narrow mandate in the adjacent high seas, restricted to pollution.[53] However, State parties to both CPPS and the Lima Convention have expressed their desire to expand their remit in ABNJ.[54] As discussed in Chapter Five, expansion of regional coverage into the high seas has been encouraged by the United Nations (UN)[55] given that only five RSCs currently have jurisdiction in ABNJ.[56] In relation to MPAs, it is important to note that CPPS has an advisory mandate only and no management authority[57] which means it does not yet have the power to establish such legally binding conservation measures. However, in 1989 State parties to the Lima Convention adopted a Protocol for MPAs in the South East Pacific in which they committed to establishing more protected areas within their national jurisdictions.[58] This protocol led to the creation of a regional network of MPAs in the South East Pacific, which aims to strengthen the management of existing MPAs in the region and expand the

[50] Comisión Permanente del Pacifico Sur (CPPS) *Reglamento de la Comisión Permanente del Pacifico Sur*. (Guayaquil, Ecuador, 2012), Article 1.
[51] Ibid, Article 3.
[52] UNEP-WCMC, 'Governance of areas beyond national jurisdiction for biodiversity conservation and sustainable use: Institutional arrangements and cross-sectoral cooperation in the Western Indian Ocean and the South East Pacific' (2017) Cambridge (UK): UN Environment World Conservation Monitoring Centre, 75.
[53] Article 1, Lima Convention 1981.
[54] Comisión Permanente del Pacifico Sur (CPPS) *Framework Agreement for the Conservation of Living Resources on the High Seas of the South Pacific (Galapagos Agreement*), Galapagos Islands, Ecuador, 14 August 2000. (Not yet in force); Comisión Permanente del Pacifico Sur (CPPS) *Commitment of Galapagos for the XXI Century.* VIII Meeting of Ministers of Foreign Affairs of the Permanent Commission for the South Pacific -CPPS- Puerto Ayora, Galapagos, Ecuador, August 17th, 2012.
[55] United Nations Environment Assembly of the United Nations Environment Programme, UNEP/EA.2/Res.10 (2016), para. 1.
[56] See further Chapter Five.
[57] UNEP-WCMC, *Governance of areas beyond national jurisdiction*, 75.
[58] Article II, Protocol for the Conservation and Administration of Marine and Coastal Protected Areas in the South East Pacific 1989. Paipa, 21 September 1989, in force 24 January 1995.

network based on scientific information and in line with international law.[59] The network includes the MPAs of Galapagos, Malpelo, Gorgona and Coiba, which form the nucleus of CMAR.

The CPPS could be considered weak from a rule of law perspective, given that it has no management authority.[60] However, it has a lot of support in the region as a cross sectoral coordinating mechanism.[61] For example, it has signed bilateral cooperation agreements for the purposes of improving conservation with competent RFMOs in the region, the Inter-American Tropical Tuna Commission (IATTC),[62] of which all four CMAR States are members, and the South Pacific RFMO,[63] of which Ecuador is a member and Panama is a non-contracting Party. Areas of cooperation between the CPPS and the SPRFMO are focused on information exchange, specifically sharing of scientific data, meeting reports and other documents or publications considered to be of mutual interest. Specific mention is made of data exchange in relation to *inter alia* illegal, unreported and unregulated (IUU) fishing activity and bycatch.[64]

Given the importance of the fishing sector in the region, this type of cooperation is a positive step forward, especially given that the RFMOs have a management mandate and the power to establish legally binding conservation and management measures.[65] However, in general, cooperation between the key actors within this region is not well

[59] Comisión Permanente del Pacifico Sur (CPPS) Secretaría Ejecutiva del Plan de Acción para la Protección del Medio Marino y Áreas Costeras del Pacífico Sudeste. Red regional de áreas costeras y marinas protegidas del pacífico sudeste. Guayaquil, Ecuador, 2010. See also Carole Durussel, Eulogio Soto Oyarzún and Osvaldo Urrutia, 'Strengthening the Legal and Institutional Frame-work of the Southeast Pacific: Focus on the BBNJ Package Elements' (2017) 32 The International Journal of Marine and Coastal Law 635, 651-652.
[60] UNEP-WCMC, *Governance of areas beyond national jurisdiction*, 75.
[61] Ibid, 79.
[62] Memorándum de Entendimiento y Cooperación entre la Comisión Permanente del Pacifico Sur (CPPS) y la Comisión Interamericana del Atún Tropical (CIAT) 2015. Available at https://www.iattc.org/IATTCDocumentsENG.htm.
[63] SPRFMO, Memorandum of Understanding Between the Permanent Commission of the South Pacific (CPPS) and the South Pacific Regional Fisheries Management Organization (SPRFMO), signed 13 March 2019. Available at https: //www.sprfmo.int/cooperation/mous.
[64] Ibid, Clause 2 (iii)(b)(c).
[65] For example, the IATTC has established time and spatial fishery closures for several types of tuna fisheries as well as conservation and management measures for bluefin tuna as well as some shark species, rays, seabirds and sea turtles in its Convention Area. The SPRFMO has *inter alia* established bottom fishing closures for Vulnerable Marine Ecosystems. See further Durussel, Oyarzún and Urrutia, 'Strengthening the Legal and Institutional Frame-work of the Southeast Pacific: Focus on the BBNJ Package Elements', 653.

developed and enthusiasm for enhanced collaboration is varied. For example, the Memorandum of Understanding (MoU) between CPPS and IATTC expired in 2020 and cooperation efforts have since stalled.[66] The IATTC has previously expressed concerns that cross-sectoral area-based planning initiatives may compromise its ability to adopt a flexible approach to species protection.[67] Given that fishing is a fundamentally important socio-economic activity in the region, there has been a reluctance by some authorities to commit to sharing data and information on those resources.[68] Analysts say more efforts are needed with regard to cross sectoral cooperation in the region. A recent report recommended the adoption of a tripartite MoU agreement between the CPPS, IATTC and SPRFMO for the purposes of formalizing cross sectoral cooperation on data collection, data analysis, joint monitoring and enforcement actions in the South-East Pacific.[69] Such exchange of information would significantly assist with contributing to a common scientific knowledge base in the region.

A significant coastal part of the ETP region, including the coastal waters of the CMAR states, is also covered by the Pacific Central American Large Marine Ecosystem (LME),[70] however it has not interacted with other governance mechanisms in the region, including CMAR.[71] While LMEs are considered as having a solid ecological basis, they have been criticized for weak governance components, especially in developing countries.[72]

3. The Eastern Tropical Pacific Marine Corridor (CMAR)

The genesis for CMAR began in 1997 as a cooperation agreement between Costa Rican and Ecuadorian environmental authorities with the goal of improving coordination

[66] Sarah Ryan Enright, Ricardo Meneses-Orellana and Inti Keith, 'The Eastern Tropical Pacific Marine Corridor (CMAR): The Emergence of a Voluntary Regional Cooperation Mechanism for the Conservation and Sustainable Use of Marine Biodiversity Within a Fragmented Regional Ocean Governance Landscape' (2021) 8 Frontiers in Marine Science 569, 8.
[67] UNEP-WCMC, *Governance of areas beyond national jurisdiction*, 83.
[68] Ibid, 81.
[69] Klaudija Cremers, Glen Wright and Julian Rochette, 'Options for Strengthening Monitoring, Control and Surveillance of Human Activities in the Southeast Pacific Region' (2020) STRONG High Seas Project, 40.
[70] https://www.marineregions.org/gazetteer.php?p=details&id=8567.
[71] Enright and others 'The Eastern Tropical Pacific Marine Corridor (CMAR)', 8.
[72] Robert Bensted-Smith and Hugh Kirkman, 'Comparison of approaches to management of large marine areas' (2010) Fauna & Flora International, Cambridge, UK, 3.

between Cocos and Galapagos in light of their significant ecological connectivity.[73] In 2001, a Presidential Declaration was signed between Costa Rica and Ecuador, which welcomed a proposal by a group of intergovernmental and non-governmental organizations (NGOs)[74] for the creation of a marine corridor between Cocos and Galapagos. This statement of presidential intent has been cited as the beginning of the official process at governmental level which led to the establishment of CMAR.[75]

In 2002, during a regional ministerial meeting in Colombia, the initial proposal to create a corridor between Cocos and Galapagos was extended to include the islands of Malpelo, Gorgona and Coiba on the basis that it made strategic political sense to take a regional approach to environmental management.[76] The amplified proposal was then presented at the 2002 World Summit on Sustainable Development in Johannesburg as a strategic alliance between Ecuador, Costa Rica, Colombia and Panama with the support of intergovernmental organizations and NGOs.[77]

In 2004, CMAR was formally established by the San Jose Declaration (SJD), a non-binding agreement which sets out the objectives of CMAR and establishes a regional cooperation mechanism for its management.[78] The 2019-2024 Action Plan for CMAR defines it as "a regional initiative for conservation and sustainable use which seeks, via an ecosystem approach, the adequate management of the biodiversity, marine and coastal resources of the Eastern Tropical Pacific, through regional governmental strategies, jointly supported by civil society, non-governmental organizations and international cooperation, with the MPAs of Cocos, Galapagos, Malpelo, Gorgona and Coiba considered core areas."[79] The Action Plan goes on to outline a vision for CMAR which is the achievement of effective governance and participation at a regional scale, with the

[73] CMAR *Action Plan* 2005, 1. See further http://cmarpacifico.org/quienes-somos/que-es-el-cmar/como-comenzo-gestarse-cmar
[74] United Nations Environment Program (UNEP), the International Union for the Conservation of Nature (IUCN) and Conservation International (CI).
[75] CMAR *Action Plan* 2019-2024, 7.
[76] Ibid, 8.
[77] United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Development Program (UNDP), IUCN and CI. CMAR Technical Document 2004, 6.
[78] Declaración de San José sobre el corredor marino de Conservación del Pacifico este Tropical Entre las Islas Coco – Galápagos – Malpelo – Coiba – Gorgona, 2 April 2004 (San Jose Declaration).
[79] CMAR *Action Plan* 2019-2024, 8.

MPAs as core areas of conservation.[80] In close alignment with its vision is CMAR's stated objective which is to achieve conservation and promote sustainable use of biological diversity in the ETP region, based on the interests and priorities of its member States, via the establishment of regional governmental strategies supported by civil society, NGOs and international cooperation.[81] Other specific objectives include improving and consolidating the protection and management of the core MPAs, promoting responsible tourism and encouraging the participation of all sectors and stakeholders involved in the management of CMAR.[82] The guiding principles of CMAR are equity, sovereignty, precaution, transparency and adaptive management.[83]

Figure 7.1 Proposed Eastern Tropical Pacific Marine Corridor (CMAR)[84]



[80] Ibid, 9.
[81] San Jose Declaration 2004, 3-4.
[82] http://cmarpacifico.org/quienes-somos/que-es-el-cmar/objetivos-especificos
[83] CMAR *Action Plan* 2019-2024, 9.
[84] This map has been created for illustrative purposes only and is based on the map available on the CMAR website at http://cmarpacifico.org/donde-trabajamos/pacifico-este-tropical. The official geographic delimitation of CMAR remains pending.

a. The Regional Cooperation Mechanism

In order to achieve its goals, the SJD provides for the establishment of a regional mechanism, made up of political and technical components, which complement each other. The political element consists of a Regional Ministerial Committee (RMC) which is made up of the Environment Ministers of each State.[85] This is the main decision-making body of CMAR.[86] It issues guidelines and supports the process of implementation politically in accordance with the conservation priorities for CMAR, the policies of each participating State and the relevant international framework.[87] The RMC meets once a year[88] and has a 'Pro Tempore' Presidency, which rotates every three years between the four participating States.[89] The RMC is advised by each State's Foreign Ministry with respect to matters of international relations between the four States.[90]

The technical component of CMAR comprises of a Regional Technical Committee (RTC), which is responsible for defining the actions needed to implement CMAR.[91] It acts as the advisory body to the RMC and is made up of a delegate (also known as a focal point) of each State's Ministry of Environment,[92] who is often a Director of one of the core MPAs. Currently, the delegates are the Vice Minister for Water and Seas, Costa Rica, the Director of the Galapagos National Park, Ecuador, the Director of National Natural Parks, Colombia and the Director of Coasts and Seas, Panama.[93] The RTC meets twice a year; in terms of decision making, each State has one vote, yet all decisions are adopted by consensus.[94] It is supported by a 'Pro-Tempore' Secretariat, which rotates between States in conjunction with the Presidency.[95] The Secretariat is responsible for the administrative and financial management of CMAR and coordinating cooperation

[85] San Jose Declaration 2004, para. 4.a.
[86] CMAR *Action Plan* 2019-2024, 10.
[87] San Jose Declaration 2004, para. 4.a.
[88] CMAR Technical Document 2004, 29.
[89] CMAR *Action Plan* 2019-2024, 10.
[90] Ibid.
[91] San Jose Declaration 2004, para. 4.b.
[92] CMAR *Action Plan* 2019-2024, 10.
[93] http://cmarpacifico.org/quienes-somos/estructura-organizacional/comite-tecnico-regional
[94] CMAR Technical Document 2004, 30.
[95] CMAR *Action Plan* 2019-2024, 10.

between the four participating States and any involved international organizations and NGOs.[96]

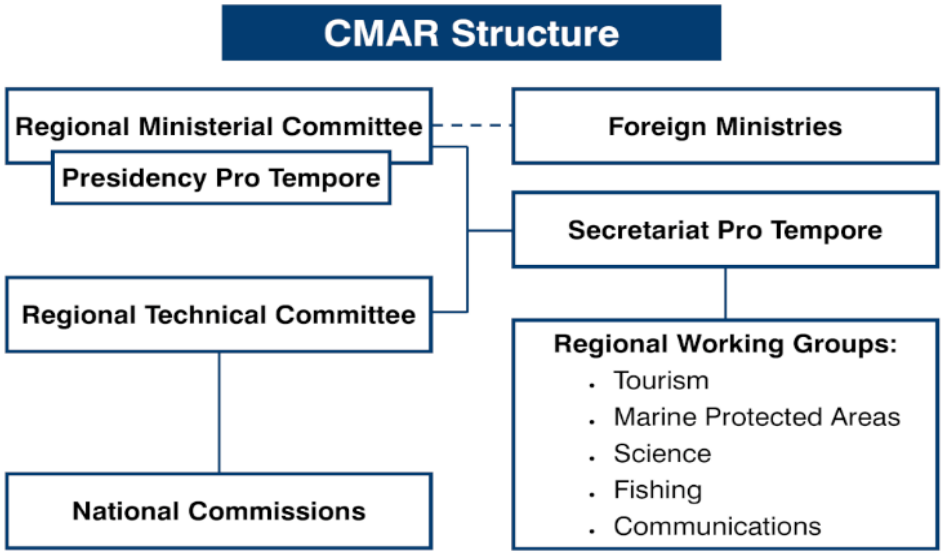
The structure of CMAR also provides for Regional Working Groups, which are made up of experts representing key thematic areas identified as priorities for the conservation of the biodiversity of the region: Tourism, MPAs, Science, Fisheries and Communications.[97] These groups provide input and advice to CMAR and are made up of representatives from government institutions, the private sector, NGOs, research and academia.[98] Each group is led by a coordinator and works with the Secretariat to push forward technical matters such as the creation and joint management of projects for CMAR.[99] For example, the Science Working Group aims to create alliances and work together with other organizations to generate knowledge to assess the actual status of biodiversity in CMAR.[100] The MPA Working Group is a platform for the managers of the core MPAs to exchange information and access training programs and capacity building.[101] The Fisheries Working Group counts on the participation of the four fishing authorities in CMAR States and seeks to obtain and exchange information on the state of biological resources in the region as well as strengthen institutional capacity to generate dynamics of sustainable use.[102] The Science and MPA Working Groups have had the most impact,[103] while the Fisheries Working Group has experienced difficulties due to a lack of communication between the fishing authorities in the different CMAR States.[104] This is likely due to the fact that most fishing going in CMAR waters is by the member states themselves.[105]

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[96] Ibid. http://cmarpacifico.org/quienes-somos/estructura-organizacional/secretaria-pro-tempore
[97] CMAR *Action Plan* 2019-2024, 10.
[98] For more detail on what each group does, see http://cmarpacifico.org/quienes-somos/estructura-organizacional/comite-asesor-tecnico
[99] CMAR *Action Plan* 2019-2024, 10.
[100] http://cmarpacifico.org/quienes-somos/estructura-organizacional/comite-asesor-tecnico
[101] Ibid.
[102] Ibid.
[103] Examples of recent projects within the Science and MPA Working Groups include addressing plastic pollution in the ETP; monitoring of pelagic migratory species and marine invasive species in the ETP and working towards standardizing methodologies. See Enright and others, 'The Eastern Tropical Pacific Marine Corridor', 5.
[104] Government of Panama. *CMAR Action Plan 2019-2024, State of the Art*. June 2022. Executive Summary.
[105] Ibid.

At the national level, multisectoral and interinstitutional National Commissions are provided for in order to deal with any CMAR related matters in a national context, which are to be convened by the focal point in each State.[106] Each State is responsible for forming its own National Commission and establishing its functions and rules.[107] The purpose of the National Commissions is to ensure the involvement of different sectors, for example, fisheries institutes, tourism authorities, government ministries dealing with the environment and agriculture, biodiversity, forestry, ecosystems, water resources and the Naval and Defence forces.[108] To date, only Colombia has officially established a National Commission, which has been in operation since 2012.[109] Costa Rica and Panama are currently in the process of forming their National Commissions by identifying appropriate actors and whether there is already an established organ which could assume this function, while Ecuador has not yet begun a process.[110]

Figure 7.2 Structure of CMAR[111]



[106] CMAR *Action Plan* 2019-2024, 10.
[107] http://cmarpacifico.org/quienes-somos/estructura-organizacional/comite-asesor-tecnico
[108] CMAR *Action Plan* 2019-2024, 10.
[109] Ibid.
[110] Enright and others, 'The Eastern Tropical Pacific Marine Corridor (CMAR)', 5.
[111] This diagram is based on the structure presented in the CMAR *Action Plan* 2019-2024, 11. See also http://cmarpacifico.org/quienes-somos/estructura-organizacional/estructura-organizacional

b. Governance Challenges

MPA managers within CMAR territories have identified several limiting factors from a governance perspective, including overlapping or interfering jurisdiction between authorities, lack of coordination between authorities, lack of resources, lack of political will regarding conservation and institutional weakness in the government environmental sector.[112] While these are issues impeding effective ocean and coastal management more generally in CMAR member States, the following discussion will focus on several specific challenges faced by the marine corridor itself.

(i) Lack of a legally binding agreement

CMAR is a voluntary, political initiative between four States and therefore not legally binding.[113] As mentioned in Chapter Two, voluntary commitments are becoming an increasingly popular tool in ocean sustainability[114] and are considered particularly useful in the context transboundary governance, where competing sovereign interests can delay the negotiation of intergovernmental agreements.[115] As a political initiative, CMAR offers the possibility to harmonize national positions in the region with respect to marine environmental protection. On the other hand, the lack of any binding force has significant implications for compliance and enforcement. Voluntary commitments are often critiqued for lacking appropriate monitoring and evaluation strategies and not providing sufficient evaluation of their own effectiveness.[116] The lack of a legally binding agreement also implies no devoted funding mechanism, which obviously impacts on critical issues such as institutional infrastructure, implementation and capacity for monitoring and enforcement.

At a 2004 CMAR Regional Ministerial meeting, it was decided that the Secretariat would be funded by support from other interested governments, international organizations and

[112] Wild Aid *An Analysis of the Law Enforcement Chain in the ETP Seascape*, 4 and Cremers and others, 'Options for Strengthening Monitoring, Control and Surveillance of Human Activities in the Southeast Pacific Region', 11.
[113] CMAR Technical Document 2004, 29.
[114] Barbara Neumann and Sebastian Unger 'From voluntary commitments to ocean sustainability.' (2019) *Science* 363, 35–36.
[115] Michelle Voyer and others 'The role of voluntary commitments in realizing the promise of the Blue Economy.' (2021) *Global Environmental Change* 71: 102372, 5.
[116] Ibid, 2.

NGOs,[117] creating circumstances which have not been conducive to financial sustainability. The Secretariat does not yet have a permanent physical infrastructure and currently rotates between each State every three years, concurrently with the Presidency. The State that exercises the Presidency covers the cost of operating the Secretariat with funds that are provided by that government's budget or via international cooperation.[118] Financial sustainability is a chief concern in CMAR's current Action Plan. Coordination between four countries and multiple organizations is resource intensive in addition to the many legal and institutional challenges involved in managing shared biological resources.[119] In acknowledgment of the weaknesses inherent in the current non-binding model, the Action Plan for 2019–2024 recommends evaluating the possibilities for transforming CMAR into a legally binding agreement.[120] One of the key challenges in converting CMAR into a legally binding agreement is the fact that Colombia has not yet ratified UNCLOS.[121] As explained in Chapter Three, UNCLOS and the CBD provide the legal basis at the global level for the establishment of MPAs and therefore are a critical underlying supporting element in any legal framework for transboundary networks of MPAs.

(ii) Limited sectoral participation

While less formal non-binding approaches may sometimes result in less opposition from industry, the fact that CMAR was not framed in a multi-sectoral manner from the outset, resulted in significant resistance from the fisheries sector,[122] who were concerned that the marine corridor sought absolute protection of marine resources.[123] Although there are strong commercial fishing links between the four CMAR States, there is not a history of collaboration on issues relating to environmental management.[124] In order to create a level of sectoral engagement, Regional Working Groups and National Commissions are

[117] CMAR Technical Document, 30.
[118] Enright and others, 'The Eastern Tropical Pacific Marine Corridor (CMAR)', 5.
[119] CMAR *Action Plan* 2019-2024, 21.
[120] Ibid, 45.
[121] https://www.un.org/depts/los/reference_files/chronological_lists_of_ratifications.htm. Page last updated on 13 May 2022. Accessed 15 August 2022.
[122] Bensted-Smith and Kirkman, 'Comparison of approaches to management of large marine areas', 98.
[123] Corredor Marino del Pacífico Este (CMAR) *Resumen Ejecutivo. Secretaria Técnica Pro Tempore.* San José, Costa Rica. (2019), 6.
[124] WildAid *An Analysis of the Law Enforcement Chain in the Eastern Tropical Pacific Seascape*, 2.

provided for within the structure of CMAR, as described above, whose goal is to incorporate the viewpoints of different groups who carry out activities in the ETP. However, the private sector is notably absent from both. The Action Plan for 2019-2024 acknowledges the important role of the thematic working groups but notes that interaction with the fishing sector has been limited, pointing to the restricted capacity of CMAR to take political or institutional decisions affecting this field.[125] In terms of concrete actions with regard to fisheries, CMAR restricts itself to producing a report with a set of recommendations on better fishing practices in the region.[126] However, it is worth noting that the tourism sector has been more receptive to engaging with CMAR.[127]

(iii) Scale

The scale of a project like CMAR involving transboundary marine management across four jurisdictions is a significant governance challenge. It is the first such undertaking in the region and progress on formalizing the initiative has been slow due to the legal and institutional complexities involved in managing shared biological resources over such a large geographical area.[128] Execution is naturally complex due to the number of different actors involved (technical, political, governmental/non-governmental), the limited financial resources available and the large amount of biodiversity and oceanographic area to be covered.[129] CMAR also needs to be integrated into the political, legal and economic systems of four different member States, each with its own distinct culture.[130] Given that the four CMAR States have already faced significant challenges in effectively managing MPAs within their national jurisdictions, it remains to be seen how this can be effectively done on a larger scale, especially in the absence of a wider supporting ROG strategy.

It is important to note that CMAR has not yet been officially delimited from a geographical or jurisdictional perspective.[131] Based on current applicable legal frameworks, it is likely that the eventual delimitation of CMAR will only cover an area

[125] CMAR *Action Plan* 2019-2024, 11-12.
[126] Ibid, 29; 43.
[127] Enright and others, 'The Eastern Tropical Pacific Marine Corridor (CMAR)', 5.
[128] CMAR Technical Document 2004, 9.
[129] CMAR *Action Plan* 2005, 2.
[130] CMAR *Action Plan* 2019-2024, 13.
[131] Ibid, 11.

within the Exclusive Economic Zones (EEZs) of the respective member States, not the high seas pocket included in the proposed map (fig. 7.1).[132] This is due to the absence of a regional or internationally agreed legal framework with the power to establish protected areas in the high seas. As explained in Chapter Three, given that the high seas do not fall under the jurisdiction of any single State, MPAs can only be designated there under an appropriate authority or instrument with a mandate.[133] How a new treaty to protect biodiversity beyond national jurisdiction (BBNJ) may impact existing governance mechanisms in the ETP region will be discussed in the next section.

CMAR offers an opportunity to redress many of these issues, but only if adequately equipped to do so. The Action Plan for 2019-2024 has acknowledged the need to strengthen the governance of CMAR as a priority action.[134] Specific actions listed in order to achieve this include identifying mechanisms for long term financial sustainability, establishing the envisaged National Commissions in each CMAR member State and strengthening the advisory and technical execution role of the Regional Working Groups.[135] In order to improve regional coordination in a cost-effective manner, the Action Plan proposes implementing a digital platform for communication between the four States.[136] Despite the ambitious scale of CMAR as currently proposed, the 2019-2024 Action Plan recommends considering possibilities for expanding the initiative to include other MPAs and countries in the region.[137]

4. Regional Cooperation in the ETP

As demonstrated in Section 2, CMAR is not covered by one single ROG framework, but rather parts of it fall within the geographic mandates of several mechanisms (see Fig. 7.3). Studies on ROG have warned that where there is different State participation in different

[132] On its website, CMAR refers to the coastal and marine resources present in the EEZs of the CMAR States. See http://cmarpacifico.org/quienes-somos/que-es-el-cmar. With regard it the high seas pocket, it should be noted that Ecuador has declared its right to extend its continental shelf to 350nm measured from the baselines of the Galapagos Archipelago and made a joint submission with Costa Rica to the Commission on the Limits of the Continental Shelf in December 2020. https://www.un.org/Depts/los/clcs_new/submissions_files/submission_criecu_86_2020.htm
[133] UNEP-WCMC, *Governance of areas beyond national jurisdiction*, 23.
[134] CMAR *Action Plan* 2019-2024, 20-24.
[135] Ibid, 23.
[136] Ibid, 24.
[137] Ibid, 46.

ROG mechanisms, decisions of one mechanism may not be applicable to all participants in other relevant mechanisms,[138] which can lead to wider fragmentation in the region and lack of a cohesive ocean governance approach. The overlaps and gaps between mandates and geographical coverage of all these different mechanisms is a key challenge for effective ROG.

It is arguable that CMAR emerged 'indigenously' as a response to the lack of an appropriate governance mechanism to facilitate transboundary marine governance in the region. 'Indigenous' or 'home grown' ROG approaches such as CMAR would appear to engage more active participation of coastal States. In the case of CMAR, its four member States have remained politically engaged in the initiative since its inception 17 years ago and are committed to strengthening CMAR from a legal, governance and financial sustainability perspective. Notable successes to date include permanent coordination between the technical components of CMAR, knowledge exchange and coordination between the core MPAs of CMAR and political coordination between the four Ministries of the Environment,[139] which has facilitated the adoption of joint positions at international fora and in the face of common threats in the region such as overfishing.[140]

However, CMAR suffers from several of the same weaknesses that afflict ROG more generally, including a lack of interaction with important sectors such as fisheries, scarce resources and political instability among some participating States.[141] At the time of the adoption of the SJD in 2004, the creation of a new regional mechanism was criticised as premature prior to adequately exploring the scope for working with existing bodies in the region, such as the CPPS, Navies and the fishing sector.[142] CMAR has continued to have limited interaction with other regional bodies operating in the region. While cooperation efforts have increased in recent years, they appear to be *ad hoc* and not part of any official

[138] Raphaël Billé and others, *Regional oceans governance: making Regional Seas programmes, regional fishery bodies and large marine ecosystem mechanisms work better together* (UNEP Regional Seas Reports and Studies No 197, 2016), 50-51.
[139] Enright and others, 'The Eastern Tropical Pacific Marine Corridor (CMAR)', 11.
[140] For example, CMAR issued a press release on 12 August 2020 regarding the presence of an industrial fleet of foreign flagged fishing vessels in international waters adjacent to the Galapagos Islands.
[141] For a general critique on ROG, see Rochette and others, 'Regional oceans governance mechanisms: A review'.
[142] Bensted-Smith and Kirkman, *Comparison of approaches to management of large marine areas*, 98.

strategy. In relation to cooperation between CMAR and the RFMOs, CMAR has had no contact with the SPRFMO, but the Technical Secretariat of CMAR has participated as an observer in IATTC committee meetings and meetings of the parties and there may be scope for a cooperation agreement with the IATTC in the future.[143] CMAR has also held meetings with other fisheries organizations in the region, which operate within the EEZs, the Central American Fisheries and Aquaculture Organization (OSPESCA),[144] of which Costa Rica and Panama are members, and the Latin American Organization for Fisheries Development (OLDEPESCA),[145] which counts Ecuador, Panama and Costa Rica as members.[146] CMAR and CPPS have similar action plans and are currently working towards a cooperation agreement.[147]

Integration is of course challenging when the applicable ROG framework remains fragmented. Previous studies examining ROG arrangements in the ETP region have observed that integration is weak with no overarching mechanism in place.[148] It has been claimed that fixing problems of fragmentation in ocean governance requires attention to all levels of policy processes and all types of interactions, but especially coordinating ones.[149] For this reason, the CPPS has been suggested as the best placed institution to play an integrating role in the region given its long history of facilitating cooperation.[150] However, the fact that it does not cover the entirety of the ETP could be a sticking point.[151] A clear benefit that CPPS offers is the institutional support provided by the RSP (which has an explicit mandate for marine biodiversity conservation) such as common regional frameworks for monitoring, assessing and reporting on the state of the marine

[143] Enright and others, 'The Eastern Tropical Pacific Marine Corridor (CMAR)', 9.
[144] https://www.sica.int/ospesca/breve.
[145] https://www.fao.org/3/T8211E/t8211e07.htm
[146] Ibid.
[147] Ibid, 8.
[148] Robin Mahon and Lucia Fanning, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance' (2019) 107 Marine Policy 103590, 5.
[149] Lucia Fanning and Robin Mahon. 'Governance of the Global Ocean Commons: Hopelessly Fragmented or Fixable?' (2020). *Coastal Management*: 1-7, 530 citing M Zurn and B Faude, 'On fragmentation, differentiation, and coordination.' (2013) *Global Environmental Politics* 13 (3):119–30.
[150] UNEP-WCMC, 'Governance of areas beyond national jurisdiction for biodiversity conservation and sustainable use', 79-80.
[151] Mahon and Fanning, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance'. Bensted-Smith and Kirkman, *Comparison of approaches to management of large marine areas*, 131, observed that the CPPS mechanisms of decision-making and implementation can be quite cumbersome and it does not get involved in programmes involving only some of its members.

environment, which can provide a useful baseline for tracking progress against globally agreed goals and targets, such as MPA coverage. [152] This can be seen, for example, via the MPA Protocol and associated MPA Network created by the RSP for the South-East Pacific. The CPPS has also been proposed as an ideal platform for the development of a common scientific knowledge base in the South East Pacific, given that is already carries out extensive scientific research across the region.[153] As demonstrated in Chapter Six, a common scientific knowledge base was one of the key enabling factors in OSPAR's success and should naturally help to encourage the development of a coherent regional approach to design and implementation of MPA networks. Additionally, as mentioned in Chapter Five, it has been suggested that a coherent regional approach to design, compliance and enforcement of MPA networks could potentially help to counter commercial and industrial forces actively working against sustainable development.[154]

Bensted-Smith and Kirkman suggest that the UNEP RSP program can play an important role in management of large marine areas if they collaborate with the governments involved and other relevant organizations that bring about results in terms of *inter alia* behaviour change, enforcement, biodiversity and species populations. [155] The RSP also provides a useful platform for regions to engage with global ocean governance processes via its association with a UN body; in this way it plays an essential linking role between global and national levels of governance.[156] It enables regions to insert themselves into the global ocean governance architecture while at the same time retaining their focus on the particularities of their region.[157]

While the regional scale has been acknowledged as the most appropriate for the management of biodiversity elements such as networks of MPAs and highly mobile

[152] Johnson and others, 'Building the regional perspective: platforms for success', 76-77. See further Chapter Five.
[153] Durussel, Oyarzún and Urrutia, 'Strengthening the Legal and Institutional Frame-work of the Southeast Pacific: Focus on the BBNJ Package Elements', 666.
[154] Ibid, 75.
[155] Bensted-Smith and Kirkman, 'Comparison of approaches to management of large marine areas', 4.
[156] Julian Rochette and others, 'The regional approach to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction.' (2014) *Marine Policy* 49: 109-117, 109.
[157] Billé and others, *Regional oceans governance*, 27.

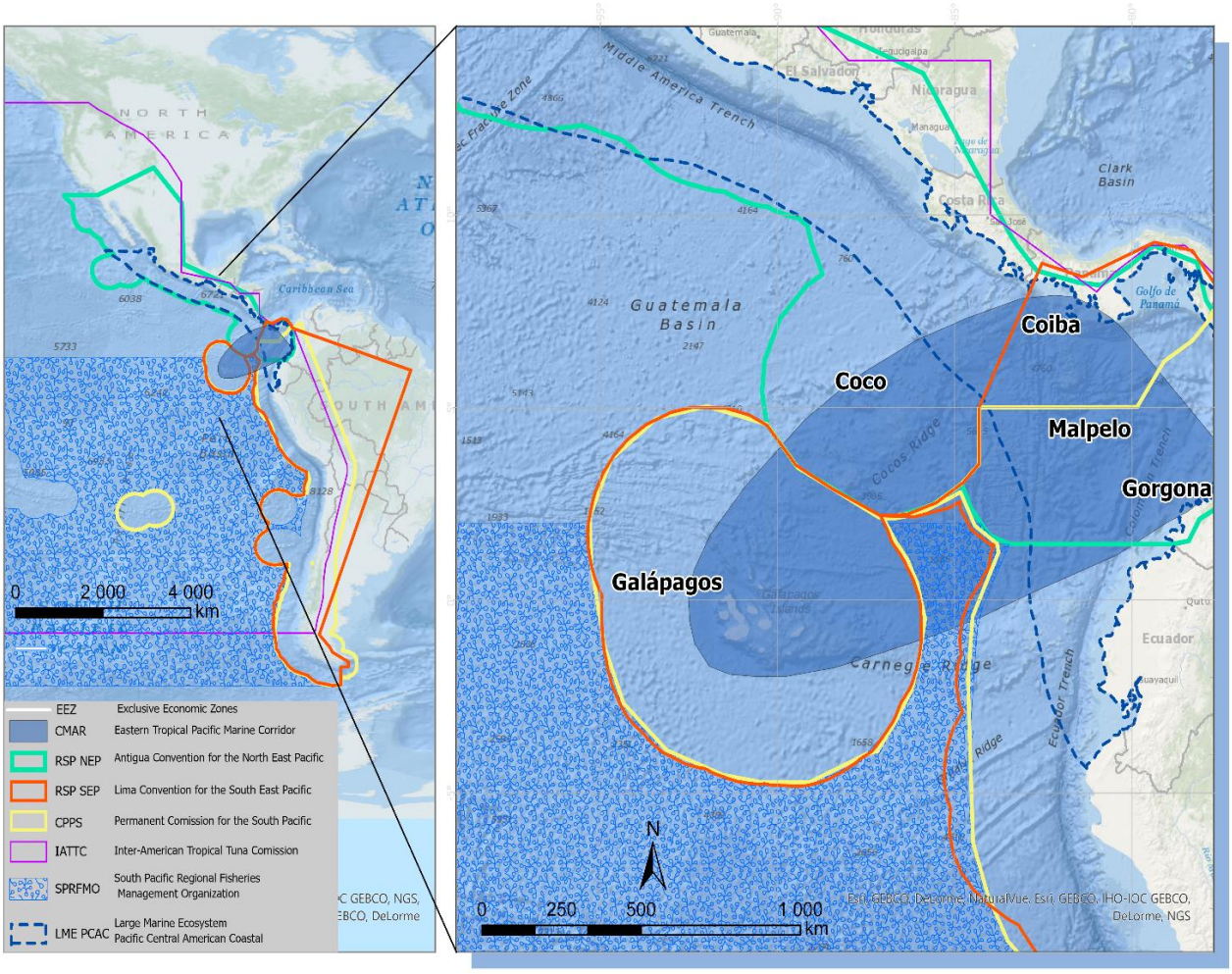
species,[158] the new BBNJ instrument has the potential to help address some of the governance gaps in the ETP by introducing a legal mechanism at the global level for MPAs, which could potentially provide a legal basis for the designation of MPAs in ABNJ and a set of overarching governance principles to guide the oversight and coordination of a global network of MPAs. The BBNJ agreement could create supportive conditions as well as practical arrangements to enable effective cross-sectoral cooperation within and between regions by providing 'top down' oversight via global rules and standards,[159] ensuring an appropriate distribution of competence across the global, regional and sectoral levels,[160] and adopting a flexible approach to institutional arrangements which would recognize that different options may be required for different regions of the world.[161] As discussed in Chapter Five, robust oversight mechanisms are needed to enhance effective cooperation across jurisdictions, otherwise there is a risk that sectoral priorities may take precedence over biodiversity needs.[162]

As discussed in Chapter Five, while the final text of the treaty, and therefore the precise role of ROG organizations, remains under negotiation,[163] it is understood that existing regional and sectoral ocean governance bodies, as well as cross sectoral cooperation and coordination, will have a critical role to play in its effective implementation.[164] It has even been suggested that the new agreement should specifically recognize regional cooperative agreements, as a means of operationalizing the ecosystem approach.[165] This makes sense given that 'indigenous', State led regional arrangements such as CMAR,

[158] David E Johnson, Maria Adelaide Ferreira and Christopher Barrio Froján, 'Regional Seas Biodiversity under the post-2020 Global Biodiversity Framework' (UNEP 2021), 6.
[159] Kristina Gjerde and Glen Wright, 'Towards Ecosystem-based Management of the Global Ocean: Strength-ening Regional Cooperation through a New Agreement for the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction' (2019) STRONG High Seas Project, 18.
[160] Catherine Blanchard, Carole Durussel and Ben Boteler, 'Socio-ecological resilience and the law: Exploring the adaptive capacity of the BBNJ agreement' (2019) 108 Marine Policy 103612, 7.
[161] Nichola A Clark, 'Institutional arrangements for the new BBNJ agreement: Moving beyond global, regional, and hybrid' (2020) 122 Marine Policy 104143, 5.
[162] Gjerde and Wright, 'Towards Ecosystem-based Management of the Global Ocean', 18.
[163] The current draft text can be found at https://www.un.org/bbnj/. The fifth round of negotiations took place from 15-26 August 2022.
[164] Kristina M Gjerde and Siddharth Shekhar Yadav, 'Polycentricity and Regional Ocean Governance: Implications for the Emerging UN Agreement on Marine Biodiversity Beyond National Jurisdiction' (2021) Frontiers in Marine Science 1205.
[165] Gjerde and Wright, 'Towards Ecosystem-based Management of the Global Ocean, 18.

have the potential to mainstream ocean sustainability horizontally at the national level and link upwards into the broader ocean governance field by applying globally and regionally agreed standards.[166]

Figure 7.3 Regional Ocean Governance in the Eastern Tropical Pacific[167]



5. Current Status of CMAR

At the Glasgow Climate Conference (COP26) in November 2021, the Governments of Ecuador, Colombia, Costa Rica and Panama signed a Declaration for the Conservation and Management of the Ecosystems of Cocos, Galapagos, Malpelo and Coiba and their

[166] Robin Mahon and Lucia Fanning, 'Regional ocean governance: Integrating and coordinating mechanisms for polycentric systems' (2019) 107 Marine Policy 103589, 1.
[167] Enright and others, 'The Eastern Tropical Pacific Marine Corridor (CMAR)', 9.

migratory pathways,[168] thus providing a renewed impetus to strengthen CMAR. At COP26, the President of Ecuador also announced the creation of a new marine reserve, known as Hermandad, which connects the Galapagos Marine Reserve to that of Cocos Island in Costa Rica.[169] This is seen as a concrete first step in connecting the MPAs in the CMAR catchment area. Colombia, Panama[170] and Costa Rica[171] have also recently declared MPA expansions[172] and various actors are now willing to commit resources to make CMAR a reality.[173] However, there are indications of several parallel processes taking place. For example, in their declaration at COP26, the four CMAR States expressed a desire to create a UNESCO Transboundary Biosphere Reserve which would encompass the MPAs of Cocos, Malpelo, Coiba and Galapagos.[174]

As discussed in Chapter Three (Section 2), biosphere reserves are nominated by national governments and remain under the sovereign jurisdiction of the States where they are located,[175] therefore cooperation is critical with regard to the designation and management of transboundary reserves.[176] UNESCO guidance provides that a transboundary biosphere reserve can either be established as two or more separate biosphere reserves in individual countries before being designated as a transboundary

[168] Declaración para la conservación y manejo de los ecosistemas comprendidos en el corredor marino del pacifico este tropical migravías Cocos-Galápagos- Malpelo-Coiba, Glasgow, 2 noviembre 2021 (Glasgow Declaration). See also https://blog.nationalgeographic.org/2021/11/02/cop26-colombia-costa-rica-ecuador-and-panama-announce-new-protections-for-ocean-highway/

[169] The new Hermandad reserve was officially established via Presidential Executive Decree no 319 on 14 January 2022. Available at https://www.comunicacion.gob.ec/wp-content/uploads/2022/01/D.E.-319-Reserva-Marina-Hermandad.pdf

[170] https://www.wysscampaign.org/project-list/2021/8/17/cordillera-de-coiba-marine-protected-area-panama

[171] https://blog.nationalgeographic.org/2021/12/17/costa-rica-expands-cocos-island-national-park-by-27-times-in-size/

[172] https://mission-blue.org/2022/06/colombia-expands-mpa-at-malpelo-island-hope-spot-reaching-30x30-goals/

[173] See e.g., https://sdgs.un.org/partnerships/connect-protect-eastern-tropical-pacific-coalition-commitment

[174] Glasgow Declaration, 2 November 2021, 2. See also https://en.unesco.org/news/colombia-costa-rica-ecuador-and-panama-take-first-step-towards-creating-largest-transboundary; https://www.pewtrusts.org/en/research-and-analysis/articles/2022/07/12/5-reasons-to-create-a-large-biosphere-reserve-in-pacific-ocean-off-latin-america

[175] https://en.unesco.org/biosphere/designation; see Article 5 Statutory Framework of the World Network of Biosphere Reserves on Designation Procedure and UNESCO Technical Guidelines for Biosphere Reserves 2021.

[176] UNESCO Technical Guidelines for Biosphere Reserves 2021, 20-21.

biosphere reserve or it can be established jointly by the countries concerned.[177] UNESCO recommends that a transboundary biosphere reserve should be supported by a legally binding agreement[178] as well as a joint management structure with a clear mandate.[179] However UNESCO does not prescribe any specific governance structure and thus States are left with a wide discretion.

It is submitted that if States proceed along the lines of a new international designation such as a Transboundary Biosphere Reserve for CMAR, rather than focus on strengthening CMAR itself, then the Transboundary Biosphere Reserve should at least be underpinned by a multilateral legally binding international agreement, which would provide it with an explicit mandate for action. While as noted in Section 3(b)(i), CMAR member States have indicated some interest in exploring possibilities for converting CMAR into a legally binding agreement, there would not appear to be much political enthusiasm for this endeavor currently, as it is viewed as overly complex with a long-time frame. Given the global interest in CMAR since COP26, member States are now anxious to demonstrate a 'quick win' and the designation of a UNESCO Transboundary Biosphere Reserve appears more palatable as it has limited governance implications; yet attracts global recognition. As discussed in Chapter Three (Section 4), there is disagreement as to whether multiple designations enhance the efficacy of a protected area or dilutes it, and difficulties can arise due to different management regimes, goals and objectives of different designations.

6. Lessons learned from the ETP and NEA

Even though the socio-economic and political situation in the ETP is more unstable and less developed that the North East Atlantic, there is a high level of political and public support for environmental protection. It is therefore submitted that a hybrid model, such as OSPAR, which blends legally binding laws with soft law mechanisms, could be a relevant model for the ETP in terms of acquiring political support. As discussed in

[177] Ibid, 20.
[178] Ibid, 20-21.
[179] A permanent joint secretariat with a separate budget is strongly recommended, which should include representatives of the different management teams, protected area managers, local communities, and other stakeholders. It may be complemented by ad hoc thematic working groups. Ibid, 21.

Chapter Three, while there is no 'perfect' model for transboundary conservation, formal treaties have been advocated by legal scholars and other guidance for offering the most direct approach, laying down explicit rights and obligations and providing the strongest legal basis for long term transboundary cooperation.[180]

However, as discussed in Chapter Six, OSPAR is considered weak from a management, compliance and enforcement perspective given *inter alia* the use of non-binding soft law measures for these purposes. Within national jurisdiction, the OSPAR regime depends on domestic political will and legislation to support its implementation. Similarly in the current scenario for CMAR, individual governments are ultimately responsible for the implementation and enforcement of conservation measures within their respective territories; therefore, the long-term success of CMAR will also depend on political will, which can occasionally be volatile in the region.

There are several lessons which can be learned from the OSPAR experience, which could be applied even in a less than ideal political environment. These include access to a common scientific knowledge base via cooperation with an established marine scientific intergovernmental organization (ICES). This common knowledge base coupled with joint environmental assessments carried out on a regional scale is conducive to more coherent decision making, especially in relation to complex transboundary challenges such as climate change and pollution. A challenge for the ETP region in this regard may be a lack of resources and capacity for the larger scale scientific monitoring required for a regional level assessment. Gjerde and others have recognized that very few States currently have access to the knowledge and expertise needed to oversee effective environmental assessments, which is why international cooperation is key, which could assist in terms of data sharing and the provision of increased capacity for scientific research and associated technology.[181]

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[180] Tullio Scovazzi and Ilaria Tani, 'Problems posed by marine protected areas having a transboundary character' in Mackelworth P (ed.), *Marine Transboundary Conservation and Protected Areas* (Routledge 2016); M. Vasilijević and others *Transboundary Conservation: A systematic and integrated approach.* Best Practice Protected Area Guidelines Series No. 23 (IUCN 2015), 74.

[181] Kristina Gjerde, Glen Wright and Carole Durussel, Strengthening high seas governance through enhanced environmental assessment processes: A case study of mesopelagic fisheries and options for a future BBNJ treaty, STRONG High Seas Project, 2021, 10.

The high level of cooperation between many of the ROG mechanisms in the NEA region has been a key factor for success, especially in a context whereby there are no hard law mechanisms within the OSPAR framework for compliance and enforcement. From a policy perspective, integration within the wider ROG context in the ETP via formal cooperative agreements with key intergovernmental bodies in the region, such as the CPPS and the RFMOs, would be one of the most immediate ways to strengthen CMAR and enhance its standing, especially on a wider regional and global scale. As stated in Section 4, cross sectoral cooperation remains poor in the ETP and needs to be improved. The move by CMAR towards cooperation with the CPPS is a positive step towards integration in the wider region, however much more could be done.

The OSPAR experience in ABNJ has demonstrated that cooperation and collaboration with relevant bodies is possible without an overarching global framework, therefore following that line of thinking, the same level of cooperation should be possible in the ETP without an overarching regional governance framework, such as an RSP, or even an underlying legally binding agreement. As occurred in the NEA, bilateral cooperative agreements between the different ROGs in the region helped to build trust and develop experience in working together and were the first step towards developing a coordinated approach to regional cooperation for the management of the MPA network.

Cooperative agreements with the RFMOs could assist CMAR in dealings with the industrial fishing sector when it comes to activities occurring in the high seas adjacent to CMAR. In terms of managing levels of fishing activity within national jurisdictions, this is arguably best left to national governments rather than a regional body such as CMAR, given the political sensitivities involved. Nevertheless, CMAR can provide a forum for national governments to harmonize their approach to this issue and share data and other information. In order to eventually achieve a truly integrated ecosystem-based approach to management for the region, all regional players will need to coordinate their efforts and share information. Finding a suitable platform for this level of engagement is a crucial next step. Otherwise, there is a risk that CMAR itself may add to further fragmentation in the region.

In terms of lessons that OSPAR could take from CMAR, a relevant observation is that despite the lack of a legally binding framework in the ETP, biodiversity outcomes appear higher in the ETP, as evidenced by the status of the current MPAs in CMAR.[182] As discussed in Chapter Six, OSPAR is not yet ecologically coherent, thus raising questions about the efficacy of the OSPAR regime. Is it possible that the soft law regime espoused by CMAR has encouraged more compliance and thus higher biodiversity outcomes? It is submitted that the more likely conclusion is that the CMAR MPAs are managed quite well within each State's national system. All CMAR MPAs, with the exception of Galapagos, are 'no take', which naturally increases biodiversity outcomes, as discussed in Chapter Two. The Galapagos MPA is generally considered to be well managed and has relatively high levels of compliance. Therefore, the individual MPAs forming part of this network can be considered fully or highly protected MPAs, as per the MPA Guide (see Chapter Two), whereas the same cannot be said for the MPAs forming part of the OSPAR network.

The importance of the regional and sub-regional levels of governance is being increasingly recognised in the field of ocean governance. There is a growing understanding of the effectiveness of multi-level governance, whereby governance arrangements at any level (local, national, subregional, regional and global) are recognized as equally important.[183] If the global ocean governance system is to move towards a more joined up, connected and coordinated approach, encouraged by the new BBNJ instrument, then it too would benefit from increased links with 'bottom-up' regional cooperation mechanisms such as CMAR, which are often left out of global coordination mechanisms due to lack of direct association with a UN body.[184] Given the likelihood of increased visibility and roles for the regional level of ocean governance

[182] For an assessment of the biodiversity in the ETP, see Enright and others 'The Eastern Tropical Pacific Marine Corridor (CMAR)', note 66. While there is not yet a set of harmonized indicators to assess the effectiveness of the CMAR MPAs as an ecological network, each MPA has its own methodology for evaluating effectiveness.

[183] Mahon and Fanning, 'Regional ocean governance: Integrating and coordinating mechanisms for polycentric systems', 1; Blanchard, Durussel and Boteler, 'Socio-ecological resilience and the law: Exploring the adaptive capacity of the BBNJ agreement', 5

[184] Mahon and Fanning, 'Regional ocean governance: Integrating and coordinating mechanisms for polycentric systems', 10-11.

under BBNJ and the Post-2020 Global Biodiversity Framework,[185] the time is ripe for a strengthening of existing ROG arrangements in the ETP, including CMAR itself, in order to enable the diverse range of applicable instruments to function as an effective, cohesive whole, in line with a 'multi-level', polycentric approach to governance.[186]

[185] See discussion in Chapter Five, Section 4(b)(i) and (ii).
[186] Gjerde and Yadav, 'Polycentricity and Regional Ocean Governance, 2; Fanning and Mahon. 'Governance of the Global Ocean Commons: Hopelessly Fragmented or Fixable?'

Chapter 8 Conclusion

1. Contextualizing Transboundary Marine Protected Areas

Given the complexities surrounding the nature of Transboundary Marine Protected Areas (TBMPAs), it is pertinent to begin this final chapter with a reminder of their definition. They have been defined by the International Union for the Conservation of Nature (IUCN) as:

> "a clearly defined geographical space that consists of protected areas that are ecologically connected across one or more international boundaries and involves some form of cooperation".[1]

Ecological connectivity and cooperation are at the core of this definition. Ecological connectivity provides the scientific justification for the establishment of TBMPAs and cooperation is essential for their effective management. The emphasis on ecological connectivity means that protected areas do not have to be physically contiguous across borders. In this sense TBMPAs can be made up of both adjacent and non-adjacent MPAs. The IUCN definition thus allows for two kinds of TBMPA:

- "Two or more contiguous protected areas across international boundary.
- A cluster of protected areas located in two or more countries but separated by areas that are not protected." [2]

Techera surmises three situations whereby establishing transboundary MPAs may lead to an increase in protection, where:

- There are adjacent and non-adjacent existing MPAs.
- An existing MPA borders an unprotected area.
- There is an opportunity for new MPAs are to be created.[3]

[1] M. Vasilijević and others, *Transboundary Conservation: A systematic and integrated approach.* Best Practice Protected Area Guidelines Series No. 23 (IUCN, 2015), xi.
[2] Ibid, 9.
[3] Erika Techera, 'Marine protected areas: Contemporary challenges and developments', (1 edn, Routledge 2019), 167.

The high seas can also be included in a transboundary network of MPAs.[4] As discussed in Chapter Two, we can deduce three types or categories of TBMPAs which need to be considered in terms of their legal implications for other uses of the seas.

i) TBMPAs that lie across two adjoining (200-nm) EEZs or more, whether adjacent or non-adjacent;

ii) TBMPAs that span across an EEZ & the High Seas; whether adjacent or non-adjacent;

iii) TBMPAs that lie across at least two adjoining EEZs as well as the High Seas beyond them, whether adjacent or non-adjacent.

The case study in Chapter Six on the North East Atlantic falls within category (iii) and contains mostly MPAs that are not contiguous across international boundaries; rather it is a network of MPAs across several EEZs separated by areas that are not protected, and also includes portions of the high seas. It has faced questions on its effectiveness from a compliance and enforcement perspective and because it has not yet been deemed to be an ecologically coherent network, despite over two decades under a regional governance framework, in the form of a legally binding regional seas convention Therefore, it may be necessary to consider adding MPAs to fill gaps and enhance viability and connectivity.[5]

In contrast, the case study in Chapter Seven spans across four EEZs (falling into category i) and aims to physically connect most of the existing MPAs in the Eastern Tropical Pacific in an adjacent manner, via the creation of ecological corridors, new MPAs or by expanding existing boundaries. Despite the lack of a formal legally binding agreement, the MPAs within the ETP are considered to be very highly protected, raising interesting questions for the governance of transboundary ecosystems.

[4] Tullio Scovazzi and Ilaria Tani, 'Problems posed by marine protected areas having a transboundary character' in Mackelworth *Marine Transboundary Conservation and Protected Areas* (Routledge 2016), 17.

[5] Glen Wright and others, 'Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14' (2017) Partnership for Regional Ocean Governance (PROG): IDDRI, IASS, TMG & UN Environment, 57.

2. Transboundary MPAs as a driver of convergence?

As discussed in Chapter Two, TBMPAs provide significant additional benefits over individual sites. They enable enhanced protection of ecological connectivity and marine biodiversity, facilitate adaptation to climate change impacts and are a means of operationalizing the ecosystem approach to marine management. As stated above, cooperation is another key element of the TBMPA definition. Given that international cooperation is required to manage TBMPAs, associated benefits include harmonized legislation and better management of shared marine ecosystems, more engaged stakeholders, more cost-effective research and monitoring and increased cooperation on cross border enforcement and policing.[6] Research suggests that when MPA implementation processes are coordinated on a transboundary or even global level, biodiversity conservation benefits can be achieved with much greater efficiency than if based only on national strategies.[7] It has been acknowledged that in order to be able to better protect and connect marine biodiversity in shared marine areas, there is a need to facilitate transboundary agreements and the coordination of MPA designation processes.[8]

As discussed in Chapter Four, there is an emerging recognition of the important role of TBMPAs at a global policy level. In 2021, the United Nations General Assembly adopted a resolution on transboundary cooperation for nature in which TBMPAs were explicitly recognized for their role in maintaining connectivity of habitats and recommended that States increase their establishment.[9] It has been suggested that the recent emphasis on MPAs in international fora is indicative of a shift taking place in international law away from the previously fragmented, sectoral approach to ocean governance to a more integrated holistic approach, with MPAs offering a tool for implementing both the

[6] IUCN-WCPA, *Establishing Marine Protected Area Networks-Making It Happen*. IUCN-WCPA, NOAA and The Nature Conservancy (2008), 20.
[7] Julia Roessger, Joachim Claudet and Barbara Horta e Costa, 'Turning the tide on protection illusions: The underprotected MPAs of the 'OSPAR Regional Sea Convention'' (2022) 142 Marine Policy 105109, 7.
[8] Nicola L. Foster and others, 'Assessing the ecological coherence of a marine protected area network in the Celtic Seas' (2017) 8 Ecosphere e01688, 15-16.
[9] UN General Assembly, *Nature knows no borders: transboundary cooperation – a key factor for biodiversity conservation, restoration and sustainable use*, A/RES/75/271, 16 April 2021, para 9.

precautionary principle as well as the ecosystem approach.[10] This thesis argues that TBMPAs can be viewed as a means of implementing the ecosystem approach in various ways: they enable protection of species, habitats and ecosystems on a biogeographic scale, rather than a scale limited by arbitrary political, maritime and jurisdictional boundaries and arguably act as a driver of convergence between States, given the necessity to harmonize relevant laws across different legal systems and cooperate on a regional and potentially global level to manage TBMPA networks. As noted in Chapter Two, the very definition of TBMPAs is focused on international boundaries in recognition of the significant qualitative differences in working across international borders such as different legal systems and institutional frameworks, distinct management systems, as well as different languages and political cultures.[11]

a. Challenges

As discussed in Chapter Two, designating protected areas in the marine environment is a much more challenging endeavour than on land for several reasons. Firstly, there is the very nature of the ocean itself. The dynamic, interconnected and three-dimensional nature of the ocean and its many and diverse marine species can make it difficult to adequately demarcate boundaries. Furthermore, scientific knowledge about many parts of the ocean, such as the deep-sea, remains incomplete due to logistical and resource challenges. Another ongoing challenge is the lack of universal clarity on how best to define an MPA, as illustrated by the negotiations on the draft text for a new treaty protecting biodiversity beyond national jurisdiction.[12] The many different types and definition of MPAs in existence,[13] itself illustrative of the fragmented nature of ocean governance, in conjunction with the lack of a supportive international legal framework, has led to confusion regarding what qualifies as an MPA and the legal significance of designation. Many of the global instruments outlined in Chapter Three overlap and in practice many sites around the world have multiple designations based on different

[10] Ingvild Ulrikke Jakobsen, 'Marine Protected Areas and Climate Change' (2020) in Johansen E, Busch SV and Jakobsen IU, *The Law of the Sea and Climate Change: Solutions and Constraints* (Cambridge University Press 2020), 239.
[11] Vasilijević, *Transboundary Conservation: A systematic and integrated approach*, 7.
[12] See Chapter Two, Section 2(b).
[13] See Chapter Two, Section 2(b)(i).

grounds, goals, and objectives, leading to complications and incoherence due to incompatible management regimes, with the potential for misinterpretation of zones and possible conflicts of interest.

Transboundary marine conservation adds more layers of complexity. For example, if MPAs are defined differently in different countries, with different levels of protection, management and enforcement, that has significant consequences for coherent cross-border management. There are also differences between States with regard to national legal and administrative systems, ratification of international conventions, and the level of political commitment to marine conservation, which need to be taken into account when embarking upon a transboundary initiative. These difficulties are further exacerbated when we consider the different rules and regulations concerning establishment and management of MPAs in different maritime zones under UNCLOS (as outlined in Chapter Three), which mean that different activities are permitted in each zone. This becomes especially complex when areas beyond national jurisdiction (ABNJ) are included in an MPA network, given the lack of individual State competence and responsibility. There is also the issue of third-party compliance, an issue especially evident in an ABNJ context, as discussed in Chapter Six. Based on the work presented in this thesis (see Chapter Three in particular), it is clear that the rules of international law have a significant influence over the decision-making process regarding MPA designation and implementation.[14] However, as demonstrated in Chapters Three through Five, the international legal framework as it currently stands is not sufficiently supportive of the establishment of TBMPAs. An emerging theory supported by this thesis, is that the duty to cooperate in international law to protect the marine environment implies a duty to cooperate to establish MPAs. This necessity to cooperate is clearly required in the context of transboundary MPAs (see section 3 below). As illustrated in Chapter Six, it is likely that regional cooperation efforts to establish MPAs also offer a mechanism to bring third parties into the fold, via additional soft law cooperation agreements. In this way, perhaps the duty of cooperation can be seen as a means to reconcile legitimate freedoms of the sea with duties to protect the marine environment? It would appear that the most

[14] Scovazzi and Tani, 'Problems posed by marine protected areas having a transboundary character', 17.

'successful' attempts at doing this so far are nonbinding measures, as evidenced in Chapter Six. Bilateral efforts in the North East Atlantic have been more successful than attempts at wider participation, such as the Collective Arrangement. Therefore, in practice much remains to be done to improve engagement of third parties in regional conservation efforts.

It is arguable that the effects of fragmentation of international law and ocean governance are most visible when it comes to the establishment and management of transboundary ecosystems.[15] The fragmented state of ocean governance and the lack of a more coherent international legal framework to facilitate transboundary marine conservation has resulted in a situation where most TBMPAs have been established in an *ad hoc* manner, either through a formal legally binding approach such as a specific bilateral or trilateral treaty concluded with neighbouring States, under a multilateral legal framework such as a Regional Seas Convention (see e.g. Chapter Six), or via a non-binding model such as Memorandums of Understanding or Declarations of Intent (see e.g. Chapter Seven). Given the significant amount of scientific effort, data collection, time and resources that are involved in the designation of MPAs, there have been calls for better integration, collaboration and convergence among international regimes to minimise potential inefficiencies.[16] This thesis has attempted to illustrate how regional cooperation mechanisms for the establishment and management of MPAs across borders could provide a forum to facilitate such harmonization and convergence among different regimes and sectors. It should be recalled that MPAs are a cross sectoral tool, arguably a feature which further facilitates harmonization across sectors. This is one of the key elements that distinguishing MPAs from other types of area-based management tools (ABMTs).

[15] Froukje Maria Platjouw, *Environmental law and the ecosystem approach: maintaining ecological integrity through consistency in law* (Routledge 2016), 212.
[16] José Guerreiro and others, 'The role of international environmental instruments in enhancing transboundary marine protected areas: An approach in East Africa' (2011) 35 Marine Policy 95, 101; Elena Gissi and others, 'Contributions of marine area-based management tools to the UN sustainable development goals' (2022) 330 Journal of Cleaner Production 129910, 10.

3. Regional Ocean Governance as a Platform for Cooperative Management

In practical terms, in order to establish and manage a TBMPA, it is necessary to identify commonalities and differences between the different State legal systems in relation to the specific requirements of the TBMPA (e.g., laws on bycatch or illegal fishing), and to have a forum to facilitate the harmonization of key divergent legal and institutional responses. This is where cooperation is critical. Transboundary conservation has been described as a "process of cooperation" to achieve conservation goals across one or more international boundaries.[17] The IUCN claims that without such cooperation there can be no transboundary conservation.[18] Chapter Five of this thesis argues that cooperation across political and legal boundaries, as well as different sectors, is generally easier at the regional level where there is already a high degree of common interest and commitment on behalf of States to cooperate, as well as existing domestic coordination between countries on various issues.[19] The regional level is also more consistent with an ecosystem approach to marine management as it has a geographical rather than a sectoral scope.[20]

While cooperation and coordination are one of the main strengths of the regional approach to ocean governance, this thesis and its case studies have demonstrated that most examples of regional cooperation for the purposes of TBMPA establishment and management have occurred on a case-by-case basis, with inconsistent progress at the regional level. For example, MPA coverage tends to be disproportionately higher in more economically developed countries,[21] with most examples of TBMPAs found in Europe,[22] given the existence of strong legal frameworks and institutional structures which encourage cooperation, as well as many internationally based designations occurring in

[17] Vasilijević, *Transboundary Conservation: A systematic and integrated approach*, xi.
[18] Ibid, xii
[19] Wright and others, 'Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14', 57.
[20] Emily Marie Barritt and Jorge E Viñuales, 'Legal Scan: A Conservation Agenda for Biodiversity Beyond National Jurisdictions', *Cambridge Centre for Environment, Energy and Natural Resource Governance, University of Cambridge Working Paper* (2016), 53.
[21] Peter J. S. Jones, *Governing marine protected areas: resilience through diversity* (Routledge 2014), 12.
[22] See further Chapter Six on the North-East Atlantic. Other examples include the EU Natura 2000 network, the Pelagos Sanctuary in the Mediterranean and the Wadden Sea in Northern Europe.

this region.[23] This type of regional agglomeration is problematic as it cannot provide the type of ecologically representative and connected TBMPA networks now required on a global scale. It is arguable that could be in large part due to the absence of a global coordinating mechanism, which may soon be provided by a new BBNJ treaty. However, the modalities through which any new global body will interact with existing regional mechanisms has been one of the key sticking points in negotiations. It is submitted that whatever institutional approach is adopted for the new treaty, a strengthening of existing ROG mechanisms[24] is essential in order to have a more level playing field upon which to implement global obligations.

a. Regional Cooperation Mechanisms

There is no hard and fast rule when it comes to choosing the type of regional cooperation mechanism most suited to the joint management of TBMPAs in a given region. However guidance advises that the agreement decided usually needs to reflect the current political circumstances and the unique needs and interests of a particular geographical region and the States involved.[25] It could be argued that the broad range and complexity of cross-border challenges involved in TBMPAs warrant a legally binding agreement over a soft law mechanism in order to create certainty and clear accountability. However, they do not always guarantee a successful outcome, with disadvantages including the complex and cumbersome procedures required to set up an international agreement in the first place.[26] For example, given the increasing pace of transboundary activity in some parts of the world e.g., the Eastern Tropical Pacific, outlined in Chapter Seven, one could argue that a dynamic and more flexible response is required in order to capitalize on the political momentum, which is more likely to occur via soft law. Non-binding informal agreements are quicker and easier to set up and can play an important role in promoting cooperative, friendly relations and joint action, and may sometimes lead to more formal arrangements over time.[27]

[23] Vasilijević, *Transboundary Conservation: A systematic and integrated approach*, 15.
[24] See Chapter Five for a detailed discussion on weaknesses of current ROG arrangements globally.
[25] Vasilijević, *Transboundary Conservation: A systematic and integrated approach,* 74, 82.
[26] Ibid, 74.
[27] Ibid.

Soft law is increasingly supplanting formal international law in many policy arenas, including ocean governance[28] and is considered particularly useful in the context of transboundary governance, where competing sovereign interests can delay the negotiation of intergovernmental agreements.[29] Shelton suggests that the considerable recourse to non-binding norms may represent a maturing of the international system, reflecting the realities of a more complex, globalized world where not all expectations between States need to be formalized in legal instruments.[30] However, a primary issue with soft law is lack of enforcement, as demonstrated by the case study on the North East Atlantic, where soft law mechanisms were chosen for management purposes. OSPAR is perhaps an example of an ongoing evolution in international environmental law, and international law more generally, whereby hard and soft law increasingly interact and can be mutually supportive, described as a "dynamic interplay" by Shelton.[31] As stated in the introduction to this thesis, the law and policy developed around MPAs, in particular regarding the MPA targets, has been cited as reflective of a trend in international environmental law whereby the distinction between hard and soft law is becoming increasingly blurred.[32] Given that much of the work done to develop the ecosystem approach and flesh out how MPAs operate in practice has occurred via soft law mechanisms such as CBD Decisions and technical guidance issued by scientific bodies such as the IUCN, perhaps it makes more sense to conclude that it is in fact soft law which is playing the greater role in driving convergence?

Using the case studies in Chapters Six and Seven for illustration, it is further argued that such regional cooperation, whether binding or not, has the potential to fill some of the gaps left by the fragmentation of international ocean governance, especially if embedded within an overarching regional and global strategy. Cooperation which is embedded

[28] Hugh Kirkman and Peter Mackelworth, 'Defining approaches to the management of large marine systems' in Mackelworth, *Marine transboundary conservation and protected areas* (Routledge 2016), 39 citing Harold Hongju Koh, 'Twenty-First-Century International Lawmaking' (2012) 101 Geo LJ 725. See also Dinah Shelton, 'Normative Hierarchy in International Law' (2006) 100 The American journal of international law 291, 319.
[29] Michelle Voyer and others, 'The role of voluntary commitments in realizing the promise of the Blue Economy' (2021) 71 Global Environmental Change 102372, 5.
[30] Shelton, 'Normative Hierarchy in International Law', 322.
[31] Ibid, 320.
[32] Karen N Scott, 'The dynamic evolution of international environmental law' (2018) 49 Victoria University of Wellington Law Review 607, 618.

under umbrella governance frameworks at the regional and global levels can help to overcome many of the challenges to establishing TBMPAs by, at a minimum, helping to establish a common set of agreed principles and standards.

4. Future areas of research

While this thesis has attempted to add to the scant literature on the establishment and management of TBMPAs at a regional and global level, there remains much research to be done. As discussed in Chapter Four, there is no example of a coherent network of MPAs in any area of the world under national jurisdiction despite several decades of effort.[33] The design and management of MPA networks remains poorly understood.[34] By analysing ongoing efforts in the North East Atlantic (Chapter Six) and the Eastern Tropical Pacific (Chapter Seven) it is hoped to contribute to a more diverse and objective literature on both regions. However, this field would benefit from a larger, global scale analysis of other regional efforts around the world, which is beyond the scope of this study.[35] It will also be important to assess the impacts of any new BBNJ treaty on existing TBMPAs which are adjacent to or already encompass elements of the high seas. Adoption of a BBNJ treaty would be a major development in international law and likely to have a significant impact on all areas of ocean governance, but particularly the regional level. The legal complexities involved in establishing MPAs in ABNJ under the current legal framework are vividly apparent in the OSPAR experience.[36] Given its pioneering efforts, it is arguable that OSPAR has had a "decisive impact" on the development of the global legal regime regarding the role of regional environmental organizations in ABNJ,[37] however, this very issue continues to be a sticking point in the development of the treaty

[33] David Johnson and others, 'When is a marine protected area network ecologically coherent? A case study from the North-east Atlantic' (2014) 24 Aquatic Conservation: Marine and Freshwater Ecosystems 44, 46.
[34] Marta Chantal Ribeiro and EM Olsen, 'Achieving Ecologically Coherent MPA Networks in Europe: Science Needs and Priorities'. Position Paper 18. (European Marine Board 2013), 11, 49.
[35] For example, the framework for a Pan Arctic Network of MPAs, the Turtle Island Heritage Protected Area in the Asia Pacific, the Coral Triangle in the western Pacific Ocean, the Pelagos Sanctuary in the Mediterranean, the Wadden Sea in Northern Europe and the EU's Natura 2000 network.
[36] See Chapter Six, Section 3(b)(i).
[37] Erik J Molenaar and Alex G Oude Elferink, 'Marine protected areas in areas beyond national jurisdiction-the pioneering efforts under the OSPAR convention' (2009) 5 Utrecht L Rev 5, 20.

with negotiators yet to find "an acceptable balance between state autonomy and collective action to effectively manage marine protected areas".[38]

A critical element for the establishment of TBMPAs remains our understanding of ecological connectivity, which provides the scientific justification underpinning most TBMPAs. Marine connectivity conservation continues to evolve scientifically and is an emerging concept for law. As the CBD noted in its 2020 report, one of the key challenges in achieving the Aichi targets lies in ensuring that protected areas are ecologically representative and connected to one another as well as to the wider seascape.[39] As discussed in Chapter Four, there is an emerging understanding of ecological connectivity at the international policy level, but it still does not have legal recognition. There have been calls to facilitate the operationalization of ecological connectivity through adequate national legislation, the provision of guidance and the promotion of international, regional, bilateral and transboundary cooperation.[40] A stronger focus on connectivity in the post-2020 global biodiversity framework,[41] the BBNJ treaty[42] and recognition of 'ecological corridor' as a designation in law and policy would be good first steps.[43] It is submitted that an enhanced legal recognition of ecological connectivity at the global level would be a significant enabling factor for the establishment of TBMPAs and could help to fill some of the gaps in the existing international legal framework.

It has been claimed that ecological connectivity has the potential to achieve "transformative change" in global ocean governance.[44] As stated in Chapter Three, the ocean is one interconnected ecosystem, yet it has been divided into arbitrary zones which do not align with ecological processes, resulting in a major divergence between law and

[38] Kristina M Gjerde, Harriet Harden-Davies and Kahlil Hassanali, 'High seas treaty within reach' Science 2022.
[39] Secretariat of the Convention on Biological Diversity, *Global Biodiversity Outlook* (2020), 82.
[40] CMS, 'Ecological Connectivity – A pathway towards living in harmony with Nature' CMS, UNESCO and POST2020 Biodiversity Framework EU Support (2021), 4; European Commission *EU Biodiversity Strategy for 2030. Bringing nature back into our lives* COM (2020) 380 final.
[41] Ibid, 1.
[42] See generally Ina Tessnow-von Wysocki and Alice BM Vadrot, 'Governing a Divided Ocean: The Transformative Power of Ecological Connectivity in the BBNJ negotiations' (2022) 10 Politics and Governance 14.
[43] Jodi Hilty and others, 'Guidelines for conserving connectivity through ecological networks and corridors' Best Practice Protected Area Guidelines Series 30, (IUCN 2020), 44.
[44] Tessnow-von Wysocki and Vadrot, 'Governing a Divided Ocean: The Transformative Power of Ecological Connectivity in the BBNJ negotiations', 1.

nature. If ecological connectivity can be operationalized, it has the potential to blur these boundaries and challenge existing legal divisions.[45] In this way, it has been described as illustrative of the power of scientific concepts to question the seemingly static nature of international legal structures, but which do in fact have the capacity to change and adapt.[46] Chapter Four of this thesis contains a concise overview of ecological connectivity in law and policy today as it relates to MPA networks. This work revealed a limited literature base. More research should be carried out on the implications of ecological connectivity for other regimes. As noted in Chapter Four, unless global and regional legal instruments dealing with biodiversity, climate change and environmental sustainability address connectivity conservation effectively over the long term, most will not meet their objectives.[47]

5. Concluding remarks

The scale of the challenges facing global ocean governance is immense. As recently noted in 2020 by the United Nations (UN) and other conservation bodies, "biodiversity loss needs to be addressed not only for the sake of species and ecosystems, but also to ensure the survival of human societies."[48] In recognition of the interlinked nature of the climate and biodiversity crises, several governments have declared Climate and Biodiversity Emergencies[49] while the UN Secretary General has stated that we are facing a "triple planetary emergency" citing climate, nature and pollution crises.[50] At the UN Ocean Conference 2022, States declared a "global emergency facing the ocean," and called for enhanced cooperation at global, regional and sub-regional levels to achieve Sustainable Development Goal 14 as soon as possible.[51] The contribution of MPAs and other ABMTS were explicitly recognized as part of the solution.[52]

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[45] Ibid, 10
[46] Ibid.
[47] Hilty and others, *Guidelines for conserving connectivity through ecological networks and corridors*, 44.
[48] UNEP-WCMC and IUCN, *Protected Planet Report 2020*. Cambridge UK; Gland, Switzerland, Chapter Two.
[49] https://climateemergencydeclaration.org/climate-emergency-declarations-cover-15-million-citizens/#nationalgovernments
[50] https://press.un.org/en/2020/sgsm20422.doc.htm
[51] UNOC, *Our Ocean, our future, our responsibility*, Final Draft 25 May 2022, paras. 4 and 14. Available at https://www.un.org/en/conferences/ocean2022/political-declaration
[52] Ibid, para. 13 (f.)

Given the size of the ocean beyond national jurisdiction, as well as the incoherent nature of marine governance across national jurisdictions, it is clear that these challenges cannot be met by nations acting alone. While MPAs are likely to remain a cornerstone of biodiversity conservation into the future,[53] it is also important to remember that MPAs alone are not a quick fix solution to the ocean crisis, especially when many of the issues facing marine biodiversity conservation stem from policies and practices concerning land-based sources of pollution, such as industry, agriculture and other sectors. Nor can any one field of science or technology provide solutions.[54] As Werle and others remind us, it is only through interdisciplinary exchange, negotiation and compromise that there can be a hope of effective action to address such complex problems.[55] Spalding and others argue for spatial marine conservation efforts to be nested within broader management settings.[56] It is submitted that the regional level offers an excellent platform on which to pursue such collaborative action, as it has to potential to provide vertical linkages between both national and global levels, as well as horizontal linkages between regions, all of which would support ecological connectivity and ultimately contribute to ocean governance functioning as an integrated whole. Finally, it has been recommended that governments future-proof spatially based conservation by ensuring sustainable financing, adopting climate-smart strategies and mainstreaming biodiversity across environmental and socio-economic policies.[57]

[53] Sean L Maxwell and others, 'Area-based conservation in the twenty-first century' (2020) 586 Nature 217, 225.
[54] Dirk Werle and others, 'The Future of Ocean Governance and Capacity Development' in *The Future of Ocean Governance and Capacity Development* (Brill Nijhoff 2019), 3.
[55] Ibid.
[56] Mark D. Spalding and others, 'Building towards the marine conservation end-game: consolidating the role of MPAs in a future ocean: Consolidating the role of MPAsin a future ocean' (2016) 26 Aquatic Conservation: Marine and Freshwater Ecosystems 185, 196,
[57] Maxwell and others, 'Area-based conservation in the twenty-first century', 225.

BIBLOGRAPHY

Books, Book Chapters, Journal Articles

Abecasis RC and others, 'Marine Conservation in the Azores: Evaluating Marine Protected Area Development in a Remote Island Context' (2015) 2 Frontiers in Marine Science

Abi-Saab G, 'Fragmentation or unification: some concluding remarks' (1998) 31 NYUJ Int'l L & Pol 919

Agardy T, Claudet J and Day JC, '‘Dangerous Targets’ revisited: Old dangers in new contexts plague marine protected areas' (2016) 26 Aquatic Conservation: Marine and Freshwater Ecosystems 7

Al-Abdulrazzak D and Trombulak SC, 'Classifying levels of protection in Marine Protected Areas' (2012) 36 Marine policy 576

Alava JJ and Paladines F, 'Illegal fishing on the Galápagos high seas' (2017) 357 Science 1362

Andenas M, 'Reassertion and transformation: from fragmentation to convergence in international law' (2015) 46 Georgetown Journal of International Law 685

Ângelo Guerreiro da Silva J and others, 'Transboundary MPAs: a challenge for the twenty-first century' (2012) 23 Management of Environmental Quality: An International Journal 328

Arafeh-Dalmau N and others, 'Marine Spatial Planning in a Transboundary Context: Linking Baja California with California's Network of Marine Protected Areas' (2017) 4 Frontiers in Marine Science

Balbar AC and Metaxas A, 'The current application of ecological connectivity in the design of marine protected areas' (2019) 17 Global Ecology and Conservation e00569

Ban NC and others, 'Systematic conservation planning: a better recipe for managing the high seas for biodiversity conservation and sustainable use' (2014) 7 Conservation Letters 41

Barral V and Dupuy P-M, *Principle 4: Sustainable development through integration* (Oxford University Press 2015)

Barritt EM and Viñuales JE, 'Legal Scan: A Conservation Agenda for Biodiversity Beyond National Jurisdictions', *Cambridge Centre for Environment, Energy and Natural Resource Governance, University of Cambridge Working Paper* (2016)

Belsky MH, 'Management of large marine ecosystems: Developing a new rule of customary international law' (1985) 22 San Diego L Rev 733

Bennett NJ, Govan H and Satterfield T, 'Ocean grabbing' (2015) 57 Marine policy 61

Birnie PW, Boyle AE and Redgwell C, *International law and the environment* (3rd edn, Oxford University Press 2009)

Blanchard C, Durussel C and Boteler B, 'Socio-ecological resilience and the law: Exploring the adaptive capacity of the BBNJ agreement' (2019) 108 Marine Policy 103612

Blanchard C, 'Fragmentation in high seas fisheries: Preliminary reflections on a global oceans governance approach' (2017) 84 Marine Policy 327

Boteler B and others, 'Borderless conservation: integrating connectivity into high seas conservation efforts for the Salas y Gómez and Nazca ridges' (2022) *Frontiers in Marine Science*, forthcoming

Bowling C, Pierson E and Ratté S, 'The common concern of humankind: a potential framework for a new international legally binding instrument on the conservation and sustainable use of marine biological diversity in the high seas' (2016) White Paper 1

Boyle A, 'Relationship between international environmental law and other branches of international law' in Bodansky D, Brunnée J and Hey, E (eds.) *The Oxford handbook of international environmental law* (Oxford University Press 2008)

Brunnée J and Toope SJ, 'Environmental Security and Freshwater Resources: Ecosystem Regime Building' (1997) 91 The American Journal of International Law 26

Brunnée J, Bodansky D and Hey E, *The Oxford handbook of international environmental law* (Oxford University Press 2007)

Brunnée J, 'Common areas, common heritage, and common concern' in Bodansky D, Brunnée J and Hey, E (eds.) *The Oxford handbook of international environmental law* (Oxford University Press 2008)

Bucaram SJ and others, 'Assessing fishing effects inside and outside an MPA: The impact of the Galapagos Marine Reserve on the Industrial pelagic tuna fisheries during the first decade of operation' (2018) 87 Marine Policy 212

Caddell R, 'The Integration of Multilateral Environmental Agreements: Lessons from the Biodiversity-Related Conventions' (2011) 22 Yearbook of International Environmental Law 37

Cai W and others, 'Increased variability of eastern Pacific El Niño under greenhouse warming' (2018) 564 Nature 201

Carlton JT, Keith I and Ruiz GM, 'Assessing marine bioinvasions in the Galápagos Islands: implications for conservation biology and marine protected areas' (2019) 14 Aquatic Invasions

Carr MH and others, 'The central importance of ecological spatial connectivity to effective coastal marine protected areas and to meeting the challenges of climate change in the marine environment' (2017) 27 Aquatic Conservation: Marine and Freshwater Ecosystems 6

Cassese A, *International Law* (Oxford University Press 2001)

Castrejón M and Charles A, 'Human and climatic drivers affect spatial fishing patterns in a multiple-use marine protected area: The Galapagos Marine Reserve' (2020) 15 PloS one e0228094

Castro C and others, 'Marine mammals used as bait for improvised fish aggregating devices in marine waters of Ecuador, eastern tropical Pacific' (2020) 41 Endangered Species Research 289

Chape S, Spalding M and Jenkins M, *The world's protected areas: status, values and prospects in the 21st century* (University of California Press 2008)

Christie P and others, 'Why people matter in ocean governance: Incorporating human dimensions into large-scale marine protected areas' (2017) 84 Marine Policy 273

Clark NA, 'Institutional arrangements for the new BBNJ agreement: Moving beyond global, regional, and hybrid' (2020) 122 Marine Policy 104143

Cortés J and others, 'Marine biodiversity of Eastern Tropical Pacific coral reefs', *Coral reefs of the Eastern tropical Pacific* (Springer 2017)

Cosens BA and others, 'The role of law in adaptive governance' (2017) 22 Ecology and Society 1

Costello C and Molina R, 'Transboundary marine protected areas' (2021) 65 Resource and Energy Economics 101239

Costello MJ and Ballantine B, 'Biodiversity conservation should focus on no-take Marine Reserves: 94% of Marine Protected Areas allow fishing' (2015) 30 Trends in Ecology & Evolution 507

Craven M, ‘Unity Diversity and the Fragmentation of International Law’, (2002) XIII *Finnish Yearbook of International* Law 1-31

Crawford J, *Chance, Order, Change: The Course of International Law* (Hague Academy of International Law, General Course on Public International Law, 2014).

Crespo GO and others, 'High-seas fish biodiversity is slipping through the governance net' (2019) 3 Nature Ecology & Evolution 1273

Cumming GS, Cumming DH and Redman CL, 'Scale mismatches in social-ecological systems: causes, consequences, and solutions' (2006) 11 Ecology and Society

Davies TE and others, 'Tracking data and the conservation of the high seas: Opportunities and challenges' (2021) 58 Journal of Applied Ecology 2703

De Lucia V, 'A critical interrogation of the relation between the ecosystem approach and ecosystem services' (2018) 27 Review of European, Comparative & International Environmental Law 104

De Lucia V, 'Competing Narratives and Complex Genealogies: The Ecosystem Approach in International Environmental Law' (2015) 27 Journal of Environmental Law 91

De Santo EM, 'Implementation challenges of area-based management tools (ABMTs) for biodiversity beyond national jurisdiction (BBNJ)' (2018) 97 Marine Policy 34

Devillers R and others, 'Residual marine protected areas five years on: Are we still favouring ease of establishment over need for protection?' (2020) 30 Aquatic Conservation 1758

Diz D and others, 'Mainstreaming marine biodiversity into the SDGs: The role of other effective area-based conservation measures (SDG 14.5)' (2018) 93 Marine Policy 251

Diz D, *Fisheries management in areas beyond national jurisdiction: the impact of ecosystem based law-making* (Martinus Nijhoff Publishers 2012)

Diz D, 'Marine biodiversity: Unravelling the intricacies of global frameworks and applicable concepts', in Razzaque J and Morgera E (eds.) *Biodiversity and Nature Protection* (Edward Elgar Publishing 2017).

Dudley N and others, 'Defining marine protected areas: A response to Horta e Costa et al' (2017) 77 Marine Policy 191

Dupuy P-M and Viñuales JE, *International environmental law* (Cambridge University Press 2015)

Dureuil M and others, 'Elevated trawling inside protected areas undermines conservation outcomes in a global fishing hot spot' (2018) 362 Science 1403

Durussel C, Oyarzún ES and Urrutia O, 'Strengthening the Legal and Institutional Frame-work of the Southeast Pacific: Focus on the bbnj Package Elements' (2017) 32 The International Journal of Marine and Coastal Law 635

Earle SA, *The world is blue: How our fate and the ocean's are one* (National Geographic Books 2009)

Edgar GJ and others, 'Global conservation outcomes depend on marine protected areas with five key features' (2014) 506 Nature 216

Elferink AGO, 'Coastal states and MPAs in ABNJ: ensuring consistency with the LOSC' (2018) 33 The International Journal of Marine and Coastal Law 437

Enright SR and Boteler B, 'The Ecosystem Approach in International Marine Environmental Law and Governance' in O'Higgins TJ, Lago M and DeWitt, TH, *Ecosystem-Based Management, Ecosystem Services and Aquatic Biodiversity* (Springer 2020)

Enright SR, 'Marine Protected Areas in the high seas:The role of regional ocean governance' (2020) 25 Environmental Liability-Law, Policy and Practice 248

Enright SR, Meneses-Orellana R and Keith I, 'The Eastern Tropical Pacific Marine Corridor (CMAR): The Emergence of a Voluntary Regional Cooperation Mechanism for the Conservation and Sustainable Use of Marine Biodiversity Within a Fragmented Regional Ocean Governance Landscape' (2021) 8 Frontiers in Marine Science 569

Evans K and others, 'The global integrated world ocean assessment: linking observations to science and policy across multiple scales' (2019) 6 Frontiers in Marine Science 298

Fabra A and Gascón V, 'The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) and the ecosystem approach' (2008) 23 The International Journal of Marine and Coastal Law 567

Fiedler P and Lavín M, 'A review of eastern tropical Pacific oceanography' (2006) 69 Prog Oceanogr 94

Finlayson CM and others, 'The Ramsar Convention and Ecosystem-Based Approaches to the Wise Use and Sustainable Development of Wetlands' (2011) 14 Journal of International Wildlife Law & Policy 176

Foster NL and others, 'Assessing the ecological coherence of a marine protected area network in the Celtic Seas' (2017) 8 Ecosphere e01688

Francioni F and Lenzerini F (eds.) *The 1972 World Heritage Convention: A Commentary* (Oxford University Press 2008)

Freestone D, 'The Limits of Sectoral and Regional Efforts to Designate High Seas Marine Protected Areas' (2018) 112 AJIL Unbound 129

French D, 'Common concern, common heritage and other global (-ising) concepts: rhetorical devices, legal principles or a fundamental challenge?' in Bowman M, Davies PGG and Goodwin EJ (eds.), *Research Handbook on Biodiversity and Law* (Edward Elgar Publishing 2016)

Garmestani AS, Allen CR and Cabezas H, 'Panarchy, adaptive management and governance: policy options for building resilience' (2008) 87 Neb L Rev 1036

Gill DA and others, 'Capacity shortfalls hinder the performance of marine protected areas globally' (2017) 543 Nature 665

Gillespie A, 'Science, Values and People: The Three Factors that Will Define the Next Generation of International Conservation Agreements' (2012) 1 Transnational Environmental Law 169

Gissi E and others, 'Contributions of marine area-based management tools to the UN sustainable development goals' (2022) 330 Journal of Cleaner Production 129910

Gjerde KM and Rulska-Domino A, 'Marine Protected Areas beyond National Jurisdiction: Some Practical Perspectives for Moving Ahead' (2012) 27 The International Journal of Marine and Coastal Law 351

Gjerde KM and Yadav SS, 'Polycentricity and Regional Ocean Governance: Implications for the Emerging UN Agreement on Marine Biodiversity Beyond National Jurisdiction' (2021) Frontiers in Marine Science 1205

Gjerde KM, Clark NA and Harden-Davies HR, 'Building a Platform for the Future: the Relationship of the Expected New Agreement for Marine Biodiversity in Areas beyond National Jurisdiction and the UN Convention on the Law of the Sea' (2019) 33 Ocean Yearbook Online 1

Gjerde KM, Harden-Davies H and Hassanali K, 'High seas treaty within reach' Science 2022

Goodwin EJ, 'Broad-spectrum efforts to enhance the conservation of vulnerable marine ecosystems' in Bowman M, Davies PGG and Goodwin EJ (eds.), *Research Handbook on Biodiversity and Law* (Edward Elgar Publishing 2016).

Grorud-Colvert K and others, 'The MPA Guide: A framework to achieve global goals for the ocean' (2021) 373 Science eabf0861

Grumbine RE, 'What Is Ecosystem Management?' (1994) 8 Conservation Biology 27

Guerreiro J and others, 'The role of international environmental instruments in enhancing transboundary marine protected areas: An approach in East Africa' (2011) 35 Marine Policy 95

Harden-Davies H and others, 'Rights of Nature: Perspectives for Global Ocean Stewardship' (2020) 122 Marine Policy 104059

Hardin G, 'The tragedy of the commons: the population problem has no technical solution; it requires a fundamental extension in morality' (1968) 162 Science 1243

Harrison J, *Saving the oceans through law: the international legal framework for the protection of the marine environment* (First edn, Oxford University Press 2017)

Hastings JG and others, 'MMAS in Eastern Tropical Pacific Seascape' (2015) 43 Coastal Management 172

Hearn A and others, 'Hotspots within hotspots? Hammerhead shark movements around Wolf Island, Galapagos Marine Seserve' (2010) 157 Marine Biology 1899

Hicks BL, 'Treaty congestion in international environmental law: the need for greater international coordination' (1998) 32 U Rich L Rev 1643

Hori S, 'The Evolution of International Environmental Regimes: Responding to the Difficulty of Effective Implementation in Developing Countries' (2015) 25 The Waseda Journal of Social Sciences 113

Horta e Costa B and others, 'A regulation-based classification system for Marine Protected Areas (MPAs)' (2016) 72 Marine Policy 192

Huang Y and Vuong PT, 'Marine Protected Areas in ABNJ versus the Principle of High Seas Freedom: Possible Pathway from the OSPAR Experience' in Keyuan, Z (ed) *Sustainable Development and the Law of the Sea* (Brill 2017)

Hughes TP and others, 'New paradigms for supporting the resilience of marine ecosystems' (2005) 20 Trends in Ecology & Evolution 380

Humphreys J and Clark RWE, 'Chapter 1 - A critical history of marine protected areas' in Humphreys J and Clark RWE (eds), *Marine Protected Areas. Science, Policy and Management* (Elsevier 2020).

IISD, 'Summary of the Fourth Session of the Intergovernmental Conference on an International Legally Binding Instrument under the UN Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biodiversity of Areas Beyond National Jurisdiction: 7-18 March 2022', (2022) 25 Earth Negotiations Bulletin 225

IISD, 'Summary of the Third Session of the Intergovernmental Conference on the Conservation and Sustainable Use of Marine Biodiversity of Areas Beyond National Jurisdiction: 19-30 August 2019', (2019) 25 Earth Negotiations Bulletin 218

Jaeckel A, Gjerde KM and Ardron JA, 'Conserving the common heritage of humankind–Options for the deep-seabed mining regime' (2017) 78 Marine Policy 150

Jakobsen IU, 'Marine Protected Areas and Climate Change' in Johansen E, Busch SV and Jakobsen IU, *The Law of the Sea and Climate Change: Solutions and Constraints* (Cambridge University Press 2020)

Jakobsen IU, *Marine protected areas in international law: An arctic perspective* (Brill 2016)

Johansen E and others, 'A Marine-Biology-Centric Definition of Ocean Connectivity and the Law of the Sea' (2021) 12 Arctic Review on Law and Politics 190

Johnson D and others, 'When is a marine protected area network ecologically coherent? A case study from the North-east Atlantic' (2014) 24 Aquatic Conservation: Marine and Freshwater Ecosystems 44

Johnson D, 'Conserving the Charlie–Gibbs Fracture Zone: one of the world's first high seas marine protected areas' in Mackelworth, P (ed.), *Marine Transboundary Conservation and Protected Areas* (Routledge 2016)

Johnson DE and others, 'Building the regional perspective: platforms for success' (2014) 24 Aquatic Conservation: Marine and Freshwater Ecosystems 75

Johnson DE and others, 'Reviewing the EBSA process: Improving on success' (2018) 88 Marine Policy 75

Johnson DE and others, 'Rockall and Hatton: Resolving a super wicked marine governance problem in the High Seas of the northeast Atlantic Ocean' (2019) 6 Frontiers in Marine Science 69

Jones DOB and others, 'Existing environmental management approaches relevant to deep-sea mining' (2019) 103 Marine Policy 172

Jones PJ and De Santo EM, 'Viewpoint–Is the race for remote, very large marine protected areas (VLMPAs) taking us down the wrong track?' (2016) 73 Marine Policy 231

Jones PJS and Long SD, 'Analysis and discussion of 28 recent marine protected area governance (MPAG) case studies: Challenges of decentralisation in the shadow of hierarchy' (2021) 127 Marine Policy 104362

Jones PJS, *Governing marine protected areas: resilience through diversity* (Routledge 2014)

Juda L, 'Considerations in Developing a Functional Approach to the Governance of Large Marine Ecosystems' (1999) 30 Ocean Development & International Law 89

Kirk EA and Popattanachai N, 'Marine plastics: Fragmentation, effectiveness and legitimacy in international lawmaking' (2018) 27 Review of European, Comparative & International Environmental Law 222

Kirk EA, 'Maritime zones and the ecosystem approach: A mismatch' (1999) 8 Review of European, Comparative & International Environmental Law 67

Kirk EA, 'The Ecosystem Approach and the Search for An Objective and Content for the Concept of Holistic Ocean Governance' (2015) 46 Ocean Development & International Law 33

Kirkman H and Mackelworth P, 'Defining approaches to the management of large marine systems', in Mackelworth P (ed.) *Marine transboundary conservation and protected areas* (Routledge 2016)

Klabbers J and Palombella G, *The Challenge of Inter-legality* (Cambridge University Press 2019)

Koh HH, 'Twenty-First-Century International Lawmaking' (2012) 101 Geo LJ 725

Koskenniemi M and Leino P, 'Fragmentation of International Law? Postmodern Anxieties' (2002) 15 Leiden Journal of International Law 553

Krämer L, 'Giving a voice to the environment by challenging the practice of integrating environmental requirements into other EU policies', *European Perspectives on Environmental Law and Governance* (Routledge 2013)

Kvalvik I, 'Managing institutional overlap in the protection of marine ecosystems on the high seas. The case of the North East Atlantic' (2012) 56 Ocean and Coastal Management 35

Laffoley D and Freestone D, 'A world of difference-opportunities for applying the 1972 World Heritage Convention to the High Seas' (2017) 27 Aquatic Conservation: Marine and Freshwater Ecosystems 78

Laffoley D and others, 'Eight urgent, fundamental and simultaneous steps needed to restore ocean health, and the consequences for humanity and the planet of inaction or delay' (2020) Aquatic Conservation: Marine and Freshwater Ecosystems 30 (1): 194-208.

Laffoley D and others, 'Evolving the narrative for protecting a rapidly changing ocean, post-COVID-19' (2021) Aquatic Conservation: Marine and Freshwater Ecosystems 31 (6): 1512-1534.

Laffoley D and others, 'Marine protected areas' in *World Seas: an Environmental Evaluation* (Elsevier 2019)

Lagabrielle E and others, 'Connecting MPAs – eight challenges for science and management' (2014) 24 Aquatic Conservation: Marine and Freshwater Ecosystems 94

Lallier LE and others, 'Access to and use of marine genetic resources: understanding the legal framework' (2014) 31 Natural Product Reports 612

Langhans SD and others, 'The potential of ecosystem-based management to integrate biodiversity conservation and ecosystem service provision in aquatic ecosystems' (2019) 672 Science of the Total Environment 1017

Langlet D and Rayfuse R, 'Challenges in implementing the ecosystem approach: Lessons learned' in Langlet D and Rayfuse R, *The ecosystem approach in ocean planning and governance: Perspectives from Europe and beyond* (Brill 2018)

Langlet D and Rayfuse R, 'The Ecosystem Approach in Ocean Planning and Governance: An Introduction' in Langlet D and Rayfuse R, *The Ecosystem Approach in Ocean Planning and Governance* (Brill 2018)

Lathrop C, 'Baselines', in Rothwell D and others, *The Oxford handbook of the law of the sea* (First edn, Oxford University Press 2015),

Le Lièvre C, 'Sustainably reconciling offshore renewable energy with Natura 2000 sites: An interim adaptive management framework' (2019) 129 Energy Policy 491

Lemieux CJ and others, 'How the race to achieve Aichi Target 11 could jeopardize the effective conservation of biodiversity in Canada and beyond' (2019) 99 Marine Policy 312

Lester SE and Halpern BS, 'Biological responses in marine no-take reserves versus partially protected areas' (2008) 367 Marine Ecology Progress Series 49

Levin N, Kark S and Danovaro R, 'Adding the third dimension to marine conservation' (2018) 11 Conservation Letters e12408

Liu Y and others, 'Dynamic downscaling of the impact of climate change on the ocean circulation in the Galápagos Archipelago' (2013) Advances in Meteorology

Lomolino M and others, *Biogeography* (Sinauer, Sunderland, MA, 2010)

Long R, 'Legal aspects of ecosystem-based marine management in Europe' (2012) 26 Ocean Yearbook 417

Long RD, Charles A and Stephenson RL, 'Key principles of marine ecosystem-based management' (2015) 57 Marine Policy 53

Lysenko I, Besançon C and Savy C, '2007 UNEP-WCMC global list of transboundary protected areas' (2007) Global Transboundary Conservation Network

Mackelworth P (ed.) *Marine transboundary conservation and protected areas* (Routledge 2016)

Maestro M and others, 'Marine protected areas in the 21st century: Current situation and trends' (2019) 171 Ocean and Coastal Management 28

Mahon R and Fanning L, 'Regional ocean governance: Integrating and coordinating mechanisms for polycentric systems' (2019) 107 Marine Policy 103589

Mahon R and Fanning L, 'Regional ocean governance: Polycentric arrangements and their role in global ocean governance' (2019) 107 Marine Policy 103590

Martin SL, Ballance LT and Groves T, 'An ecosystem services perspective for the oceanic Eastern Tropical Pacific: Commercial fisheries, carbon storage, recreational fishing, and biodiversity' (2016) 3 Frontiers in Marine Science 50

Matz-Lück N and Fuchs J, 'The impact of OSPAR on protected area management beyond national jurisdiction: Effective regional cooperation or a network of paper parks?' (2014) 49 Marine Policy 155

Maxwell SL and others, 'Area-based conservation in the twenty-first century' (2020) 586 Nature 217

McIntyre O, 'Convergence in international environmental and natural resources law' (2022) Environmental Policy and Law 1

McIntyre O, 'The current state of development of the no significant harm principle: How far have we come?' (2020) 20 International Environmental Agreements: Politics, Law and Economics 601

McIntyre O, 'The Emergence of an 'Ecosystem Approach' to the Protection of International Watercourses under International Law' (2004) 13 Review of European Community & International Environmental Law 1

McLachlan C, 'The principle of systemic integration and Article 31 (3)(c) of the Vienna Convention' (2005) 54 International & Comparative Law Quarterly 279

Meehan MC and others, 'How far have we come? A review of MPA network performance indicators in reaching qualitative elements of Aichi Target 11' (2020) 13 Conservation Letters e12746

Miclat E and Nunez E, 'The Philippines–Sabah Turtle Islands Heritage Protected Area (TIHPA)' in Mackelworth P (ed.) *Marine Transboundary Conservation and Protected Areas* (Routledge 2016)

Molenaar EJ and Elferink AGO, 'Marine protected areas in areas beyond national jurisdiction-the pioneering efforts under the OSPAR convention' (2009) 5 Utrecht L Rev 5

Molenaar EJ, 'Ecosystem-based fisheries management, commercial fisheries, marine mammals and the 2001 Reykjavik Declaration in the context of international law' (2002) 17 The International Journal of Marine and Coastal Law 561

Morgera E and others, 'Summary of the First Session of the Intergovernmental Conference on an International Legally Binding Instrument under the UN Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biodiversity of Areas Beyond National Jurisdiction: 4–17 September 2018' (2018) 25 Earth Negotiations Bulletin 1

Morgera E and Tsioumani E, 'Yesterday, Today, and Tomorrow: Looking Afresh at the Convention on Biological Diversity' (2010) 21 Yearbook of International Environmental Law 3

Morgera E, 'Whale sanctuaries: an evolving concept within the International Whaling Commission' (2004) 35 Ocean Development & International Law 319

Morgera, E 'The ecosystem approach and the precautionary principle' in Razzaque J and Morgera E (eds.), *Biodiversity and nature protection* (Edward Elgar Publishing 2017)

Mossop J, 'Reconciling activities on the extended continental shelf with protection of the marine environment' in Rayfuse R (ed.), *Research handbook on international marine environmental law* (Edward Elgar Publishing 2015)

Mossop J, *The Continental Shelf Beyond 200 Nautical Miles: Rights and Responsibilities* (Oxford University Press 2016)

Moynihan R, *Transboundary freshwater ecosystems in international law: The role and impact of the UNECE environmental regime* (Cambridge University Press 2021)

Notarbartolo di Sciara G and Agardy T, 'Building on the Pelagos Sanctuary for Mediterranean marine mammals' in Mackelworth P (ed.) *Marine transboundary conservation and protected areas* (Routledge 2016)

Ntona M and Morgera E, 'Connecting SDG 14 with the other Sustainable Development Goals through marine spatial planning' (2018) 93 Marine Policy 214

O'Leary BC and others, 'Effective coverage targets for ocean protection' (2016) 9 Conservation Letters 398

O'Leary BC and others, 'The first network of marine protected areas (MPAs) in the high seas: The process, the challenges and where next' (2012) 36 Marine Policy 598

O'Leary BC and Roberts CM, 'Ecological connectivity across ocean depths: Implications for protected area design' (2018) 15 Global Ecology and Conservation e00431

Ong DM, 'Implications of the Chagos Marine Protected Area Arbitral Tribunal Award for the balance between natural environmental protection and traditional maritime freedoms' in Allen S and Monaghan C (Eds.) *Fifty Years of the British Indian Ocean Territory: Legal Perspectives* (Springer 2018)

Pacoureau N and others, 'Half a century of global decline in oceanic sharks and rays' (2021) 589 Nature 567

Palacios-Abrantes J and others, 'The transboundary nature of the world's exploited marine species' (2020) 10 Scientific Reports 1

Pankakoski T and Vihma A, 'Fragmentation in International Law and Global Governance: A Conceptual Inquiry' (2017) 12 Contributions to the History of Concepts 22

Payne CR, 'Sustainable Management of High Seas Marine Resources: Scoping Note' (2016) SSRN 3044103

Pendleton LH and others, 'Debating the effectiveness of marine protected areas' (2018) 75 ICES Journal of Marine Science 1156

Pineshi L, 'Inter legality and the protection of Marine Ecosystems' in Jan Klabbers and Gianluigi Palombella (eds.), *The Challenge of Inter-legality* (Cambridge University Press 2019)

Pinsky ML and others, 'Preparing ocean governance for species on the move' (2018) 360 Science 1189

Pitchford JW, Codling EA and Psarra D, 'Uncertainty and sustainability in fisheries and the benefit of marine protected areas' (2007) 207 Ecological Modelling 286

Platjouw FM, *Environmental law and the ecosystem approach: maintaining ecological integrity through consistency in law* (Routledge 2016)

Pomeroy RS and others, 'How is your MPA doing? A methodology for evaluating the management effectiveness of marine protected areas' (2005) 48 Ocean & Coastal Management 485

Raitanen E, 'Legal weaknesses and windows of opportunity in transnational biodiversity protection: As seen through the lens of an ecosystem approach based paradigm' in Maljean- DuBois, S (ed.) *The effectiveness of environmental law: a key topic* (Intersentia 2017)

Rayfuse R, 'Climate change, marine biodiversity and international law' in Bowman M, Davies PGG and Goodwin EJ (eds.) *Research Handbook on Biodiversity and Law* (Edward Elgar Publishing 2016)

Rayfuse R, 'Regional fisheries management organizations' in Rothwell D and others, *The Oxford handbook of the law of the sea* (Oxford University Press 2015)

Reimer JM, Devillers R and Claudet J, 'Benefits and gaps in area-based management tools for the ocean Sustainable Development Goal' (2021) 4 Nature Sustainability 349

Resplandy L and others, 'Quantification of ocean heat uptake from changes in atmospheric O2 and CO2 composition' (2018) 563 Nature 105

Ribeiro MC, Bastos FL and Henriksen T, *Global Challenges and the Law of the Sea* (Springer 2020)

Ribeiro MC, 'The 'Rainbow': the first national marine protected area proposed under the high seas' (2010) 25 The International Journal of Marine and Coastal Law 183

Roberts C, *The ocean of life: The fate of man and the sea* (Penguin 2012)

Rochette J and others, 'Regional oceans governance mechanisms: A review' (2015) 60 Marine Policy 9

Rochette J and others, 'The regional approach to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction' (2014) 49 Marine Policy 109

Roessger J, Claudet J and e Costa BH, 'Turning the tide on protection illusions: The underprotected MPAs of the 'OSPAR Regional Sea Convention'' (2022) 142 Marine Policy 105109

Roff JC, 'Networks of marine protected areas - the demonstrability dilemma' (2014) 24 Aquatic Conservation 1

Romero-Torres M and others, 'The Eastern Tropical Pacific coral population connectivity and the role of the Eastern Pacific Barrier' (2018) 8 Scientific Reports 9354

Rothwell D and others, *The Oxford handbook of the law of the sea* (First edn, Oxford University Press 2015)

Ruhl J, 'Regulation by adaptive management-is it possible' (2005) 7 Minn JL Sci & Tech 21

Sala E and Giakoumi S, 'No-take marine reserves are the most effective protected areas in the ocean' (2018) 75 ICES Journal of Marine Science 1166

Sala E and others, 'Assessing real progress towards effective ocean protection' (2018) 91 Marine Policy 11

Sala E and others, 'Protecting the global ocean for biodiversity, food and climate' (2021) 592 Nature 397

Sands P and others, *Principles of international environmental law* (Fourth edn, Cambridge University Press 2018)

Schéré CM, Dawson TP and Schreckenberg K, 'Multiple conservation designations: what impact on the effectiveness of marine protected areas in the Irish Sea?' (2020) 27 International Journal of Sustainable Development & World Ecology 596

Schiller L and others, 'The demise of Darwin's fishes: evidence of fishing down and illegal shark finning in the Galápagos Islands' (2015) 25 Aquatic conservation 431

Scott K, 'Integrated Oceans Management. A New Frontier in Marine Environmental Protection' in Rothwell D and others, *The Oxford handbook of the law of the sea* (First edn, Oxford University Press 2015)

Scott KN, 'International environmental governance: managing fragmentation through institutional connection' (2011) 12 Melbourne Journal of International Law 177

Scott KN, 'The dynamic evolution of international environmental law' (2018) 49 Victoria University of Wellington Law Review 607

Scovazzi T and Tani I, 'Problems posed by marine protected areas having a transboundary character' in Mackelworth P (ed.) *Marine Transboundary Conservation and Protected Areas* (Routledge 2016)

Shaffer GC and Pollack MA, 'Hard vs. soft law: Alternatives, complements, and antagonists in international governance' (2009) 94 Minn L Rev 706

Shelton D, 'Normative Hierarchy in International Law' (2006) 100 The American Journal of International law 291

Smith D and Jabour J, 'MPAs in ABNJ: lessons from two high seas regimes' (2017) 75 ICES Journal of Marine Science 417

Spalding MD and others, 'Building towards the marine conservation end-game: consolidating the role of MPAs in a future ocean: Consolidating the role of MPAs in a future ocean' (2016) 26 Aquatic Conservation: Marine and Freshwater Ecosystems 185

Spalding MD and others, 'Marine ecoregions of the world: a bioregionalization of coastal and shelf areas' (2007) 57 BioScience 573

Takei Y, 'A Sketch of the Concept of Ocean Governance and Its Relationship with the Law of the Sea' in Ryngaert, C, Molenaar EJ and Nouwen S, *What's Wrong with International Law?* (Brill 2015)

Tanaka Y, *A dual approach to ocean governance: the cases of zonal and integrated management in international law of the sea* (Routledge 2008)

Tanaka Y, *The international law of the sea* (Second edn, Cambridge University Press 2015)

Tanaka Y, *The International Law of the Sea* (Third edn, Cambridge University Press 2019)

Tanaka Y, 'Zonal and Integrated Management Approaches to Ocean Governance: Reflections on a Dual Approach in International Law of the Sea' (2004) 19 The International Journal of Marine and Coastal Law 483

Techera E, 'Marine protected areas: Contemporary challenges and developments' (1 edn, Routledge 2019)

Tessnow-von Wysocki I and Vadrot AB, 'Governing a Divided Ocean: The Transformative Power of Ecological Connectivity in the BBNJ negotiations' (2022) 10 Politics and Governance 14

Tittensor DP and others, 'Integrating climate adaptation and biodiversity conservation in the global ocean' (2019) 5 Science Advances eaay9969

Trouwborst A, 'Countering fragmentation of habitats under international wildlife regimes' in Bowman M, Davies PGG and Goodwin EJ (eds.) *Research handbook on biodiversity and law* (Edward Elgar Publishing 2016)

Trouwborst A, 'The Precautionary Principle and the Ecosystem Approach in International Law: Differences, Similarities and Linkages' (2009) 18 Review of European Community & International Environmental Law 26

Verschuuren J, 'Connectivity: is Natura 2000 only an ecological network on paper?' in Born C-H and others, *The Habitats Directive in its EU environmental law context: European nature's best hope?* (Routledge, Taylor & Francis Group 2015)

Voigt C (ed), *Rule of law for nature: new dimensions and ideas in environmental law* (Cambridge University Press 2013)

Voigt C, 'The principle of sustainable development: integration and ecological integrity' in Voigt C (ed), *Rule of law for nature: new dimensions and ideas in environmental law* (Cambridge University Press 2013)

Vousden D, 'Large marine ecosystems and associated new approaches to regional, transboundary and ‘high seas’ management' in Bowman M, Davies PGG and Goodwin EJ (eds.) *Research Handbook on International Marine Environmental Law* (Edward Elgar Publishing 2015)

Voyer M and others, 'The role of voluntary commitments in realizing the promise of the Blue Economy' (2021) 71 Global Environmental Change 102372

Wallace BP and others, 'Global conservation priorities for marine turtles' (2011) 6 PloS one e24510

Wang H, 'Ecosystem Management and Its Application to Large Marine Ecosystems: Science, Law, and Politics' (2004) 35 Ocean Development & International Law 41

Warner RM, 'Conserving marine biodiversity in areas beyond national jurisdiction: co-evolution and interaction with the law of the sea' (2014) 1 Frontiers in Marine Science 6

Watson JE and others, 'The performance and potential of protected areas' (2014) 515 Nature 67

Wells S and others, 'Building the future of MPAs – lessons from history' (2016) 26 Aquatic Conservation: Marine and Freshwater Ecosystems 101

Werle D and others, 'The Future of Ocean Governance and Capacity Development' in *The Future of Ocean Governance and Capacity Development* (Brill 2019)

Willis-Norton E and others, 'Climate change impacts on leatherback turtle pelagic habitat in the Southeast Pacific' (2015) 113 Deep Sea Research Part II: Topical Studies in Oceanography 260

Wilson EO, *Half-earth: our planet's fight for life* (WW Norton & Company 2016)

Wright G, Rochette J and Druel E, 'Marine protected areas in areas beyond national jurisdiction' in Rayfuse R (ed.) *Research Handbook on International Marine Environmental Law* (Edward Elgar Publishing 2015)

Yadav SS and Gjerde KM, 'The ocean, climate change and resilience: Making ocean areas beyond national jurisdiction more resilient to climate change and other anthropogenic activities' (2020) 122 Marine Policy 104184

Zupan M and others, 'Marine partially protected areas: drivers of ecological effectiveness' (2018) 16 Frontiers in Ecology and the Environment 381

Technical Reports and Guidance

Agnesi S and others, 'Spatial analysis of marine protected area networks in Europe's seas III' (2020) 3 ETC/ICM Technical Report 40

Arauz R and others *Science for the Conservation of Migratory Marine Species in the Eastern Pacific* (Migramar 2017)

Asmundsson S and Corcoran E, 'The Process of Forming a Cooperative Mechanism Between NEAFC and OSPAR', Regional Seas Reports and Studies No. 196 (UNEP 2015)

Bensted-Smith R and Kirkman H, 'Comparison of approaches to management of large marine areas' (2010) Fauna & Flora International, Cambridge, UK

Benyon Review into Highly Protected Marine Areas. Final Report. June 2020.

Billé R and others, *Regional oceans governance: making Regional Seas programmes, regional fishery bodies and large marine ecosystem mechanisms work better together.* Regional Seas Reports and Studies No 197. (UNEP 2016)

CBD Decision IX/20, *Scientific guidance for selecting areas to establish a representative network of Marine Protected Areas, including in open ocean water and deep-sea habitats*, UNEP/CBD/COP/DEC/IX/20 (2008)

CBD Decision IX/7 *Ecosystem Approach* UNEP/CBD/COP/DEC/IX/7 (2008)

CBD Decision V/6 *Ecosystem Approach* UNEP/COP/5/23 (2000)

CBD Decision VII/11 *Ecosystem Approach* UNEP/CBD/COP/7/21 (2004)

CBD Decision VII/5 *Marine and coastal biological diversity* CBD/COP/DEC/VII/5 (2004).

CBD Decision X/2 *The Strategic Plan for Biodiversity 2011-2020 and the Aichi Biodiversity Targets* CBD/COP/DEC/X/2 (2010).

Corredor Marino del Pacífico Este (CMAR) *Corredor marino de conservación y desarrollo sostenible del pacifico este tropical entre las islas Coco – Galápagos – Malpelo – Coiba – Gorgona. Antecedentes y consideraciones técnicas para su definición.* Technical Document, San José, Costa Rica, March 2004

Corredor Marino del Pacífico Este (CMAR) *Resumen Ejecutivo. Secretaria Técnica Pro Tempore.* San José, Costa Rica. (2019)

Cremers K, Wright G and Rochette J, 'Options for Strengthening Monitoring, Control and Surveillance of Human Activities in the Southeast Pacific Region' (2020) STRONG High Seas Project

Day J and others, *Guidelines for applying the IUCN protected area management categories to marine protected areas* (IUCN 2012)

Deltares *Proposal for an assessment method of the ecological coherence of networks of marine protected areas in Europe* (2015) 2065339

Dudley N, *Guidelines for Applying Protected Area Management Categories* (IUCN 2008)

EEA, *Marine protected areas in Europe's seas. An overview and perspectives for the future* (European Environment Agency (EEA), Copenhagen, Denmark 2015)

Environmental Law Institute *Legal Tools for Strengthening Marine Protected Area Enforcement* 2016

European Commission *EU Biodiversity Strategy for 2030. Bringing nature back into our lives* COM (2020) 380 final, 4

European Commission, Commission Staff Working Document, *Criteria and guidance for protected area designations*, SWD (2022) 23 final, 2.

European Commission, *Report from the Commission to the European Parliament and the Council on the implementation of the Marine Strategy Framework Directive* (Directive 2008/56/EC), COM (2020) 259 final

European Court of Auditors, 'Marine Environment: EU protection is wide but not deep.' Special Report 26 (2020)

Fanning L and others, 'Transboundary waters assessment Programme (TWAP) assessment of governance arrangements for the ocean, Volume 1: Transboundary large marine ecosystems' (2015) 119 IOC Tech Ser 91

FAO, Technical guidelines for responsible fisheries No. 4 suppl.4. Fisheries management and marine protected areas (2011).

GESAMP *A Sea of Troubles*, GESAMP Report and Studies No. 70 (2001)

Gjerde K and Wright G, 'Towards Ecosystem-based Management of the Global Ocean: Strength-ening Regional Cooperation through a New Agreement for the

Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction' (2019) STRONG High Seas Project

Gjerde, K, Wright G and Durussel C, Strengthening high seas governance through enhanced environmental assessment processes: A case study of mesopelagic fisheries and options for a future BBNJ treaty, STRONG High Seas Project, 2021

Gjerde KM and others, 'Regulatory and governance gaps in the international regime for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction' (IUCN 2008)

Hearn A and others, *A Proposal for Marine Spatial Planning of Ecuador's Exclusive Economic Zone around the Galapagos Marine Reserve.* Technical Document (2021)

Hilty J and others, 'Guidelines for conserving connectivity through ecological networks and corridors' Best Practice Protected Area Guidelines Series 30 (IUCN, 2020)

ICES 'Definition and rationale for ICES ecoregions' in Report of the ICES Advisory Committee, 2020.

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) *Global Assessment Report on Biodiversity and Ecosystem Services* (2019)

International Law Commission, *Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law*, UN Doc A/CN.4/L.682 (13 April 2006)

IPCC, Summary for Policymakers In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change 2022.

IUCN Commentary on the further revised draft text of an agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (A/CONF.232/2022/5), 8 August 2022.

IUCN-WCPA, 'Establishing networks of marine protected areas: A guide for developing national and regional capacity for building MPA networks.' Non-technical summary report (2007)

IUCN-WCPA, *Applying IUCN's Global Conservation Standards to Marine Protected Areas (MPA). Delivering effective conservation action through MPAs, to secure ocean health & sustainable development.* (Version 1.0 IUCN 2018)

IUCN-WCPA, *Establishing Marine Protected Area Networks-Making It Happen*. (IUCN-WCPA, NOAA and The Nature Conservancy 2008)

IUCN-WCPA, 'Guidelines for recognising and reporting other effective area-based conservation measures' (IUCN 2019)

Johnson DE, Ferreira MA and Froján CB, 'Regional Seas Biodiversity under the post-2020 Global Biodiversity Framework' (UNEP 2021)

Kelleher G, *Guidelines for marine protected areas* (IUCN 1999)

Lausche B and others *Marine Connectivity Conservation "Rules of Thumb" For MPA and MPA Network Design* IUCN-WCPA Marine Connectivity Working Group. Version 1.0. (IUCN 2021)

Lausche B and others 'The Legal Aspects of Connectivity Conservation. Volume 1 – A Concept Paper' (IUCN 2013)

Lieberknecht LM, *Ecosystem-Based Integrated Ocean Management: A Framework for Sustainable Ocean Economy Development*. A report for WWF-Norway by GRID-Arendal (2020)

Mahon R and others, 'Transboundary Waters Assessment Programme (TWAP) Assessment of Governance Arrangements for the Ocean Volume 2: Areas Beyond National Jurisdiction' (2015) 119 Intergovernmental Oceanographic Commission Technical Series

Marine Protected Area Advisory Group. *Expanding Ireland's Marine Protected Area Network: A report by the Marine Protected Area Advisory Group*. Report for the Department of Housing, Local Government and Heritage, Ireland (2020)

Millennium Ecosystem Assessment, *Ecosystems and Human Wellbeing: Synthesis* (Island Press, 2005)

OSPAR Commission Guidelines for the Identification and Selection of Marine Protected Areas in the OSPAR Maritime Area (Reference number: 2003-17)

OSPAR Commission *Status of the OSPAR Network of Marine Protected Areas in 2020*

OSPAR Commission *Status of the OSPAR Network of Marine Protected Areas in 2019*

OSPAR Commission, 'Background document to support the assessment of whether the OSPAR network of Marine Protected Areas is ecologically coherent' (2007)

OSPAR Commission, 'Finding Common Ground: Towards regional coherence in implementing the Marine Strategy Framework Directive in the North East Atlantic region through the work of the OSPAR Commission', 578/2012

OSPAR Commission, 'Guidance on developing an ecologically coherent network of OSPAR marine protected areas', (Reference number 2006-03)

OSPAR Commission, 'Guidance to assess the effectiveness of management of OSPAR MPAs: a self-assessment scorecard.' (OSPAR Agreement 2007-5.)

OSPAR Commission, 'Guidelines for the Management of Marine Protected Areas in the OSPAR Maritime Area' (Agreement 2003-18).

OSPAR Commission, 'OSPAR's Regulatory Regime for establishing Marine Protected Areas (MPAs) in Areas Beyond National Jurisdiction (ABNJ) of the OSPAR Maritime Area,' 22-26 June 2009

OSPAR Commission, ‘Rules of Procedure of the OSPAR Commission’ (Reference Number: 2013-02)

OSPAR, ‘General consultation procedures for establishing Marine Protected Areas in Areas Beyond National Jurisdiction of the OSPAR Maritime Area.’ (OSPAR Agreement 2019-09.)

OSPAR’s Regulatory Regime for establishing MPAs in ABNJ of the OSPAR Maritime Area. OSPAR 09-22-1’E

Peñaherrera-Palma C and others, 'Justificación biológica para la creación de la MigraVía Coco-Galápagos' (2018) MigraMar y Pontificia Universidad Católica del Ecuador Sede Manabí Portoviejo, Manabí, Ecuador

Perry A, Blanco J and Fournier N, *Unmanaged= Unprotected: Europe’s marine paper parks. Oceana, Brussels. 52 pp* (2020)

Pörtner H-O and others, 'IPCC special report on the ocean and cryosphere in a changing climate' Intergovernmental Panel on Climate Change (IPCC 2019)

Ribeiro MC and Olsen E, 'Achieving Ecologically Coherent MPA Networks in Europe: Science Needs and Priorities' Position Paper 18. (European Marine Board 2013)

Schaaf T and Rodrigues DC, *Managing MIDAs: Harmonising the Management of Multi-Internationally Designated Areas: Ramsar Sites, World Heritage Sites, Biosphere Reserves and UNESCO Global Geoparks* (IUCN 2016)

Secretariat of the Convention on Biological Diversity *Global Biodiversity Outlook 5* (2020)

Secretariat of the Convention on Biological Diversity *Programme of Work on Protected Areas* (CBD Programmes of Work) (2004).

Secretariat of the Convention on Biological Diversity, *The Ecosystem Approach* (CBD Guidelines 2004)

Sherman K and Hempel G, 'The UNEP Large Marine Ecosystem Report: A perspective on changing conditions in LMEs of the world's Regional Seas' (2008) UNEP Regional Seas Report and Studies No 182

Simard F, *Marine Protected Areas and climate change: Adaptation and mitigation synergies, opportunities and challenges* (IUCN 2016)

Toropova C and others, *Global ocean protection: present status and future possibilities* (IUCN 2010)

UNEP-WCMC and IUCN *Protected Planet Report 2020* (Cambridge UK; Gland, Switzerland, 2021)

UNEP-WCMC, 'A review of area-based planning tools. What is the potential for cross-sectoral planning in areas beyond national jurisdiction?’ Technical document

produced as part of the GEF ABNJ Deep Seas Project. Cambridge (UK): UN Environment World Conservation Monitoring Centre (2018)

UNEP-WCMC, 'Governance of areas beyond national jurisdiction for biodiversity conservation and sustainable use: Institutional arrangements and cross-sectoral cooperation in the Western Indian Ocean and the South East Pacific' (2017) Cambridge (UK): UN Environment World Conservation Monitoring Centre

UNEP-WCMC, IUCN and NGS, *Protected Planet Report 2018* (Cambridge UK; Gland, Switzerland; and Washington, D.C., USA, 2018)

UNEP-WCMC, *Marine connectivity across jurisdictional boundaries: An introduction* (UN Environment World Conservation Monitoring Centre 2018)

UNESCO Operational Guidelines for the Implementation of the World Heritage Convention, July 2012, WHC 12/01.

UNESCO Operational Guidelines for the Implementation of the World Heritage Convention, UNESCO, Intergovernmental Committee for the Protection of the World Cultural and Natural Heritage, WHC 21/01, 31 July 2021.

UNESCO Technical Guidelines for Biosphere Reserves 2021, MAB Programme, Division of Ecological and Earth Sciences UNESCO.

United Nations Environment Programme *Contributions of Regional Seas Conventions and Action Plans to a Healthy Ocean.* (UNEP 2022)

United Nations Environment Programme, 'Regional Seas Application of Area-based Management Tools, including Marine Protected Areas – Case Studies' (UNEP 2019)

United Nations Environment Programme, 'Regional Seas programmes covering Areas Beyond National Jurisdictions' Regional Seas Reports and Studies No202 (UNEP 2017)

United Nations Environment Programme, *Regional Seas Strategic Directions 2022-2025* (UNEP 2021)

United Nations Environment Programme, *UNEP Medium Term Strategy 2018-2021* (UNEP 2016)

United Nations World Ocean Assessment I, UN Doc. A/70/112, 22 July 2015

United Nations World Ocean Assessment II, (United Nations, 2021)

Vasilijević M and others *Transboundary Conservation: A systematic and integrated approach.* Best Practice Protected Area Guidelines Series No. 23 (IUCN 2015)

Vestergaard O and others, *Taking Steps Towards Marine and Coastal Ecosystem-based Management - An Introductory Guide* (UNEP 2011)

Wemaere M and others, 'What legal options for the international agreement on biodiversity in 2020? A first look at the possibilities' *Issue Brief* N°12/18 (IDDRI, 2018)

WildAid *An Analysis of the Law Enforcement Chain in the Eastern Tropical Pacific Seascape* (2010)

World Wildlife Fund (WWF) *Living Planet Report - 2018: Aiming Higher.* (WWF 2018)

World Wildlife Fund (WWF) *Living Planet Report 2020 - Bending the curve of biodiversity loss* (WWF 2020)

Wright G and others, 'Partnering for a Sustainable Ocean: The Role of Regional Ocean Governance in Implementing SDG14' (2017) Partnership for Regional Ocean Governance (PROG): IDDRI, IASS, TMG & UN Environment

Wright G and others, 'The long and winding road: negotiating a treaty for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction', Studies N 82 (IDDRI 2018).