

**Study on Measures to
Support Conservation
Efforts in Areas Beyond
National Jurisdiction in the
Southeast Pacific Region**

Citation

Castellanos-Galindo, G.A., Hampton, S., Germán Narnajo, L., Zapata Padilla, L.A., Bueno Martínez, P.A., Gaymer, C., Boteler, B., and Durussel, C. 'Study on Measures to Support Conservation Efforts in Areas Beyond National Jurisdiction in the Southeast Pacific Region', STRONG High Seas Project, 2022.

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Supported by:



Federal Ministry
for the Environment, Nature Conservation,
Nuclear Safety and Consumer Protection

based on a decision of
the German Bundestag



Partnership for Regional
Ocean Governance

The STRONG High Seas project is part of the International Climate Initiative (IKI; www.international-climate-initiative.com/en/). The Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) supports this initiative on the basis of a decision adopted by the German Bundestag.

The STRONG High Seas project contributes to the work of the Partnership for Regional Ocean Governance (PROG), a partnership hosted by UN Environment, the Institute for Advanced Sustainability Studies (IASS), the Institute for Sustainable Development and International Relations (IDDRI), and TMG – Think Tank for Sustainability.

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www.prog-ocean.org/our-work/strong-high-seas/

DOI: 10.48481/iass.2022.014

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Acknowledgments

The authors would like to thank **Klaudija Cremers** (IDDRI), **Johanne Fischer** (Advisor International Fisheries), **Matthias Gorny** (Oceana Chile), **Carolina Hazin** (BirdLife International), **Tim Packeiser** (WWF Germany), **Daniel Wagner** (Conservation International), **Susan Waugh** (BirdLife International Africa Partnership Secretariat), and The Government of Peru for their valuable contribution and feedback.

Table of Contents

Acknowledgments	1
Abbreviations	4
Executive Summary - Key messages	6
1. Introduction	8
1.1 Objective of this report	9
1.2 Scope of this report	10
1.3 How to read this report	10
2. Developing measures to support conservation efforts in the ABNJ of the Southeast Pacific	12
2.1 Considerations for developing measures to support conservation efforts	12
2.1.1 Key biodiversity components	12
2.1.2 Major pressures and threats on biodiversity	14
2.1.3 Socioeconomic importance of biodiversity beyond national jurisdiction	15
2.2 Components for developing conservation efforts	15
2.2.1 Sectoral measures to support conservation efforts in ABNJs	16
2.2.1.1 Maritime transportation	17
2.2.1.2 Deep-Sea mining	18
2.2.1.3 Fishing	18
2.2.1.4 Cross-sectoral measures - including marine protected areas	26
2.2.1.5 Addressing climate change and pollution from the continents	29
2.2.1.6 Coordinating measures to support conservation efforts	29
2.2.2 Resources to identify key areas and support conservation efforts	34
2.2.3 Other options to support conservation efforts in ABNJ	36
2.2.3.1 Marine Spatial Planning	36
2.2.3.2 Environmental Impact Assessments	37
2.2.3.3 Monitoring, Control and Surveillance	37
3. Proposals to strengthen conservation efforts in ABNJ of the Southeast Pacific	39
3.1 Key considerations for conservation efforts	39
3.2 Proposals to support conservation efforts in the Southeast Pacific	40
3.2.1 Sectoral measures to support conservation efforts	40
3.2.1.1 Maritime transportation	40
3.2.1.2 Deep-Sea mining	41
3.2.1.3 Fishing	41
3.2.1.4 Cross-sectoral measures	42
3.2.1.5 Coordinating measures to support conservation efforts	45
3.2.2 Resources to identify key areas and support conservation efforts ABNJ	46
3.2.3 Other options to support conservation efforts in ABNJ	46
3.2.3.1 Marine Spatial Planning	46
3.2.3.2 Environmental Impact Assessments	47
3.2.3.3 Monitoring, Control and Surveillance	48
3.2.4 Reflections on conservation efforts to achieve policy targets	48

4. Summary and Outlook	51
4.1 Summary	51
4.2 The role of integrated management	51
4.3 Interdependencies between conservation and sustainable use of marine biodiversity in ABNJ and achievement of SDGs	52
References	54

Abbreviations

ABMT	Area Based Management Tools
ABNJ	Areas Beyond National Jurisdiction
ACAP	Agreement on the Conservation of Albatross and Petrels
APEI	Areas of Particular Environmental Interest
BBNJ	Biodiversity Beyond National Jurisdiction
BWM	Ballast Water Management Convention
Convention	
CBD	Convention on Biological Diversity
CCZ	Clarion-Clipperton Zone
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLPCC	Commission on the Limits of the Continental Shelf of the United Nations Organization
CMAR	Eastern Tropical Pacific Marine Corridor
CMM	Conservation and Management Measure
CMS	Convention on Migratory Species
COMRA	China Ocean Mineral Resources Research and Development Association
CPPS	Permanent Commission for the South Pacific
EBFM	Ecosystem-Based Fisheries Management
EBSA	Ecologically or Biologically Significant Areas
EAs	Environmental Assessments
EEZ	Exclusive Economic Zone
EIA	Environmental Assessment
EHPZ	Equatorial Zone of High Productivity
FAO	Food and Agriculture Organization of the United Nations
IATTC	Inter-American Tropical Tuna Commission
IBA	Important Bird and Biodiversity Areas
IMMA	Important Marine Mammal Areas
IMO	International Maritime Organization
IPCC	Intergovernmental Panel on Climate Change
IPOA	International Plan of Action
IPM	Introduction From the Sea (IFS)
ISA	International Seabed Authority
IUCN	International Union for Conservation of Nature
IUU	Illegal, Unregulated and Unreported (Fishing)
IWC	International Whaling Commission
KBA	Key Biodiversity Area
LSMPAs	Large-Scale Marine Protected Areas
MARPOL	International Convention for the Prevention of Pollution from Ships
MCS	Monitoring, Control and Surveillance
MPA	Marine Protected Area
MSP	Marine Spatial Planning
PSSA	Particularly Sensitive Sea Areas
REAs	Regional Environmental Assessments
REMPs	Regional Environmental Management Plans
RFBs	Regional Fishery Bodies
RFMAs	Regional Fisheries Management Agreements
RFMO	Regional Fisheries Management Organization
RSOs	Regional Seas Organization
SDG	Sustainable Development Goal
SEA	Strategic Environmental Assessments

SGNR	Salas y Gómez and Nazca ridges
SPRFMO	South Pacific Regional Fisheries Management Organization
TAC	Total Allowable Catch
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
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
VME	Vulnerable Marine Ecosystems
WTO	World Trade Organizations

Executive summary - Key messages

This report - **Study on Measures to Support Conservation Efforts in Areas Beyond National Jurisdiction in the Southeast Pacific Region** - aims to provide recommendations for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction (ABNJ) in the Southeast Pacific region. These recommendations include considerations for establishing new conservation and management measures and expanding or improving existing measures in the region, as well as the use of tools to support the development of conservation measures. This report has been prepared by STRONG High Seas project researchers based on a literature review of academic articles, data analysis, stakeholder insights, and experiences gathered at expert workshops held in the project's focus regions in 2021. The information presented here is intended to support decision-makers, including government officials, the private sector and other stakeholders working on ocean governance in ABNJ who are involved or have an interest in the ongoing development of the Intergovernmental Conference on an international legally binding instrument under the United Nations Convention on the Law of the Sea (UNCLOS) on the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction (BBNJ). This report is part of a series of reports published by the STRONG High Seas project [*Strengthening Regional Ocean Governance for the High Seas* (June 2017 - May 2022)], covering aspects of ocean governance with a geographic focus on the Southeast Pacific (and Southeast Atlantic) region.

ABNJ of the Southeast Pacific countries contain unique biological, ecological, and oceanographic characteristics and merit urgent and effective protection. This protection is further necessitated by: (1) the increasing pressures and threats facing these areas (e.g., pollution, over-fishing, non-native species, climate change, and potentially seabed mining, as well as the cumulative effects of these pressures), and (2) the socio-economic importance that the region's ABNJs have, particularly for fisheries.

Many of the measures that support conservation efforts at the international level and that are binding on countries such as the sectoral measures established by International Maritime Organization (IMO), International Seabed Authority (ISA) or the Regional Fisheries Management Organizations (RFMOs) (e.g., Inter-American Tropical Tuna Commission (IATTC) and South Pacific Regional Fisheries Management Organisation (SPRFMO)) have so far proven to be poorly synchronized with each other and not sufficient to protect biodiversity in ABNJ in the Southeast Pacific region. Similarly, many available measures to support conservation efforts are so far not being applied in the region.

While measures such as Marine Protected Areas (MPAs) could be a possibility to protect ABNJ in the Southeast Pacific, so far there are only sectoral mechanisms such as restrictions on fishing, mining, or shipping, which creates a fragmented approach that leaves management and conservation efforts not fully effective. The current BBNJ negotiations could provide a clear roadmap for establishing MPAs in ABNJ. Despite the lack of a clear regional strategy so far for ABNJ, recent initiatives and announcements by governments in the region to strengthen the protection of ocean areas within exclusive economic zones and even recent announcements to strengthen protection corridors (e.g., Tropical Eastern Pacific Marine Corridor - CMAR), could provide an impetus to identify efficient protection mechanisms in adjacent areas in ABNJ. Despite recent efforts by some countries (e.g., Chile) to protect oceanic island areas such as those around the islands of Rapa Nui, Salas y Gómez, Desventuradas, and Juan Fernández, or to create others closer to the mainland (e.g., Peru) such as the proposed Dorsal de Nasca National Reserve, effective conservation in national waters of these countries will only be possible if the adjacent ABNJ also have effective biodiversity protection mechanisms in place.

There are some resources for identifying key areas to support conservation efforts in ABNJ in the

Southeast Pacific (e.g., Ecologically or Biologically Significant Areas (EBSAs), Important Bird and Biodiversity Areas (IBAs), Key Bird Areas (KBAs), Important Marine Mammal Areas (IMMAs)), although they are not binding for States, they are tools based on scientific information that could be incorporated when establishing priority conservation areas in ABNJ. Similarly, other options that could assist conservation efforts in ABNJs in the Southeast Pacific include (1) Marine Spatial Planning (MSP), (2) Environmental Impact Assessments (EIA), and (3) Monitoring, Control, and Surveillance (MCS). The States of the region have made varying progress in the implementation of some of these options in their national waters. However, difficulties remain, for example, regarding MCS as has recently been established in widely publicized Illegal, Unregulated and Unreported (IUU) fishing events in the region (e.g., predominantly foreign fishing fleets operating in the vicinity of Galapagos and the Peruvian Exclusive Economic Zone (EEZ)).

To advance effective mechanisms for the conservation of ABNJ in the Southeast Pacific region, this report identifies the following actions to achieve conservation objectives considering the socio-economic realities of the region:

- There is a need for better communication between the States of the region and the different sectoral bodies (IMO, ISA, RFMOs) involved in the management and conservation of biodiversity in ABNJ. In this regard, while the future BBNJ treaty should not undermine the current mandates of existing sectoral bodies, it can play a key role in improving inter-sectoral communication, coordination, and cooperation. In the Southeast Pacific region, the potential role that the Permanent Commission for the South Pacific (CPPS) can play here is crucial.
- In agreement with many voices from governments, academia, business, and civil society globally, the recommendation is to implement a precautionary pause (moratorium) on deep seabed mining activities, so that many of the

elements of environmental protection that are still unclear with respect to this activity are adequately regulated. An additional recommendation involves the rapid implementation of the principles of a circular economy that make exploration of the seabed for raw materials such as minerals unnecessary.

- There is sufficient room to improve mechanisms for the conservation and sustainable use of biodiversity within the RFMOs operating in the Southeast Pacific region. Among the proposed improvements are: (1) Ecosystem-based management (EBM) being a fundamental part of the management measures of the two RFMOs and these measures being implemented more effectively, (2) participation of other sectors of civil society (e.g., non-governmental organizations) in the RFMOs areas and transparency in decision making, and (3) timely and effective interaction between the RFMOs and the future BBNJ treaty.
- The CPPS and the States of the Southeast Pacific region played a fundamental role in 1952 in the determination of a 200 nautical mile maritime jurisdictional zone of the coastal states (a rationale that was accepted 30 years later by UNCLOS). The current willingness and actions of the States of the region with respect to the conservation of their jurisdictional maritime spaces represent an opportunity for the willingness to lead the conservation of ABNJ in the region to set an example worldwide.
- The concept of *integrated ecosystem-based ocean management* (EB-IOM) could be useful as it holistically incorporates the different environmental, social, and economic objectives of different sectors of society for the conservation and sustainable use of ABNJ in the Southeast Pacific.

1. Introduction

Marine areas beyond national jurisdiction (ABNJ) have not been spared from anthropogenic impacts and global threats associated with biodiversity loss and climate change. Terrestrial and coastal ecosystems are intrinsically linked to ABNJs through ecological features, physical ocean processes, nutrient cycling, carbon sequestration, and marine species migration. This connectivity means that coastal waters and the livelihoods they support could be critically affected by activities taking place in ABNJ, and vice versa.

Maintaining healthy and productive ocean ecosystems, including ABNJ, is crucial for human well-being. Effective conservation efforts are therefore essential to maintain and rebuild the resilience of marine ecosystems and to ensure biodiversity conservation and environmental protection. It is important to consider conservation efforts within and beyond national jurisdiction together and to understand the ocean as a whole ecosystem, also considering its connection to land. Currently, many human activities that impact the ocean are not adequately controlled, as only approximately 1% of ABNJ are under protection, i.e., designated as marine protected areas (MPAs). Even though ABNJ cover more than 60% of the ocean's surface and contain about 90% of its biomass, they are the least protected part of the planet¹.

The fragmented nature and lack of coordination in ocean governance exacerbate this problem, making it difficult to achieve integrated management, assess cumulative impacts, and implement appropriate measures for the effective conservation and sustainable use of biodiversity. The United Nations Convention on the Law of the Sea (UNCLOS) provides the global legal framework governing the uses of the ocean and is complemented by several global, regional, and sectoral agreements that regulate activities such as fishing, shipping, or mining. However, there is also a lack of coordination and cooperation among the numerous agencies and organisations that have a mandate in the management of ABNJ.

Globally, there are several ongoing UN processes working to strengthen ocean governance and biodiversity conservation, including in ABNJ. These include: (1) the negotiations for a legally binding instrument under the UN framework for the conservation and sustainable use of marine biodiversity in ABNJ (BBNJ negotiations); (2) the development of the post-2020 Global Biodiversity Framework under the Convention on Biological Diversity (CBD) to provide a 30-year timeline for reducing pressures on terrestrial and marine biodiversity, promoting their sustainable use and safeguarding their ecosystem functions; (3) the implementation of actions to achieve Sustainable Development Goal (SDG) 14 on oceans and marine resources and other ocean-related SDGs to holistically address the current global challenges facing sustainability; (4) discussions on linking oceans and climate within the United Nations Framework Convention on Climate Change (UNFCCC); (5) the United Nations Decade of Ecosystem Restoration; and (6) the launch of the UN Decade of Ocean Sciences for Sustainable Development (2021-2030) to reverse the decline in ocean health and engage stakeholders in the world's oceans to ensure that science supports sustainable development of the ocean.

At the regional level, Regional Seas Organizations (RSOs) and Regional Fisheries Management Organizations (RFMOs) have taken steps to designate marine protected areas and no-take zones with biodiversity conservation components in ABNJ. Regional Fisheries Management Conventions apply to defined regions or geographic areas or to specific fisheries and generally only empower their operational bodies - the RFMOs - to focus on the management and conservation of fishery resources. The different RFMOs have made varied progress in applying an **ecosystem approach to fisheries² management**, but several elements remain that need urgent attention (see Fletcher, 2020). Despite the wide geographic coverage of RFMOs, management of high seas

¹ <https://www.protectedplanet.net/en/thematic-areas/marine-protected-areas>

² This report recognizes the diversity of existing terminologies and holistic approaches to biodiversity and natural resource management. In particular, we recognize that there are some differences between the ecosystem approach to fisheries introduced by FAO and the term ecosystem management (see differences in Arkema et al. 2006 and Cowan Jr et al. 2012). For practical reasons, in this report we will use the term ecosystem management to refer to both terms.

fisheries needs improvement in several respects. Only tuna and tuna-like species are covered on a global scale.

States Parties to the Permanent Commission for the South Pacific (CPPS), which serves as the executive secretariat of the Action Plan for the Protection of the Marine Environment and Coastal Areas of the Southeast Pacific, have also shown their interest in the conservation and sustainable use of BBNJ. CPPS member States signed the 2012 Galapagos Commitment, in which they pledge to promote coordinated action, regarding their interests in living and non-living resources of ABNJ.³

However, there are conventions that explicitly provide for their RFMOs to designate or recommend the designation of special areas for protection and scientific study, or to declare protected areas to conserve fish stocks, thereby establishing agreements (binding only on the parties although vessels flying the flags of non-signatory states cannot fish in these areas without the consent of the RFMOs) to prohibit certain activities within a discrete area. Currently, several RFMOs are updating their legal mandate and scope so that those that have not yet sufficiently included aspects of ecosystem management and biodi-

versity protection, as required by the United Nations Fish Stocks Agreement (UNFSA), will do so in the near future.

1.1 Objective of this report

The objective of this report is to provide recommendations for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction (ABNJ) in the Southeast Pacific region. This includes considerations for proposing new or expanding existing conservation and management measures, as well as other tools to support the development of such management and conservation measures or to support efforts to enhance and improve marine biodiversity conservation in ABNJs. This report focuses specifically on the Southeast Pacific, one of the regions of interest for the STRONG High Seas project, and a region characterized by extremely high biological productivity, supported by the presence of significant ocean currents. For this report, the Southeast Pacific is loosely defined as the eastern part of the South Pacific Ocean, between northern Colombia and southern Chile (see Figure 1), which roughly corresponds to FAO fishing area 87.

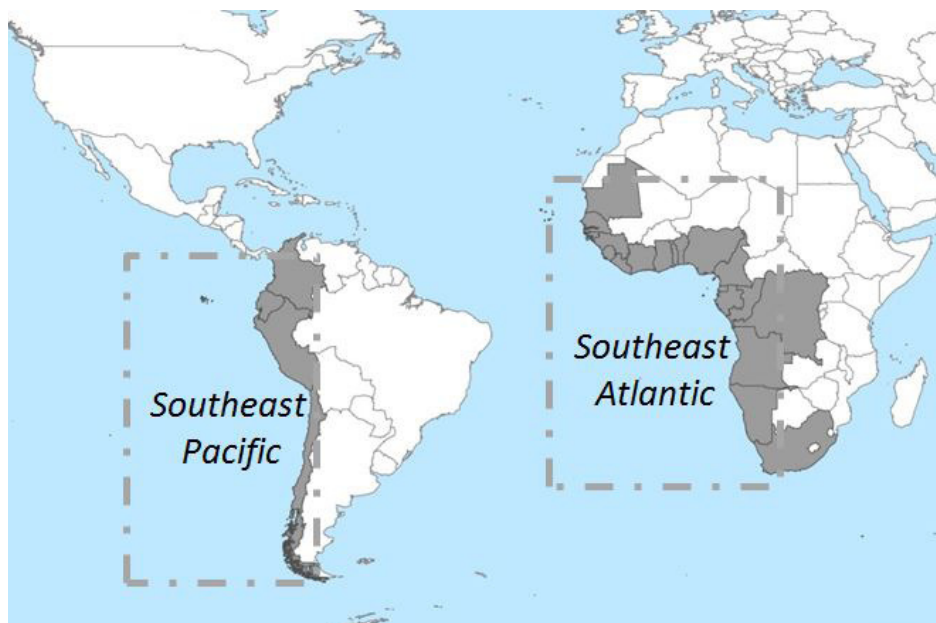


Figure 1: STRONG High Seas Project Focal Regions⁴

³ See CPPS, Galapagos Commitment for the 21st Century, VII Meeting of Foreign Ministers of the Permanent Commission for the South Pacific (Galapagos, August 17, 2012), Art. VIII.20; <http://cpps.dyndns.info/cpps-docsweb/planaccion/docs2016/Mayo/compromiso-galapagos-siglo21.pdf>.

⁴ Image credit: ESRI (2008): *World countries 2008*. ESRI Data & Maps.

1.2 Scope of this report

In this report, **measures to support conservation efforts** are any legally binding or non-legally binding policies or practices adopted by a legal convention or by a management organisation that contributes to the conservation and sustainable use of marine biodiversity, the rehabilitation and restoration of degraded marine ecosystems, or the recovery of threatened marine species in ABNJ. Measures could focus on the ecosystem, species or genetic levels and can take different approaches, such as restricting access through temporal or spatial limits (e.g., a protected area), creating output controls (e.g., limiting the number of marine species removed), or creating input controls (e.g., banning certain types of destructive practices). They can be comprehensive by considering marine biodiversity and/or cumulative pressures on an area or sector pressures stemming from specific human activities. There exist numerous **informative resources which support conservation efforts** across their identification, design, establishment, and implementation stages. Some resources can be used to indicate where conservation efforts are needed and point to potential priorities for management. These could focus on areas which have been identified for their significance to a single species or groups of species, such as Important Bird and Biodiversity Areas (IBAs) and Important Marine Mammal Areas (IMMAs) or be more comprehensive by including a wider range of ecological and biological consideration (e.g., Ecologically or Biologically Significant Marine Areas, EBSAs). These resources are relevant to support conservation efforts, while they do not confer any formal protection on their own. The data and information included in such resources largely stem from the scientific community and/or other forms of knowledge (e.g., expert and, ideally, indigenous traditional knowledge).

There also exist other **options which could broadly support the planning and implementation of measures** by supporting the integration of different information sources and boosting cross-sectoral processes, including in ABNJ. For example, Marine Spatial Planning (MSP) could be applied to support decision-makers to understand ecological, economic, and social interests

and can help to prioritise management decisions. While such tools are commonly applied within coastal waters, to date there has been little use of these tools in ABNJ. Other options include Environmental Impact Assessments (EIAs) and Strategic Environmental Assessments (SEAs), which are core tools for ensuring precaution in the expansion of existing and development of new activities and can reveal the range of potential effects of an activity on multiple components of an ecosystem, including direct, indirect, and cumulative effects, and possible ways to mitigate such impacts.

Other important aspects linked to the development, implementation, and enforcement of measures to support conservation efforts include capacity building, financial mechanisms, monitoring, control and surveillance, and stakeholder engagement and involvement. Furthermore, linking measures to support conservation efforts within and beyond national jurisdictions is of paramount importance to ensure that ecological connectivity is considered, and ecosystem-based integrated management is achieved.

1.3 How to read this report

Following this introductory chapter, Chapter 2 - Developing measures to support conservation efforts in the ABNJ of the Southeast Pacific - provides an overview of existing conservation and management measures, while Chapter 3 - Proposals for strengthening conservation efforts in the ABNJ of the Southeast Pacific - offers recommendations for proposing new or expanding existing conservation and management measures, as well as other tools, that underpin efforts to enhance and improve BBNJ conservation. Finally, Chapter 4 - Summary and outlook - provides a conclusion and perspectives for linking the assessment to ecosystem integrated ocean management, as well as broader considerations for ocean governance.

This report was written by STRONG High Seas project researchers based on a literature review of academic articles, data analysis, stakeholder insights, and experiences gathered at expert workshops held in each of the project regions of

interest in 2021. This report was reviewed by multiple experts, including members of the STRONG High Seas project Advisory Board and representatives of the Permanent Commission for the South Pacific (CPPS), to cross-check the findings and ensure the robustness of the results.

This report is part of a series of reports covering ocean governance issues, focusing on the Southeast Pacific and Southeast Atlantic. Other STRONG High Seas project reports cover topics such as the legal and institutional framework of ABNJs, ecological baselines, the socio-economic importance of ABNJs, recommendations for stakeholder engagement, and capacity building in ocean governance in these two regions.

2. Developing measures to support conservation efforts in the ABNJ of the Southeast Pacific

This chapter provides a first step in considering and developing appropriate conservation efforts in the ABNJ of the Southeast Pacific. Section 2.1 provides a brief overview of important considerations for implementing conservation efforts in the region, including key components of biodiversity, major pressures from human activities, and the socio-economic importance of ABNJ. Section 2.2 takes stock of existing efforts as well as options for implementing conservation within the ABNJ of the Southeast Pacific.

2.1 Considerations for developing measures to support conservation efforts

The following section provides a summary of the main reports published to date by the STRONG High Seas project, as well as the main considerations drawn from their findings. This is provided to help ensure that the recommendations for conservation efforts provided in Chapter 3 take into account the specific ecological characteristics and socio-economic realities of the region.

2.1.1 Key biodiversity components⁵

The Southeast Pacific has distinct topographic and oceanographic features that form a variety of habitats that support biodiversity in the region (Lonsdale, 1976). Benthic habitats support rich and diverse oceanic communities and are some of the largest reservoirs of biomass and non-renewable resources (marine minerals) and harbor microbial processes that are essential to biogeochemical cycles. Most deep ocean floors, including those of the Southeast Pacific, are characterized by vast, relatively flat expanses of abyssal seafloor, interspersed with features such as hydrothermal vents, ridges, seamounts, and guyots (seamounts with a flat top).

At least four distinct oceanographic regions can be identified in the Southeast Pacific: the Eastern Equatorial Pacific, the transition zone of the Hum-

boldt Current System, the South Pacific Gyre and the Eastern Subantarctic Pacific. One of the most important characteristics of the Southeast Pacific is the presence of a natural Minimum Oxygen Zone, which is an area of the ocean where oxygen saturation in the water is very low (Fuenzalida et al., 2009). Similarly, probably the most important climatic variation on Earth, El Niño-Southern Oscillation (ENSO), has enormous repercussions at the oceanographic and biological level in the Southeast Pacific and it is presumed that warming due to greenhouse gases will increase the number of extreme ENSO events in the future with little known consequences for the biodiversity of this region (Cai et al., 2018).

The Southeast Pacific is the only area of the Pacific Ocean enclosed by a ridge system, which has the fastest propagation velocity on Earth (Hey et al., 1995). Hydrothermal source fields occur in at least three zones of the Southeast Pacific: the Galapagos Rift, the Southeast Pacific Rise, and the Pacific-Antarctic Ridge. The seafloor of the Southeast Pacific has high levels of volcanic activity, evidenced by a large number of seamounts, especially along the Salas y Gómez and Nazca ridges. Seamounts form biological hotspots with distinct, abundant, and diverse fauna, thus providing important feeding grounds for numerous species, as well as supporting fisheries (Wagner et al., 2021). Hydrothermal source fields provide habitats for communities that generally have low levels of biological diversity but high endemism (i.e., species found only in these geographic areas), as well as high biomass.

The seabed of the ABNJ (referred to as „the Area“) provides a unique habitat for a variety of fragile deep-sea species and communities but is also very rich in mineral deposits formed over extremely long timescales. These geological features are associated with different types of mineral resources, in particular (i) polymetallic manganese nodules, (ii) cobalt-rich ferromanganese crusts

⁵ A comprehensive overview of the components of biodiversity in ABNJ relevant to the Southeast Pacific can be found in Boteler et al., 2019. 'Ecological Baselines for the Southeast Atlantic and Southeast Pacific: Status of Marine Biodiversity and Anthropogenic Pressures in Areas Beyond National Jurisdiction', STRONG High Seas Project, 2019. Available at: <https://www.prog-ocean.org/our-work/strong-high-seas/strong-high-seas-resources/>

and (iii) polymetallic sulphides. While exploitation of these marine mineral resources could, under certain circumstances, allow for the generation of direct short-term economic value, these geological features alone provide long-term benefits to ecosystem processes, habitats, and species. Knowledge gaps remain regarding the complex ecological and biogeochemical processes and interactions between geological features and biological systems in the deep ocean. Gaps also remain regarding knowledge about the complex ecological and biogeochemical processes and interactions between geological features and biological systems in the deep ocean. What is known for certain, however, is that species and ecosystems found in deep-sea habitats grow slowly and are generally long-lived, making them highly vulnerable (Donovaro et al., 2017).

The Pacific Equatorial High Productivity Zone is a feature associated with the Equatorial Current System and comprises nearly the entire width of the Pacific Ocean as a narrow band spanning the equator. The Carnegie Ridge is a volcanic ridge located in the Pacific Ocean between the coasts of mainland Ecuador and the Galapagos Islands. It is an area of great biological diversity with numerous endemic and threa-

tened species. It is also a mating ground for larger cetaceans and the southern limit of the sea turtle nesting area (Kelez et al., 2009). The Grey petrel feeding area in the Southeast Pacific Rise is the key feeding ground for the Antipodes Island (New Zealand) population of the Grey petrel (International Union for Conservation of Nature - IUCN Status: Near Threatened) during the non-breeding season (October to February). The Salas y Gómez and Nazca ridges harbour an abundance and diversity of unique organisms that provide important habitat for blue whales, leatherback turtles, swordfish, deep sea sharks, Chilean jack mackerel, deep sea corals, shallow water corals, and many other ecologically important species, a large proportion of which are found nowhere else in the world (Wagner et al., 2021).

Most seabirds exhibit highly migratory lifestyles and spend a lot of time in ABNJ (Beal et al., 2021). The IUCN Red List Index for seabirds shows that they have the worst status of all birds (Dias et al., 2019). Due to the distances they travel, seabirds come into contact with a large number of fishing fleets that sometimes result in direct mortality of birds (bycatch). Seabirds also feed on the same resources targeted by fishing fleets. Much is unknown about indirect pressures on seabirds, for

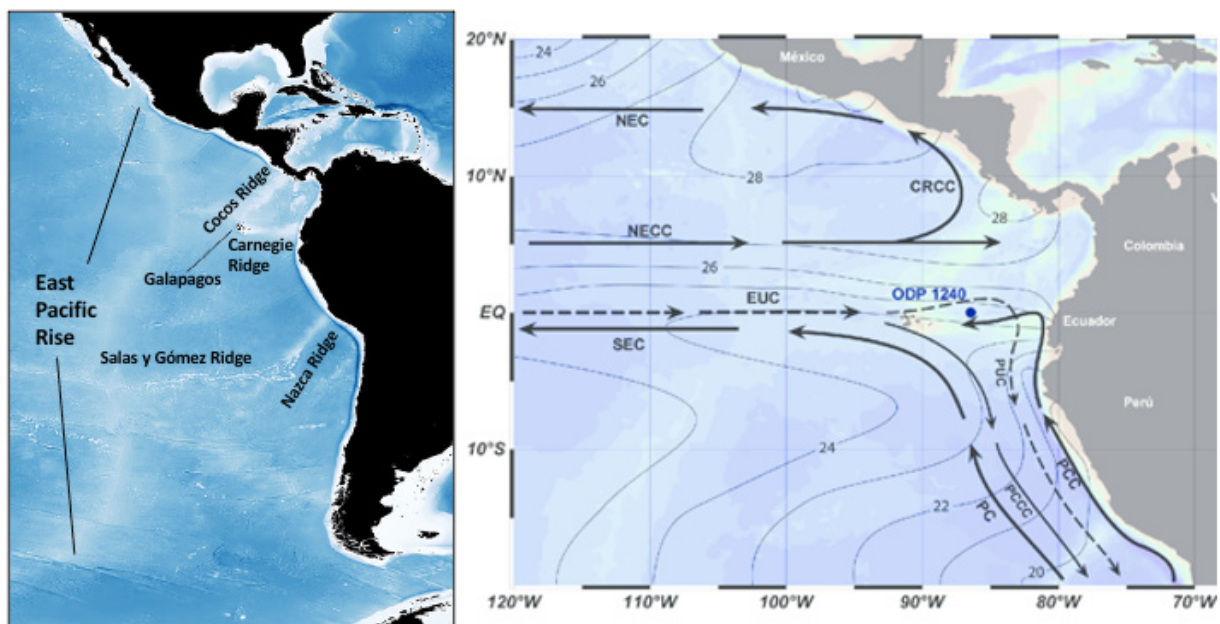


Figure 2: Main geological and oceanographic features of the Southeast Pacific region. Acronyms in the figure on the right: PC: Peru Current; PCC: Peru Coastal Current; PCCC: Peru-Chile Countercurrent; SEC: South Equatorial Current; NEC: North Equatorial Current; NECC: North Equatorial Countercurrent and CRCC: Costa Rica Coastal Current. Subsurface currents: EUC: Equatorial Undercurrent and PUC: Peru Undercurrent. Left figure taken from <https://visibleearth.nasa.gov/images/73963/bathymetry/73964> and right figure taken from Cabarcos et al. (2014).

example, how reduced fish stocks from fishing may affect the food supply for birds or how climate change may alter migration systems or food availability for birds (see Orgeret et al., 2021). There is a group of six IBAs of varying sizes and depths in the southern part of the Southeast Pacific, which are located in ABNJ (Donald et al., 2019). Data shows that individuals of Grey-headed albatross (IUCN Status: Vulnerable) from the Diego Ramirez Islands are present in IBAs during their incubation stage (October to December). Further north, another marine IBA in ABNJ is located between continental Ecuador and the Galapagos Islands. Thousands of individual Waved albatross (IUCN status: Critically Endangered) from one of the islands (Española) are present at the site during their incubation stage (April-August). The Galapagos archipelago is also a KBA (Key Biodiversity Area) but is under the jurisdiction of Ecuador.

2.1.2 Major pressures and threats on biodiversity⁶

Next to climate change, fishing is the most important human activity affecting the oceans including ABNJ in terms of pressure on marine biodiversity (Halpern et al., 2020). The most significant fisheries operating in ABNJ worldwide are those targeting highly migratory species (e.g., tunas) or deep-sea fisheries (FAO, 2020a). Recent assessments estimate that approximately 23% of tuna and billfish stocks are currently overfished (Pons et al., 2017), while by 2016, FAO (2020b) estimated that 18% of the 51 species targeted by high seas bottom fisheries had a negative status and that almost 50% of these species had no information available to assess their status.

Physical disturbance and destruction of the seabed in ABNJ can be caused by deep-sea fishing (e.g., bottom trawling), the laying of underwater cables, and potentially deep-sea mining (which is still considered to be in the exploration phase, as licenses for exploitation have not yet been granted). In the Southeast Pacific, fishing is mainly conducted with purse seines and longlines, resulting in disturbance or destruction of the seabed. Underwater cables have a limited distribution in the Southeast Pacific compared to other ocean areas. However, several areas in ABNJ in the

Southeast Pacific contain mineral resources, creating a potential for destructive deep-sea mining for short-term gains (Wagner et al., 2021). If mining is permitted in these areas, ecological impacts are likely to be permanent (Miller et al., 2018).

A number of activities introduce anthropogenic energy - including sound, light, heat and radioactive energy - into the marine environment. The most widespread and pervasive type of anthropogenic energy is underwater noise. The main activities that generate underwater noise in the ABNJ are related to shipping, including cargo, fishing or passenger vessels, and military exercises, as well as possible oil and gas exploration and exploitation.

Pollution is one of the main threats to marine biodiversity: about 80% of pollutants stem from land-based activities, while other sources include marine activities such as shipping (e.g., oil leaks or spills) and fishing (e.g., debris such as lost fishing nets, known as ghost nets). It is estimated that at least 10% of marine litter is composed of fishing waste, which means that between 500,000 and 1 million tons of fishing gear is likely entering the ocean each year (WWF, 2020). Studies on marine pollution in the Southeast Pacific are limited. Information on marine debris in the Southeast Pacific is predominantly available for the Chilean exclusive economic zone (EEZ) and zone of influence (including oceanic islands), while studies in other countries in the region are scarce and very local in scale. There is an urgent need to fill the information gaps on marine debris from the northern areas of the Southeast Pacific (Peru, Ecuador and Colombia). While there is strong evidence of debris accumulation towards the South Pacific Subtropical Gyre (Eriksen et al., 2013), the transport dynamics of marine debris are not fully understood. However, recent high-resolution modelling studies have shown that 75% of the neutrally buoyant plastics arriving in the Rap Nui (Easter Island) Ecoregion originate from the South American continent, with the vast majority originating between 20°S and 40°S (van Gennip et al., 2019). In addition, marine debris accumulates on the seabed around Rapa Nui (Easter Island) and adjacent seamounts (Mecho et al., 2021) and large floating debris mainly comes

6 A comprehensive overview of pressures from human activities in ABNJ relevant to the Southeast Pacific can be found in Boteler et al. 2019. 'Ecological Baselines for the Southeast Atlantic and Southeast Pacific: Status of Marine Biodiversity and Anthropogenic Pressures in Areas Beyond National Jurisdiction', STRONG High Seas Project, 2019. Available here: <https://www.prog-ocean.org/our-work/strong-high-seas/strong-high-seas-resources/>

from industrial fishing activities taking place in ABNJ near the Peruvian EEZ (20°S, 80°W) (van Gennip et al., 2019). The effects of plastic pollution on biodiversity in the Southeast Pacific include wildlife entanglements and ingestion of plastics and microplastics (Thiel et al., 2018).

Colonization by non-native species may represent a major threat to remote island ecosystems in the Southeast Pacific region. This colonization is unlikely to be detected at an early stage, which is unfortunately necessary to control the introduction of invasive species. Transport and arrival of native species to the ABNJs of the Southeast Pacific can occur through transport via ships, either in the form of hull *fouling* or by transporting larvae or eggs in ballast water (MacIsaac et al., 2016) or by transport in floating debris, also called *rafting*. (Rech et al., 2021).

Transport of non-native species via ships is a serious threat to oceanic islands with regular maritime traffic and ports, where propagules of non-native species are released in large quantities when ballast water is discharged. The transport of non-native species in floating trash, on the other hand, affects all islands that are located in areas of natural subsidence of ocean currents (Haram et al., 2021). This is the case for the Southeast Pacific islands located in the central region of the South Pacific Subtropical Gyre (SPSG), which receives large amounts of floating debris from the continental coasts of the Eastern and Western Pacific (van Gennip et al., 2019). Although it is suggested that the extreme temperature and nutrient gradient between the southeastern continental coasts and the SPSG act as a filter or barrier for most potential species transported by floating objects or ships could easily settle.

According to the recent Special Report on the Ocean and Cryosphere under a Changing Climate (IPCC, 2019), the global ocean has warmed continuously since 1970 and has absorbed more than 90% of the excess heat in the climate system, and the rate of ocean warming has doubled since 1993. Climate scenarios for the Pacific Ocean, including the Southeast Pacific, indicate that relatively less ocean warming is expected compared to other areas, although the region presents the greatest uncertainty in terms of future trends

in ocean conditions. Nevertheless, food webs are expected to change (Le Borgne et al., 2011), but it is unclear what the nature and impact of these changes would be on fisheries and biodiversity. It is expected that the spatial distribution of species and communities will change, as their typical habitat characteristics could change, causing more changes to follow. In addition, high-resolution models show an increase in connectivity between oceanic and continental areas (Dewitte et al., 2021).

While it is essential to review and assess pressures individually to clearly present evidence, pressures must also be considered cumulatively. Cumulative pressures from human activities affect ecosystems in complex ways, and combinations of pressures can result in negative environmental effects that exceed their individual effects. There are important uncertainties associated with the evolution of ecosystems over time and space, especially as a result of incomplete knowledge about biological connectivity, feedbacks in natural systems, and climate change (Dewitte et al., 2021). This warrants a precautionary approach to activities in the Southeast Pacific ABNJ with a better understanding of environmental impacts and increasing conservation efforts along with capacity building efforts to increase technological and scientific capabilities in the Southeast Pacific region.

2.1.3 Socioeconomic importance of biodiversity beyond national jurisdiction⁷

Economic activities that depend on ABNJ and ecosystem health account for most of the consumptive benefits generated in the ABNJ of the Southeast Pacific, especially for the CPPS countries (Chile, Peru, Ecuador, and Colombia). Furthermore, the high degree of connectivity and feedback loops between oceanic and coastal social-ecological systems present important challenges with respect to understanding levels of interdependence in heterogeneous and highly uncertain ecological, social, and economic contexts, especially in the face of climate change and biodiversity loss (Cardinale et al., 2012; García Molinos, Halpern and Schoeman, 2016).

⁷ A comprehensive overview of the socioeconomic importance of Areas Beyond National Jurisdiction in the Southeast Pacific can be found in Olivares et al. 2021. Study on the Socioeconomic Importance of Areas Beyond National Jurisdiction in the Southeast Pacific Region." STRONG High Seas, 2021. Available at: <https://www.prog-ocean.org/our-work/strong-high-seas/strong-high-seas-resources/>

In the Southeast Pacific ABNJ, China, Spain and to a lesser extent, Ecuador, obtain most of the fishing revenues (Olivares-Arenas et al., 2021). However, to a large extent, long-distance fleets do not seem to generate profits from their activities according to their satellite-tracked fishing activities (fishing effort) (Sala et al., 2018). Thus, the activity seems to depend on transshipment of fishery products, offloading in coastal countries for processing, or subsidies and other types of market distortions. Fisheries in the Southeast Pacific, especially in the exclusive economic zones of coastal countries, are closely dependent on biological connectivity, with most of the catch destined for human consumption and providing important multiplier effects in coastal economies. These fisheries also have a dynamic and diversified export sector in terms of destinations, with a high share in revenues from the United States and Spain.

There is heterogeneity in relation to activities, definitions, statistics, and deployment capacity in areas beyond national jurisdiction among CPPS countries, and between these countries and other countries operating in these areas (see Olivares-Arenas et al., 2021 for more details).

In relation to non-consumptive activities, the ABNJ of the Southeast Pacific contain unique geological and ecological features that, together with complex oceanographic cycles, influence global and regional climate. Activities that are not directly dependent on ecosystem health but can potentially affect these ecosystems, such as shipping and the laying of underwater cables, provide important regional benefits in terms of economic activities, transportation, market access, and access to data and information transfer for coastal economies.

The potential development of new activities in ABNJ depends to a large extent on access to the necessary economic capital and knowledge, conditions that in a capitalist context tend to lead to management or governance structures with a small number of powerful actors and highly concentrated markets. Econo-

mic concentration and misinformation about the ocean could weaken participation and thus the representativeness of institutional arrangements, running the risk of excluding relevant actors, especially at the regional level.

2.2 Components for developing conservation efforts

This section provides an overview of existing or available measures to support conservation efforts, as well as resources and other options to support such efforts. The review focuses on the Southeast Pacific study region, while taking a broader perspective on what exists globally. In combination with Section 2.1, this provides a basis for providing recommendations on developing appropriate conservation measures in Chapter 3.

2.2.1 Sectoral measures to support conservation efforts in ABNJs

The United Nations Convention on the Law of the Sea (UNCLOS)⁸ establishes principles, rules and regulations to govern the uses of the ocean. This framework constitutes „the international basis upon which to pursue the protection and sustainable development of marine and coastal environment and its resources“⁹. It has been widely ratified (168 Parties) and some of the provisions of UNCLOS reflect customary international law and are therefore applicable to both Parties and non-Parties¹⁰.

Area-based management tools (ABMTs) to regulate human activities have long been used as a mechanism for biodiversity conservation and protection and include [the designation and management of] Vulnerable Marine Ecosystems (VMEs; related to fishing activities), Areas of Particular Environmental Interest (APEIs; related to deep-sea mining activities), Particularly Sensitive Sea Areas (PSSAs) and MARPOL Special Areas (related to shipping activities). ABMTs also include cross-cutting measures, such as the designation and management of marine protected areas

8 United Nations Convention on the Law of the Sea, opened for signature 10 December 1982, ATS 31 (entered into force 16 November 1994) („UNCLOS“). A historical overview of the development of UNCLOS and related regimes and principles can be found, for example, here: <https://worldoceanreview.com/en/wor-1/law-of-the-sea/a-constitution-for-the-seas/> (accessed: December 2018).

9 See especially: United Nations Food and Agriculture Organization, Code of Conduct for Responsible Fisheries (1995); United Nations Food and Agriculture Organization, 'International Plan of Action for the Management of Fishing Capacity' (1999); United Nations Food and Agriculture Organization, 'International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries' (1999); United Nations Food and Agriculture Organization, 'International Plan of Action for the Conservation and Management of Sharks' (1999); United Nations Food and Agriculture Organization, 'International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing' (2001).

10 United Nations General Assembly, Report of the United Nations Conference on Environment and Development, Conference on Environment and Development, A/CONF.151/26 (Vol. II) (Aug. 13, 1992), chapter 17 („Protection of the oceans, all types of seas, including enclosed and semi-enclosed seas, and coastal areas, and the protection, rational use and development of their living resources“), para. 17.1.

(MPAs) and MPA networks. In addition to these area-specific measures, there are also measures focused on reducing certain pressures, such as chemical pollution or fisheries bycatch.

2.2.1.1 Maritime transportation

Maritime transport is regulated by several conventions and agreements within the framework of the International Maritime Organization (IMO):

- The International Convention for the Prevention of Pollution from Ships (MARPOL);
- The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention) and its Protocol; and

- The International Convention for the Control and Management of Ships' Ballast Water and Sediments (Ballast Water Management Convention or BWM Convention)¹¹.

The United Nations Convention on Biological Diversity (CBD) encourages Parties and other stakeholders to take appropriate measures within their competence to avoid, minimize and mitigate the potential significant adverse impacts of anthropogenic underwater noise on marine and coastal biodiversity, including from maritime transport (COP 12 Decision XII/23).

Table 1: Overview of measures to support conservation efforts related to maritime transport.

Name	Application in the region	Objective	Comments
PSSA - Particularly Sensitive Sea Areas	Malpelo Island, Colombia (2002), Galapagos Archipelago, Ecuador (2005), Paracas National Reserve, Peru (2003)	Protect areas of ecological, socio-economic or scientific importance that are vulnerable to damage caused by international maritime activities.	The two PSSAs in oceanic zones established in the region (Malpelo and Galapagos) overlap with other conservation efforts and designations established for these areas (National Parks, UNESCO World Heritage, etc.). There are insufficient tools to determine the effectiveness of this measure, even though it is taken into consideration in protected area management effectiveness evaluations. This measure could be more effective in preventing the risk of introduction of exotic species, which is accentuated by maritime traffic. For this purpose, IMO has different programs in place.
Special Areas stipulated in the IMO MARPOL convention	There are no such areas in the Southeast Pacific.	<i>The MARPOL Convention</i> defines „ special areas “ which, because of their oceanographic and ecological conditions and the maritime traffic in these areas, make it necessary to adopt procedures to prevent marine pollution. MARPOL establishes that these areas must have a higher level of protection than other marine areas.	

2.2.1.2 Deep-Sea mining

The International Seabed Authority (ISA) regulates activities related to deep-sea mining in the Area, as established under Part XI of UNCLOS and the 1994 Agreement relating to the implementation of Part XI of UNCLOS. The ISA is also developing Regional Environmental Management Plans (REMPs) for specific areas within the ABNJ. REMPs led by ISA aim to address the impacts of seabed mining and ecosystem protection. They are instruments that define specific objectives, guidelines, and management measures for a particular region where mining might

take place. REMPs can be considered as land-use planning, where the main protection measure offered is the designation of Areas of Particular Environmental Interest (APEIs) located within the region, but outside the current areas of mining interest. Efforts are underway to establish a REMP for the Mid-Atlantic Ridge in addition to the existing REMP in the Clarion-Clipperton Zone (CCZ). The China Ocean Mineral Resources Research and Development Association (COMRA), a mining contractor, initiated the development of a REMP in the North Atlantic in 2018 by offering to collaborate with the ISA, for example, by providing initial ideas and hosting a workshop¹².

Table 2: Overview of measures to support conservation efforts related to deep-sea mining

Name	Application in the region	Objective
APEIs - Areas of Particular Environmental Interest	There are to date no APEIs in the Southeast Pacific region.	There are no mining areas that cover the full range of habitats, biodiversity and ecosystem functions within the overall management area. Only in CCZ (Clarion-Clipperton Zone)
REMPs - Regional Environmental Management Plans	No REMPs exist to date in the Southeast Pacific region.	ISA strategic environmental management tool that aims to provide region-specific information, measures, and procedures to ensure the protection of the marine environment in accordance with UNCLOS. REMPs are expected to establish APEIs.

2.2.1.3 Fishing

The United Nations Food and Agriculture Organization (FAO) has adopted several binding and voluntary agreements, codes of conduct and plans of action, among them:

- The 1993 FAO Compliance Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas.
- The 1995 United Nations Fish Stocks Agreement (UNFSA) allows States to cooperate through Regional Fisheries Management Organisations and Agreements (RFMO/As)¹³ that develop and implement fisheries management measures.
- The 1995 FAO Code of Conduct for Responsible Fisheries establishes „*international standards of behavior for responsible practices to ensure the effective conservation, management and development of living aquatic resources, respecting the ecosystem and biodiversity*“.
- The 1999 International Plan of Action for the Management of Fishing Capacity (IPOA-Capacity).
- The 1999 International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (IPOA-Seabirds).
- The 1999 International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks).

¹¹ International Convention for the Control and Management of Ships' Ballast Water and Sediments, opened for signature 13 February 2004 (entered into force 8 September 2017). See also: International Convention for the Safety of Life at Sea, opened for signature November 1, 1974, 1184 UNTS 2 (entered into force May 25, 1980); International Convention on Oil Pollution Preparedness, Response and Co-operation, opened for signature 30 November 1990, ATS 12 (entered into force 13 May 1995).

¹² <https://www.isa.org/jm/news/comraisa-outline-first-steps-developing-and-implementing-regional-environmental-management>

¹³ RFMOs have a management mandate and a Secretariat operating under a governing body of member states, while Agreements have no management authority or formal institutional structure. See: <http://www.fao.org/fishery/topic/16800/en> (accessed: December 2018).

- The 2001 International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU).
- The 2009 Food and Agriculture Organizations Port State Measures Agreement¹⁴ focuses on Illegal, Unregulated and Unreported fishing, as well as various binding and voluntary agreements, codes of conduct and plans of action.
- The 2009 international Guidelines for the Management of Deep-sea Fisheries in the High Seas.

The 2003 technical guidelines for fisheries management „Fisheries Management 2. The Ecosystem Approach to Fisheries“.

RFMOs focus primarily on conservation and management measures for the target species covered by their agreements. In general, the effectiveness of conservation and management measures that address non-target species and associated and dependent species needs to be improved. RFMOs of particular relevance to the Southeast Pacific include the Inter-American Tropical Tuna Commission (IATTC) and the Southeast Pacific Regional Fisheries Management Organization (SPRFMO).

The Inter-American Tropical Tuna Commission (IATTC) and the effectiveness of its sustainable use and conservation measures in high seas areas

Ecosystem-based fisheries management (also known as the ecosystem approach to fisheries), is nowadays recognized as a necessity by many RFMOs (Juan-Jordá et al., 2018; Fischer, 2020), including the Inter-American Tropical Tuna Commission (IATTC). Of the CPPS countries, Colombia, Peru, and Ecuador are part of IATTC, while Chile is a Cooperating Non-Member. For many of the RFMOs, the ecosystem approach to fisheries is a mandate. In the case of the IATTC, the Antigua Convention of 2003, which entered into force in 2010, stipulates „to adopt, where necessary, measures and recommendations for the conservation and management of species belonging to the same ecosystem and which are affected by fishing for fish species covered by this Convention, or which are dependent on or associated with these species, with a view to

maintaining or restoring populations of such species above levels at which their reproduction may become seriously threatened“ (Duffy et al., 2019). Despite this, and numerous resolutions and recommendations that address fisheries management in this more holistic manner (see Table 1), there remain significant barriers and challenges to making the ecosystem approach operational within tuna RFMOs.

Unlike other (tuna) RFMOs, IATTC has an institutional group of scientists that provides management recommendations, Juan-Jordá et al. (2018) note that this RFMO stands out among other things for having established limits on bycatch of marine mammals (dolphins) and for having extensive information on distribution, population status, and bycatch rates in several areas of the eastern Pacific. Similarly, according to Juan-Jordá et al. (2018), IATTC has stood out since 1950, for conducting studies on the diet of target species to integrate them into ecosystem models (e.g., Ecopath with Ecosim) and in the development of ecological and ecosystem indices (e.g., trophic level of the catch). On the other hand, none of the tuna RFMOs, including the IATTC, appear to have so far developed scientific practices or activities to guide management decisions for the protection of sensitive habitats. The IATTC, as well as the other tuna RFMOs are, in the best-case scenario, halfway implementing an ecosystem approach to fisheries resource use. One of the major criticisms stems from the apparent lack of long-term vision in implementing the approach in addition to the lack of a formal implementation plan. These problems are compounded by the decision-making structure of many of the tuna RFMOs, including the IATTC, where the need for a general consensus means that the decisions of the majority can be blocked by a few countries (Juan-Jordá et al., 2018; Leroy & Morin 2018). Juan-Jordá et al. (2018) assessed IATTC progress on four ecological components related to ecosystem management (Figure 3) of fisheries as follows:

¹⁴ Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing, opened for signature on November 22, 2009 (entered into force on June 5, 2016).

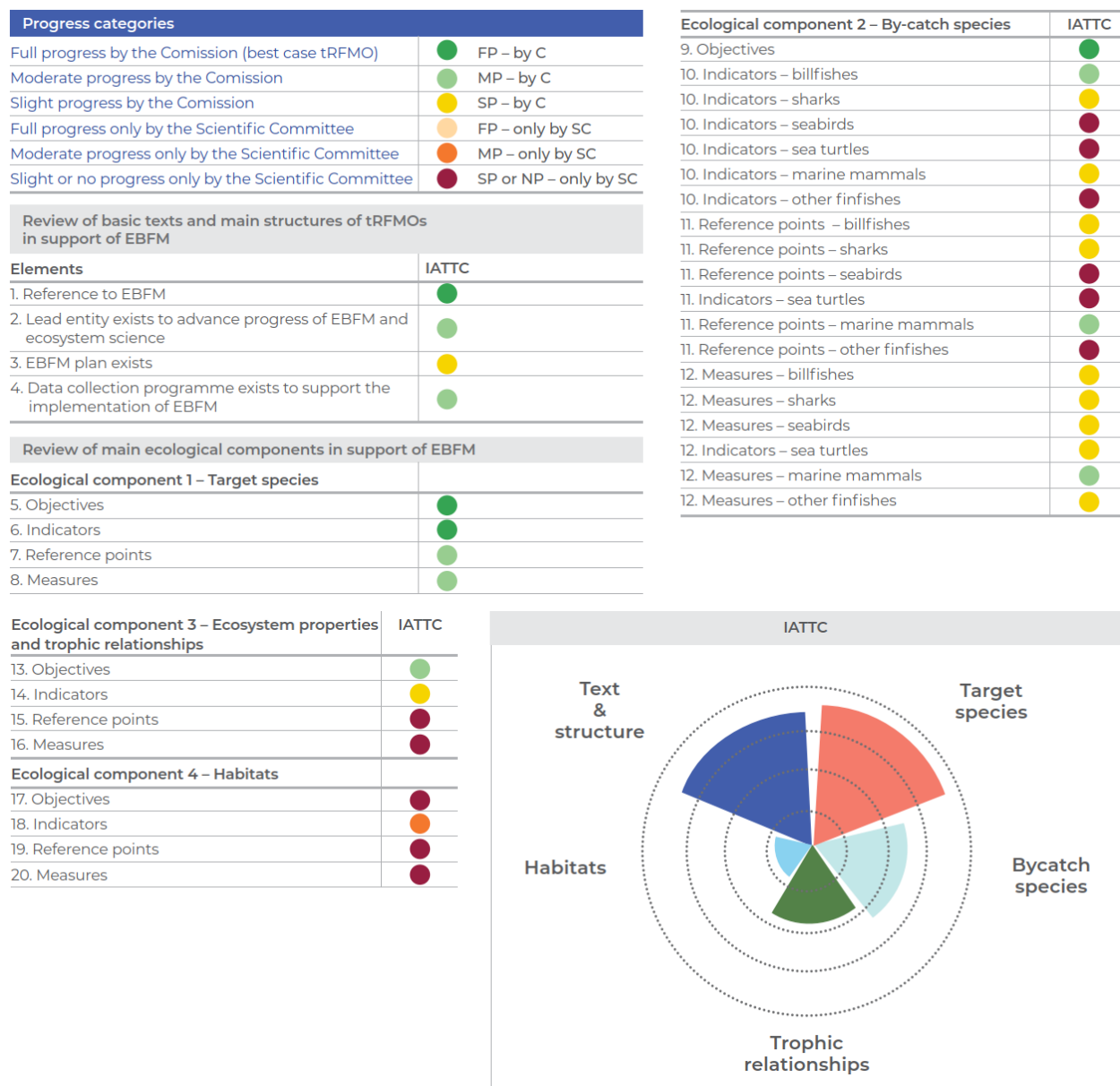


Figure 3: Left: Status of the implementation of the ecosystem approach in the IATTC according to 20 elements; Right: Radar plot indicating the progress of the IATTC in the implementation of the ecological components of ecosystem approach management. Source: Juan-Jordá et al. (2018).

As can be seen, it is evident that there is progress in incorporating EBFM into the commission structures. However, much of the progress so far appears to be at the level of the commission's scientific committee without being elevated to the operational level. In particular, very little progress is evident in this analysis on aspects related

to habitat and trophic interactions, while moderate progress is observed with respect to the management of non-target (by-catch) species, with the most significant progress on issues related to the management of target species in the tuna fishery in the IATTC region.

The South Pacific Regional Fisheries Management Organization (SPRFMO) and its mandate for conservation in the South Pacific Ocean

SPRFMO is an RFMO of recent origin (adopted in 2009 and entered into force in 2012) that currently has 15 member States and three co-operating¹⁵ States. Of the CPPS countries, Chile, Peru, and Ecuador are part of this RFMO, while Panama is a cooperating state. Colombia has attended some meetings, but is not currently a member of this RFMO. The clear mandate of the SPRFMO is to „ensure the long-term conservation and sustainable use of fishery resources in the South Pacific Ocean and, in doing so, to safeguard the marine ecosystems in which these resources are found“. This RFMO has focused primarily on the management of Jack Mackerel, Orange Roughy and Giant Squid

stocks. Some articles of the SPRFMO convention (Article 20 on management and conservation measures) seem to take into account the issue of conservation not only of target species, but also of non-target species and habitats, more broadly than other tuna RFMOs. In addition to this, SPRFMO has a much more nuanced decision-making system than the rest of the existing RFMOs (see Leroy & Morin, 2018). Although decisions are made by consensus, in the case that there is no consensus, there are mechanisms within SPRFMO to reconcile different points of view and even to make majority decisions when reconciliation of points of view has not been possible. Because of these characteristics, among others, some authors have pointed to SPRFMO as a model RFMO to be followed for the conservation of species of fishery interest, but also of ecosystems in high seas waters (Figure 4; Schiffman, 2013).

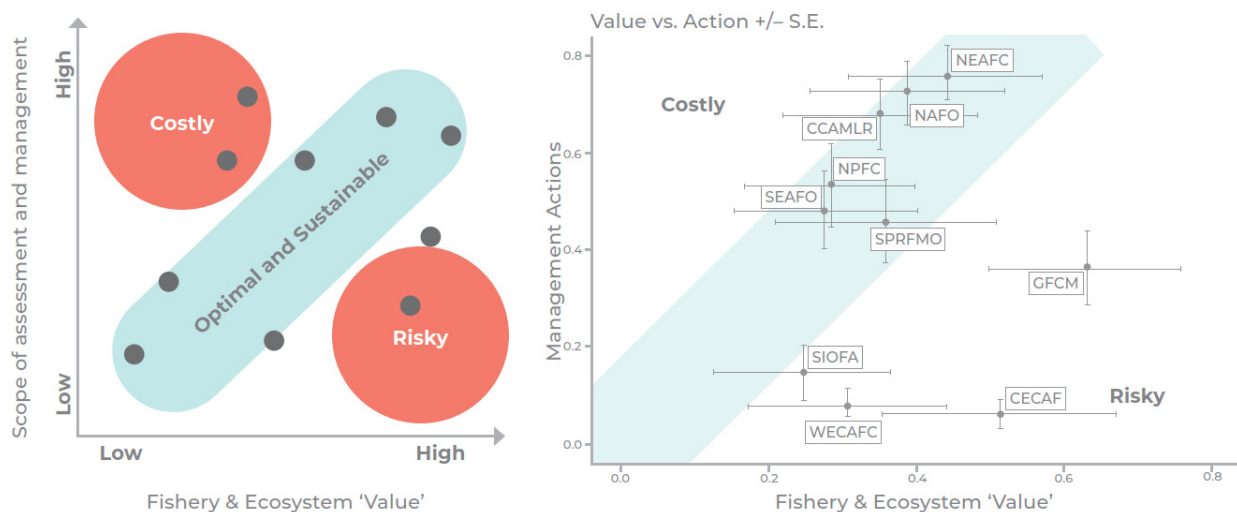


Figure 4: Conceptual cost-benefit framework for fisheries management and its application for responsible RFMOs for bottom fisheries worldwide. SPRFMO falls in the space termed „optimal and sustainable“ according to the 99 criteria set out in Bell et al. (2019). Figures taken from this reference.

¹⁵ <https://www.sprfmo.int/>

Table 3: Measures established by the Inter-American Tropical Tuna Commission in the Southeast Pacific Ocean

Types of measures	Examples	Objective	Comments
Inter-American Tropical Tuna Commission (IATTC)*			
Zoning - temporary closures	<u>Resolution C-20-06</u>	<i>Conservation and management measures for tropical tunas temporary closure of the El Corralito area.</i> Fishing for yellowfin, bigeye and skipjack tuna by purse seiners in the area between 96° and 110°W and between 4°N and 3°S, known as the „corralito“, will be closed from 00:00 hours on October 9 until 24:00 hours on November 8.	These regulations appear to work adequately for the vessels to which the measures apply (category 4-6 purse seiners, and vessels with longlines greater than 24 m in length). Since the measure does not apply to smaller vessels, it is not clear what impact fishing activities have on the effectiveness of the measures.
Bycatch	<u>International Dolphin Conservation Program (IDCP)</u>	<i>Reducing dolphin mortality.</i> The Agreement on the International Dolphin Conservation Program (AIDCP), which entered into force in February 1999, established this program, successor to the 1992 program. Objectives: 1. To progressively reduce the incidental dolphin mortality in the tuna purse-seine fishery in the Agreement Area to levels approaching zero, through the establishment of annual limits; 2. With the goal of eliminating dolphin mortality in this fishery, to seek ecologically sound means of capturing large yellowfin tuna that are not in association with dolphins; and 3. To ensure the long-term sustainability of the tuna fishery in the Agreement Area. To ensure the long-term sustainability of the tuna stocks in the Agreement Area, as well as that of the marine resources related to this fishery, taking into consideration the interrelationship among species in the ecosystem, with special emphasis on, inter alia, avoiding, reducing, and minimising bycatch and discards of juvenile tunas and non-target species.	The program that the IATTC has developed around this measure is unique among the world's tuna RF-MOs with limits on dolphin bycatch, extensive scientific information on dolphin populations in the region (Juan-Jorda et al., 2018).
	<u>Resolution C-11-02</u>	<i>Reduce incidental catches of seabirds.</i> Mitigate the impact on seabirds of fishing for species covered by the IATTC.	The IATTC commissioned the internal bycatch working group to scientifically evaluate the effectiveness of this measure. Since 2011 there has been no new resolution on this matter. It is difficult to establish the effectiveness of these measures partly because the requirement for on-board observers on vessels is 5%. This percentage appears to be low.
	<u>Resolution C-04-05</u>	<i>Bycatch management.</i> Recognize the value of consolidating the operational parts of these resolutions into an overall bycatch resolution.	
	<u>Resolution C-05-03 & C-16-04 Amends to C-05-03 Sharks</u>	Reduction of incidental mortality of juvenile tuna, and release of non-target species. <i>Recommendations on the prohibition of shark catches in deep waters.</i> Recognizes the need to collect data on catch, effort, discards and trade, as well as information on the biological parameters of many species, as part of the conservation and management of sharks.	

Types of measures	Examples	Objective	Comments
Inter-American Tropical Tuna Commission (IATTC)*			
Monitoring, control and surveillance (MCS)	<u>Resolution C-04-03</u>	<i>Monitoring of illegal, unreported and unregulated fishing.</i> Recognizes the importance of cooperating with respect to sightings of vessels that may be fishing contrary to IATTC conservation and management measures.	It is difficult to establish the effectiveness of these measures partly because the requirement for on-board observers on vessels is 5%. This percentage appears to be low.
	<u>Resolution C-19-08</u>	<i>Observer programs.</i> This resolution is specific to longline vessels and recognizes the need to collect scientific information on target species, as well as comprehensive data on interactions with non-target species, particularly sea turtles, sharks and seabirds.	It is difficult to establish the effectiveness of these measures partly because the requirement for on-board observers on vessels is 5%. This percentage appears to be low.
	<u>Resolution C-14-02</u>	<i>Vessel Monitoring System (VMS).</i> Recognizes the value of satellite-based Vessel Monitoring Systems (VMS) for IATTC conservation and management programs.	Unknown
	<u>Resolution C-14-03</u>	<i>The creation of the special sustainable development fund for highly migratory species fisheries to strengthen the institutional capacity of developing countries and territories:</i> The resources of the Fund shall be derived from the fixed annual contribution of 2% of the Commission's budget earmarked for capacity building and strengthening of developing coastal countries and territories. In addition, the budget shall be reinforced by other voluntary contributions obtained from Members or from national and international agencies or entities interested in strengthening the capacities of developing countries and territories.	
Fishing gear	<u>Resolution C-99-07</u> <u>RESOLUTION C-13-04</u>	<i>FAD management.</i> Establishes measures, as the fish aggregating device (FAD) fishery has grown substantially over the past five years, increased catches of juvenile tunas, particularly yellowfin and bigeye tuna, in the purse seine fishery in the Eastern Pacific Ocean (EPO).	Unknown
Measures focused on some species	<u>Resolution C-16-02</u>	<i>Control rules for catches of tropical tunas (yellowfin, bigeye and skipjack tunas)</i>	Unknown

* The complete lists of IATTC resolutions can be found here:
<https://www.iattc.org/ResolutionsActiveENG.htm>.

Table 4: Measures established by the South Pacific Regional Fisheries Management Organisation (SPRFMO) in the Southeast Pacific

Types of measures	Examples	Objective	Comments
South Pacific Regional Fisheries Management Organisation (SPRFMO)**			
VME	<p><u>CMM 13-2021 - Management of New and Exploratory Fisheries in the SPRFMO Convention Area</u></p> <p><u>CMM 03-2021 - Management of Bottom fishing in the SPRFMO Convention Area</u></p>	Benthic protection only. CMM 03-2021 states that bottom fishing in the convention area can only be conducted in the three management areas established by SPRFMO. Any proposed new bottom fishery in the convention area must be considered exploratory and governed under CMM 13-2021.	The use of „move-on rules“ by SPRFMO is a way to provide rapid management responses when recent scientific evidence indicates an adverse effect on the ecosystem.
Monitoring, control and surveillance (MCS)	<p><u>CMM 02-2021 Standards for the Collection, Reporting, Verification and Exchange of Data</u></p> <p><u>CMM 19-2021 Markings and Identification of Fishing Vessels</u></p> <p><u>CMM 16-2021 The SPRFMO Observer Programme</u></p> <p><u>CMM 15-2016 Vessels without Nationality in the SPRFMO Convention Area</u></p> <p><u>CMM 4-2020 Establishing a List of Vessels Presumed to have Carried Out IUU Fishing</u></p> <p><u>CMM 05-2021 Establishment of the Commission Record of Vessels Authorised to Fish</u></p>	These conservation and management measures are generally aimed at improving standards for collecting, reporting, verifying and exchanging information on fishing operations in the RFMO area.	No comment
Fishing gear	<p><u>CMM 08-2019 Gillnets in the SPRFMO Convention Area</u></p> <p><u>CMM 17-2019 Fishing Gear and Marine Plastic Pollution in the SPRFMO Convention Area</u></p>	These conservation and management measures are generally aimed at regulating the use of fishing gear in the RFMO area as well as controlling the proliferation of ghost nets and plastic pollution.	No comment
Bycatch	<u>CMM 09-2017 Minimising Bycatch of Seabirds in the SPRFMO Convention Area</u>	Its purpose is to reduce seabird bycatch in the RFMO area.	No comment

Types of measures	Examples	Objective	Comments
South Pacific Regional Fisheries Management Organisation (SPRFMO)**			
Measures focused on some species	<u>CMM 14a-2019 Exploratory Fishing for Toothfish by New Zealand-Flagged Vessels</u> <u>CMM 14b-2021 Exploratory Potting Fishery in the SPRFMO Convention Area</u> <u>CMM 14d-2020 Exploratory Fishing for Toothfish by Chilean-Flagged Vessels in the SPRFMO Convention Area</u> <u>CMM 14e-2021 Exploratory Fishing for Toothfish by European Union-Flagged Vessels in the SPRFMO Convention Area</u> <u>CMM 18-2020 Management of the Jumbo Flying Squid Fishery</u> <u>CMM 01-2021 Trachurus murphyi</u>	Measures aimed at regulating a particular species occurring in the RFMO area.	No comment

** The complete list of SPRFMO resolutions can be found here: <https://www.sprfmo.int/measures/>

Sala et al. (2018) recently revealed that ABNJ fisheries are highly dependent on subsidies. Without them, it is estimated that 54 % of current ABNJ fisheries would be unprofitable at current fishing rates. Moreover, these subsidies are more than double the most optimistic estimates of benefits. At the same time, Sustainable Development Goal (SDG) 14.6 calls to prohibit forms of subsidies that contribute to overfishing and overcapacity. However, to date

the issue remains highly contentious within the World Trade Organization and member States have yet to agree on an approach to eliminate these subsidies to the fishing industry and they therefore continue to contribute to overfishing and overcapacity in ABNJ. This is of utmost importance for the focal area of this report, as the only existing closed area in ABNJ is a 72-day temporary tuna fishing closure in the area west of the Galapagos known as the Corralito.

2.2.1.4 Cross-sectoral measures - including marine protected areas

A Marine Protected Area (MPA) is known as a geographically defined, legally recognized, managed space whose ecological values are conserved in the long term due to its sufficient size, protecting nature and associated ecosystem and cultural services. Both the IUCN and the CBD have developed the elements of this definition and established categories for the management and governance of protected areas (Dudley, 2008 and Borrini-Feyerabend et al., 2013) and considering biodiversity conservation as a central element.

In the case of MPAs, specific categories (IUCN¹⁶ categories) were also established in order to give a wider scope as to what is and is not a MPA, as there are a number of other area-based measures that lead to positive conservation outcomes, even though they were not necessarily created for that purpose, such as locally managed marine areas, fisheries management areas or private protected areas. Recently a new scheme was published to categorize MPAs depending on their degree of protection and stage of establishment (Gronrud-Covert et al., 2021). This new scheme seeks to complete the IUCN MPA categories.

Currently, MPAs have reached a coverage of 7.65% (WDPA, 2021) of the surface of the world's oceans, generating various benefits associated with the main activities of the sea such as fishing, bioprospecting and maintaining the gene pool of commercially important species. However, the challenges of managing these areas, as well as their possible replication in the high seas, where 1.18% are reported as MPAs¹⁷, range from the limited capacity for monitoring and surveillance in remote and large areas (Wilhelm et al., 2014), to the difficulty in establishing responsibilities for the protection of the marine environment beyond national jurisdictions, for example, with respect to illegal, unregulated, and unreported fishing. To date, no MPAs have been declared in the ABNJ of the Southeast Pacific.

It is therefore necessary to have networks of MPAs that can ensure that connectivity in this environment, as one of its great advantages, is

effectively maintained to achieve far-reaching impacts on the entire marine environment and biodiversity. The large MPAs and, above all, the networks of MPAs, are in this sense important guarantors of integrated management in that they facilitate the establishment of joint strategies for certain areas, which would undoubtedly not be able to generate such impacts if managed in isolation. Similarly, environmental changes generated by climate change, could mean that mobile MPAs are required in ABNJ (Maxwell et al., 2020). This is particularly important when considering the spatial and temporal dynamics of movements of many species in ABNJ (e.g., penguins, Thiebot & Dreyfus, 2021).

Throughout the Southeast Pacific and in other neighbouring countries, there are some examples of networked management of marine protected areas that are worth exploring in terms of integrated ecosystem management, their forms of operation, knowledge exchange and concrete proposals for management programs. This is the case of the Marine Corridor of the Eastern Tropical Pacific (CMAR), whose central objective is related to the strengthening of core areas (five national parks in four member countries of the initiative), with a landscape vision beyond the limits of these areas, fundamental for the successful conservation of the areas to the extent that it seeks to manage the conditions of this broad marine ecoregion (see recent analysis of CMAR in Enright et al., 2021).

There are countless experiences related to networks of marine protected areas from which important lessons can be learned, such as the need to establish adequate coordination mechanisms, work in coordination with governmental agencies but also with international organizations in charge of managing the marine environment (e.g., RFMOs, ISA, IMO), involve grassroots organizations and local communities in the generation of knowledge related to the management of marine and ocean ecosystems, and establish long-term financing mechanisms to achieve the central objectives, usually associated with control and surveillance, research and measurement of ecosystem health, and mitigation of the effects of pressures from anthropogenic activities outside jurisdictional boundaries. An example of

¹⁶ <https://portals.iucn.org/library/node/48887>

¹⁷ These areas have been designated and/or proposed by intergovernmental organizations: the Commission for the Convention for the Marine Environment of the North-East Atlantic Ocean (OSPAR) and the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR).

international collaboration in remote areas is the Big Ocean network (<https://bigoceanmanagers.org>), which brings together practitioners from Large-Scale Marine Protected Areas (LSMPAs) around the world, enabling the sharing of experiences, resources, and initiatives to achieve effective implementation of LSMPAs (Toonen et al., 2013; Wilhelm et al., 2014; Friedlander et al., 2016).

Freestone et. al. (2016) and Laffoley & Freestone (2017) have identified possible applications of the principles of the World Heritage Convention (UNESCO, 1972) to sites of special importance for nature and culture in the high seas, opening the possibility of generating successful management tools for biodiversity in ABNJs. These considerations, which seek to accommodate the exercise of heritage protection of importance to humanity in areas not governed by a particular State, are projected as one of the main contributions to the discussion on the relevance of emulating the functional tools under nation-state structures to a new multi-stakeholder ocean governance in a combination of States, international organizations and the private sector, where responsibilities and benefits should be shared effectively to meet the management needs that such tools imply, under current scenarios.

The key call of the World Heritage Convention to protect sites of Outstanding Universal Value under a form of protection and management that maintains the integrity of a given site is a fundamental criterion. This is especially the case for considering that a combination of management measures for defined sites where the type of management must be determined based on considerations of their attributes, vulnerability and capacity to provide, for defined periods of time, a fundamental ecosystem service for humanity.

In addition, several global agreements could also be considered to establish measures to underpin

conservation efforts in ABNJ. The Convention on Migratory Species (CMS) focuses primarily on the protection of migratory species through the protection of their habitats and is applicable through its subsidiary agreements for the protection of several marine species, including cetaceans and turtles. The International Whaling Commission (IWC) provides for international regulation of whaling and management of whale populations, while the Agreement on the Conservation of Albatrosses and Petrels (ACAP) strives to conserve albatrosses and petrels by coordinating international activities to mitigate threats to their populations.

Similarly, CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement (signed by all CPPS member States) that protects endangered plants and animals. The treaty was signed in 1973 and entered into force in 1975. In recent years, CITES has dealt with issues related to endangered marine species such as sharks and seahorses. Introduction from the sea (IFS) is a type of trade regulated under CITES and refers to the movement into a State of organisms of any species taken at sea outside the jurisdiction of any State (i.e., in ABNJ). In this case the regulation refers to species listed in CITES¹⁸ Appendices I and II. Some point out that some of the CITES mechanisms for enforcing the established regulations make this multilateral environmental treaty effective and could provide valuable recommendations for the BBNJ¹⁹ agreement under discussion. As more species are added to the CITES appendices, the potential for some species inhabiting ABNJ to be listed and thus enjoy some protection under this treaty increases. However, it is also key to improve interactions between CITES and other bodies with jurisdiction over ABNJ such as RFMOs (Friedman, 2019).

¹⁸ <https://cites.org/esp/prog/ifs.php>

¹⁹ <https://www.iddri.org/en/publications-and-events/blog-post/trading-experiences-what-can-global-ocean-treaty-learn-1970s>

Table 5: Cross-sectoral management measures with potential application in ABNJ.

Name	Application in the region	Objective	Comments
MPA	Within the Southeast Pacific ABNJ, there are no MPAs in ABNJ, however, there are several oceanic MPAs within the EEZs of Ecuador, Colombia, Peru and Chile.	A geographically defined area that is designated or regulated and managed to achieve specific conservation objectives (CBD definition of protected area).	Not applied in the Southeast Pacific; however, jurisdictional MPAs are a fundamental reference considering that, based on information from the measurements of MPA management effectiveness in Southeast Pacific countries, it is possible to draw conclusions about the conservation status of these areas based on their management under this figure; there are specific global parameters to measure this effectiveness, in most cases with the global reference of the METT (WDPA, 2021; Protected Planet Report LAC, 2021).
MPA Networks	Eastern Tropical Pacific Marine Corridor - CMAR	CMAR is a regional initiative for conservation and sustainable use in the marine protected areas and zones of influence of the Galapagos Islands (Ecuador), Malpelo and Gorgona Islands (Colombia), Coiba Island (Panama) and Cocos Island (Costa Rica). It was signed by the Ministries of Environment of the four countries through the San José Resolution in 2004. The corridor is mostly in EEZs but some areas are in ABNJ.	CMAR has been an example of regional coordination for the region's marine areas, based on transboundary cross-cutting themes. The main challenges facing CMAR are to consolidate the financial sustainability of the initiative, establish operating models for joint protocols according to the requirements of each country, develop control and surveillance strategies, and involve the fisheries sector to a greater extent in CMAR actions (see Enright et al., 2021).
World Heritage Sites	Galapagos, Malpelo, Rapa Nui	Operated by the United Nations Educational, Scientific and Cultural Organization (UNESCO), the 1972 World Heritage Convention establishes guidelines for declaring sites of outstanding natural and cultural value to humanity. There are three sites in the Southeast Pacific EEZ. There are proposals for the use of this measure in the ABNJ (Sargasso Sea, Costa Rica Dome; Johnson et al., 2018a).	This UNESCO figure has recently been suggested to be extended to ABNJ (see section 2.2.2.2. of this report). The fact that there are already declared areas of this type in the region would suggest that the declaration of new areas in ABNJ in the future is possible. Recent studies have highlighted the exceptional natural and cultural importance of the Salas y Gómez and Nazca Ridges (Wagner et al., 2021; Delgado et al., 2022), so this region could be considered for future proposals for World Heritage Sites.

2.2.1.5 Addressing climate change and pollution from the continents

In addition to the measures to support conservation efforts described above, there are important global efforts that are needed to address problems that do not necessarily occur in ABNJ, but have an impact on ABNJ, including climate change mitigation measures and management of land-based sources of pollution.

Climate change must be addressed at its root and global emissions must be reduced to reach the 1.5 °C target of the Paris Agreement (UNFCCC, 2015). While there are also numerous options to support conservation efforts, such as the protection and restoration of terrestrial and marine ecosystems, precautionary ecosystem-based resource management, and the reduction of pollution and other ocean stressors. MPAs and MPA networks can also contribute to the challenge of addressing climate change by helping to restore ecosystem health and supporting carbon sequestration and storage (IPCC, 2019).

The United Nations General Assembly (UNGA) resolution on oceans and the law of the sea (2013) encourages Parties to address land-based sources of pollution, including marine debris (Resolution A/RES/68/70). More recently, at the fifth meeting of the United Nations Environment Assembly (UNEA) in February 2021, many governments spoke in favour of an international treaty to combat plastic pollution. In February 2022, Peru and Rwanda will present a resolution to establish an intergovernmental negotiating committee to begin discussing a possible treaty. To address the problem of plastic pollution, it is necessary to use transformative approaches that address the problem from measures to reduce the production of plastics and the establishment of a circular economy for these materials (see Simon et al., 2021).

2.2.1.6 Coordinating measures to support conservation efforts

The measures to support conservation efforts described above each have their own merits and objectives. There is no one-size-fits-all approach. The effectiveness of conservation measures will depend on a number of key factors and, with re-

gard to implementation in ABNJs, the following factors should be taken into account:

- Need to improve cooperation and complementarity between different legal instruments and institutions to facilitate a more integrated approach across the options available to support conservation efforts (Warner, 2014).
- Need to develop a shared long-term vision for the priority areas to create a management approach that integrates the different measures towards a common goal and objectives.
- Need to facilitate an integrated multi-tool approach among instruments and institutions to support their complementarity and effectiveness.
- Need for comprehensive and ongoing research that generates environmental and biological information, data, and time series for ABNJ to support the effectiveness of conservation efforts while improving scientific knowledge to protect BBNJ (De Santo 2018).
- Need for compliance and enforcement controls to support the effectiveness of legal instruments and institutions towards conservation objectives (Warner, 2014).

In this context, simplification, streamlining and integration of measures are going to be essential to develop a comprehensive and cost-effective approach to biodiversity conservation and management in ABNJ in the Southeast Pacific (Warner, 2014).

Despite the availability of all the conservation measures outlined above, coordination of efforts between the relevant organizations is still insufficient to ensure adequate coverage of the various conservation targets. Each of the measures is either too specific with respect to the threats it is supposed to prevent or control, or too general to address the key pressures identified at a more local level. It is therefore necessary to promote the integration of the objectives and actions of existing conservation measures and to review the batteries of specific actions to ensure that they address all relevant key pressures identified with respect to the conservation of the different components of biodiversity in the ABNJ (Figure 5).






Measures to support conservation efforts				
Present in the region?	Sector	Key actor	Measures and key features	Legal status
	 Maritime Transport		PSSA → Triggers step to set IMO regulations	Legally binding to signatories of IMO
	 Maritime Transport		MARPOL Special Area → Pollution management	Legally binding to signatories of IMO
	 Deep Seabed Mining		APEI → Area Based Management Tools	Legally binding to signatories of UNCLOS
	 Deep Seabed Mining		REMPs → Monitoring and protection obligations	Legally binding to signatories of UNCLOS
	 Fishing		VME → No bottom fishing	Legally binding to members of RFMO
	 Fishing		RFMOs → Various Conservation and Management Measures	Legally binding to members of RFMO
	 Fishing		Appendix I, II, III → Control trade of listed species	Legally binding to signatories of CITES
	 Cross-Sectoral		MPA/MPA networks → Various levels of protection	Legally binding to states who have ratified it
	 Cross-Sectoral		Marine World Heritage Sites → Protection of culturally important marine sites	Legally binding to States signatory to World Heritage Site Convention
	 Cross-Sectoral		CMS Appendix I, II Resolutions → Habitat and species protection	Legally binding to signatories of CMS
	 Cross-Sectoral		IWC → Conservation and management of whales	Legally binding to signatories of IWC
	 Cross-Sectoral		ACAP → Conservation of Albatross and Petrels	Legally binding to signatories of ACAP

Figure 5: Non-exhaustive summary of relevant and potentially applicable measures that support conservation efforts, the key sectors and stakeholders involved in each, their regulatory framework, and whether or not they are in use in ABNJ in the Southeast Pacific (when the measure is in effect in the region, it is represented by a South America icon).

Table 6: Linking biodiversity components and key pressures in the Southeast Pacific with potential measures to support conservation efforts.

Biodiversity components	Key pressures	Measures to support conservation effort
 <p>Seabed habitats (benthic)</p> <p>Hydrothermal vents in the Southeast Pacific include:</p> <ul style="list-style-type: none"> ➤ Galapagos Fault (5 active, 7 active-inferred, 7 inactive) ➤ Southeast Pacific Rise (27 active, 35 active-inferred) ➤ Pacific-Antarctic Ridge (2 active) ➤ Chilean mountain range (2 active-inferred) <p>Seamounts are abundant in the Southeast Pacific and the FAO 87 area is estimated to have 8.03 % of the world's seamounts, which are mainly found along:</p> <ul style="list-style-type: none"> ➤ Eastern Pacific Rise in the north and south ➤ Eastern and Western Pacific 	<p>Physical disturbances and destruction of the seabed are a consequence of:</p> <ul style="list-style-type: none"> ➤ Physical asphyxia ➤ Disturbances ➤ Sediment resuspension ➤ Organic loading ➤ Toxic contamination or plume formation <p>It results from human activities such as:</p> <ul style="list-style-type: none"> ➤ Fishing - in particular bottom trawling for commercial fisheries ➤ Laying of submarine cables for communication and information purposes (negligible) ➤ Offshore prospecting and potential mining activities <p>Non-native species transported by ships or <i>plastic rafting</i> could be a threat to the unique biodiversity of the Southeast Pacific seabed.</p> <p>Climate change affects the physical-chemical environment of benthic habitats and the species that inhabit them.</p>	<ul style="list-style-type: none"> ➤ Vulnerable Marine Ecosystems (VME) ➤ Fishery conservation measures ➤ Restrictions on deep-sea mining or Areas of Particular Environmental Interest (APEIs) ➤ Marine Protected Areas (MPA) (including MPA networks) ➤ IMO Convention on ballast water management ➤ Climate change mitigation measures

Biodiversity components	Key pressures	Measures to support conservation effort
 <p>Water column habitats (pelagic)</p> <p>From an oceanographic point of view, at least four regions can be identified in the Southeast Pacific:</p> <ul style="list-style-type: none"> ➤ Eastern Equatorial Pacific ➤ Transition zone of the Humboldt Current System ➤ South Pacific Gyre ➤ Eastern sub-Antarctic Pacific <p>Water column variables in this region, as well as the position of convergent zones, translate into food web structures, fish productivity and megafaunal habitats.</p>	<p>One of the main pressures on water column habitats is pollution, including:</p> <ul style="list-style-type: none"> ➤ Hazardous chemicals (e.g., heavy metals, pesticides) ➤ Nutrients (e.g., ammonia, nitrates, nitrites, and phosphates) ➤ Suspended solids ➤ Microbiological contaminants (e.g., bacteria and viruses) ➤ Hydrocarbons ➤ Marine debris (mainly plastics, microplastics and ghost gear). <p>The main sources of marine pollution come from:</p> <ul style="list-style-type: none"> ➤ Maritime transport ➤ Offshore prospecting and potential mining activities ➤ Land-based activities ➤ Dumping of waste at sea <p>Non-native species transported by ships or plastic waste (<i>plastic rafting</i>) could be a threat to biodiversity in water column habitats in the Southeast Pacific, affecting ecosystem functioning in these productive habitats.</p> <p>Climate change is of great concern and food webs are expected to change within the ocean. Species and communities could shift into new areas as their habitats and feeding grounds are affected.</p>	<ul style="list-style-type: none"> ➤ Preventing discharges and pollution from vessels ➤ Particularly Sensitive Sea Areas (PSSAs) ➤ Regulation on chemical use ➤ Waste management from land-based sources ➤ Marine Protected Areas (MPAs) (including MPA networks) ➤ Adaptive management approaches ➤ IMO Convention on ballast water management ➤ Climate change mitigation measures
 <p>Fish</p> <p>For the Southeast Pacific region, there are two areas of particular biological interest:</p> <ul style="list-style-type: none"> ➤ Equatorial High Productivity Zone (EHPZ) ➤ The Salas y Gómez and Nazca ridges (SGNR) <p>The main species targeted by fisheries in the Southeast Pacific are tuna and Chilean jack mackerel.</p>	<p>The most important activity in terms of the volume of fish and other non-fish species extracted in the ABNJ is commercial fishing.</p> <p>The spatial distribution, and possibly abundance, of targeted species is expected to change due to the impacts of climate change.</p>	<ul style="list-style-type: none"> ➤ Fishery conservation measures, such as bycatch mitigation, Total Allowable Catch (TAC) or gear restrictions ➤ Marine Protected Areas (MPAs) (including networks) and other area-based management tools ➤ Prevention of discharges and pollution from vessels ➤ Regulation on chemical use ➤ Waste management from land-based sources ➤ Climate change mitigation measures

Biodiversity components	Key pressures	Measures to support conservation effort
 <p>Marine Mammals</p> <p>Approximately 30 species of cetaceans (whales) are found in the Southeast Pacific. Among the eight species of eared seals of the family Otariidae present in the Southeast Pacific, three are considered Least Concerned, two are considered Endangered, two are Near Threatened, and one is Vulnerable according to the IUCN. Of the true seal family (Phocidae), the two species present in the region are considered Least Concerned.</p>	<p>Threats to marine mammals and turtles in ABNJ of the Southeast Pacific include:</p> <ul style="list-style-type: none"> Interaction with commercial fisheries: bycatch and entanglement Marine pollution (e.g., plastics and microplastics), as well as ghost gear Collisions with ships Underwater noise (predominantly from maritime transport, but also from fishing activities (due to trawling, sonar, or operational purposes), as well as from oil and gas exploration and extraction (drilling), and associated maintenance operations, including vessel operations). <p>The spatial distribution, and possibly abundance, of marine mammals and turtles is expected to change due to the impacts of climate change.</p>	<ul style="list-style-type: none"> Fishery conservation measures, including bycatch mitigation and measures to prevent dumping of ghost gear Marine Protected Areas (MPAs) (including networks) Particularly Sensitive Sea Areas (PSSAs) Regulation of navigation, e.g., routes, noise restrictions Prevention of discharge and pollution from vessels Regulation on chemical use Waste management from land-based sources Climate change mitigation measures
 <p>Turtles</p> <p>Five species of sea turtles can be found in this region.</p> <ul style="list-style-type: none"> Loggerhead (<i>Caretta caretta</i>) Green (<i>Chelonia mydas</i>) Leatherback turtles (<i>Dermochelys coriacea</i>) Hawksbill (<i>Eretmochelys imbricata</i>) Olive Ridley turtles (<i>Lepidochelys olivacea</i>) 		
 <p>Seabirds</p> <p>There are four major groups of seabird species throughout the Pacific Ocean: 23 species in the Antarctic (all with circum-polar distribution), 39 in the sub-Antarctic, 52 in the subtropics and 51 in the tropics.</p> <p>Two places in the region should be mentioned in terms of seabirds moving to the ABNJ: the Galapagos and Juan Fernandez archipelagos.</p>	<p>Threats to seabirds in ABNJ of the Southeast Pacific include:</p> <ul style="list-style-type: none"> Interaction with commercial fisheries: bycatch and entanglement Incidental mortality caused by fishing (bycatch) Impacts of climate change on large-scale ocean productivity and circulation patterns Disruption to migration systems or food availability (depletion due to over-fishing) Ingestion of plastics 	<ul style="list-style-type: none"> Bycatch mitigation measures Marine Protected Areas (MPAs) (including networks) and other area-based management tools Climate change mitigation measures Waste management from land-based sources

Source: Table is based on research results from the STRONG High Seas project, published in: Boteler et al., 2019. 'Ecological Baselines for the Southeast Atlantic and Southeast Pacific: Status of Marine Biodiversity and Anthropogenic Pressures in Areas Beyond National Jurisdiction', STRONG High Seas Project, 2019.

2.2.2 Resources to identify key areas and support conservation efforts in ABNJ

In addition to the measures mentioned above, there are science-based tools that highlight areas of biological and ecological importance.

These include in particular the following: Ecologically or Biologically Significant Areas (EBSAs), Key Biodiversity Areas (KBAs), including Important Bird and Biodiversity Areas (IBAs) (IBAs form the core part of the KBA network), and Important Marine Mammal Areas (IMMAs).

Table 7: Resources to support conservation efforts in ABNJ

Name	Application in the region	Objectives	Comments
Important Bird and Biodiversity Areas - IBAs	Seven (numbered 20, 24, 27, 29, 30, 31 and 32)	These are areas of great importance for birds, and therefore require a level of protection or management for the maintenance of these elements of biodiversity. They are not prescriptive as to the type of measures to be implemented.	As they are areas designated by an NGO, their designation does not result in a mandate for their protection.
EBSAs - Ecologically or Biologically Significant Areas.	<p>(1) Nazca and Salas y Gómez Ridge, (2) Centers of Major Surge and Seabirds Associated with the Humboldt Current in Peru, (3) Gulf of Guayaquil, (4) Carnegie Ridge - Equatorial Front, (5) Humboldt Current Surge System in Peru, (6) Humboldt Current Surge System in Northern Chile, (7) Seamounts in the Juan Fernandez Ridge, (8) Grey Petrel Feeding Area in the South of the East Pacific Ridge, (9) Humboldt Current Surge System in Southern Chile, (10) West Drift Convergence, (11) Humboldt Current Surge System in Central Chile, (12) Malpelo Submarine Ridge, (13) Galapagos Archipelago and Western Extension, (14) Eastern Tropical Pacific Marine Corridor, (15) Equatorial Zone of High Productivity</p> <p>*Only the bold areas contain ABNJ zones.</p>	Mostly identified by a scientific exercise led by the CBD, these areas may also be described by countries or initiatives led by other international bodies, including regional ones. They do not intrinsically provide a protection or management package. When they are described within States' EEZs, it is a prerogative of that State to decide on any conservation or management measures to be put in place. When they are described in ABNJ, the determination of any measures is the prerogative of the competent international organizations.	This tool is not legally binding despite having legal backing in the CBD. Johnson et al. (2018b) recently provided a number of recommendations to improve the EBSA process.
Key Biodiversity Areas - KBA	Seven in the Southeast Pacific region (same as previous IBAs)	They are sites of global importance for preserving biodiversity.	As they are areas designated by an NGO, their designation does not result in a mandate for their protection.
Important Marine Mammal Areas	None in the Southeast Pacific Region (2012)	These are areas of key importance to marine mammals and should be protected or managed. They are not prescriptive of the type of measures that should be implemented.	Not applied in the region.

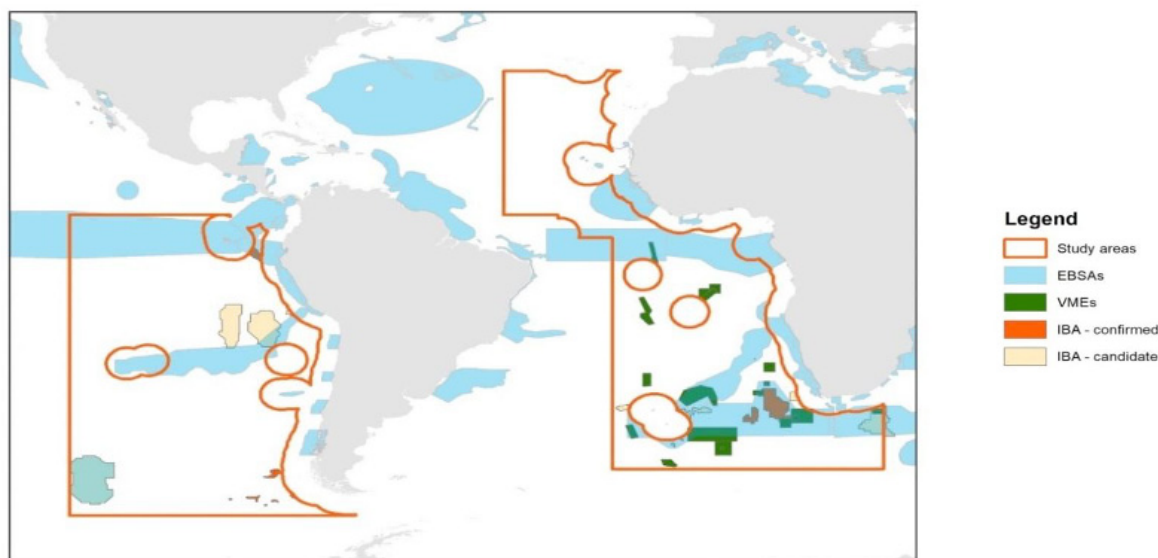


Figure 6: Example of one of the EBSAs identified in the Southeast Pacific (Eastern Pacific Marine Corridor-CMAR) indicating the marine protected areas included in the EEZ and the portion corresponding to ABNJ. Taken from <https://cmarpacifico.org/>

Finally, there is a group of six small KBAs (20, 27, 29, 30, 31 and 32) that are also IBAs in the southern Southeast Pacific (see Figure 3 in Chapter 2.1 of Boteler et al. 2019). These areas have been identified by BirdLife International for their importance for seabirds (different species of albatrosses).

The identification of these areas was based on detailed analyses of habitat use and/or occupancy by specific groups of organisms and thus constitutes the most accurate mapping available of

key sites on which the survival of fragile, vulnerable or even threatened species depends. However, its integration into a broader effort aimed at ABNJ conservation is still insufficient. The use of all available information on the criteria used for the selection of these areas, as well as on the main pressures they are likely to face in the short and medium term, would make it possible to fine-tune the efforts of the conservation measures outlined above.



Ressources for Identifying Key Areas and Supporting Conservation Efforts				
Present in the region?	Key actor			Habitat and species
	Civil Society		→	
	Civil Society		→	
	Civil Society		→	
	States		→	

Figure 8: A non-exhaustive summary of resources to identify key areas and support conservation efforts, including key stakeholders, habitats, and species of concern and whether they are in use in ABNJ in the Southeast Pacific (measures in effect in the region are represented by a South American icon).

2.2.3 Other options to support conservation efforts in ABNJ

This section discusses other options available to support conservation efforts in ABNJs, focusing on Marine Spatial Planning (MSP), Environmental Impact Assessments (EIA) and Monitoring, Control and Surveillance (MCS).

2.2.3.1 Marine Spatial Planning

Marine Spatial Planning (MSP) is a public process of analysis and allocation of the spatial and temporal distribution of human activities in the seas, to achieve ecological, economic and social objectives specified in a public policy. The use of MSP in the jurisdictional areas of CPPS countries has

been more common in recent years (e.g., Outeiro et al., 2015). However, the use of this tool in ABNJ in the Southeast Pacific region has so far been lacking. The fact that many of the biodiversity protection instruments in ABNJ are so far sectoral and that there is little communication between these instruments is one of the reasons why MSP has not been applied in these areas. A synthesis of the potential of using MSP in ABNJ is provided in Altvater et al. (2019).

2.2.3.2 Environmental Impact Assessments

Environmental Impact Assessments (EIA) are a group of tools used to protect the environment. The definition of environment in these assessments is varied and can include both social and economic factors. Within EIAs there are at least three types that include: (1) Strategic Environmental Assessments (SEAs), Regional Environmental Assessments (REAs) and (3) Environmental Impact Assessments (EIAs) (Doelle & Sander, 2020). REAs are carried out if there is pressure from planned development and should create possible scenarios derived from these development plans. SEA is a systematic process used to assess the environmental implications of a given policy, program, or plan. SEAs should ensure that environmental aspects of a given policy or plan are proactively incorporated into planning processes. Finally, EIAs are project-level assessments that are carried out in the context of REAs and SEAs.

In the specific case of EIAs in ABNJ, there are several legal and policy agreements that indirectly or directly touch on the use of these tools. For example, UNCLOS (Articles 204-206) includes aspects related to the elaboration of EIAs, but many agree that these provisions contain too many gaps with respect to the obligations to make these provisions effective in ABNJ (Druel, 2013). The current BBNJ treaty negotiations include EIAs as one of their main points of discussion and there remain divergent views among countries in this regard (see Humpries & Harden-Davies, 2020). To the extent that these divergent views are reconciled, the use of EIAs could play a key role in protecting biodiversity in ABNJ in the future.

2.2.3.3 Monitoring, Control and Surveillance

Effective Monitoring, Control and Surveillance (MCS) of human activities occurring on and in the ocean is critical for the success of ocean management. It is important to emphasize that MCS is primarily a tool for understanding patterns of human activities, and where these may have ecological impacts. MCS typically focuses on areas where standards exist, to understand whether those standards are being met. In other words, good standards are required for MCS to be useful. MCS encompasses a wide range of tools, technologies and policies that can be used in a variety of contexts to promote compliance, increase transparency and contribute to effective conservation and sustainable use of marine resources. These include: a) monitoring human activities (e.g., through data collection and reporting); b) control of human activities and their impact on marine biodiversity (e.g., through regulation, licensing, and controls on how, where, and when activities are conducted in the ocean); c) surveillance of vessels (e.g., through observer programs and electronic surveillance systems); d) encouraging compliance through transparency, sanctions and other measures (e.g., sustainability certification schemes); and enforcement actions, for example, to tackle IUU fishing and transnational illicit activities such as human trafficking, forced labor, and trafficking in arms, drugs and wildlife.

Compared to implementation in national waters, MCS in ABNJ can be more expensive, while the lack of data relating to marine ecosystems in ABNJ results in a more limited understanding of the impacts of human activities. However, the recent emergence of innovative and cost-effective technologies has created transformative potential for solving these MCS challenges.

To ensure that the marine environment is used in an environmentally sustainable manner, States use MCS tools (such as onboard observers, coast guards, aircraft, drones, radar, logbooks and satellite imagery, with new technologies continuously under development) to monitor human activities and for compliance and enforcement actions. Among CPPS member States there are

substantial differences in MCS capacities: Peru and Chile have many MCS tools, while the MCS capacities of Colombia and Ecuador are less developed. One of the main challenges to MCS effectiveness in the Southeast Pacific is the lack of communication, cooperation, and coordination, both within States (e.g., different Ministries) and between States (e.g., a joint maritime strategy), with civil society, and between regional and sectoral regimes (e.g., RFMOs and IMO).

MCS activities and their implementation can be expensive, especially in ABNJ, so it would be beneficial for CPPS member States to cooperate more closely. Some bilateral cooperation already exists (e.g., between Ecuador and Chile on satellite tools), but there is no regional MCS strategy, integrated MCS data framework, or single platform where these States can share best practices, exchange data, and increase trust among compliance and enforcement actors.

The four CPPS member States have difficulties in ensuring compliance through transparency and sanctions. Most MPAs in the region do not have (effective) management plans and it is questionable whether existing sanctions are sufficient to deter IUU fishing activities. A management planning process was recently completed for all Chilean oceanic LSMPAs (Gaymer et al., 2018, 2021a, b).

During the XIII Extraordinary Assembly of the CPPS, on August 5, 2020, the declaration on IUU

fishing was adopted, calling on States to respect and enforce international law on fishing activities, including relevant RFMO conservation measures and the FAO Code of Conduct for Responsible Fisheries; as well as calling on other international organizations to join efforts and support policies for sustainable fisheries.

Likewise, the states expressed their concern for the recurrent presence of foreign flagged fishing fleets carrying out fishing activities in areas of the high seas adjacent to areas under the jurisdiction of the CPPS countries. The CPPS also expressed its concern for the increase of IUU fishing on highly migratory species and transzonal populations in areas adjacent to marine areas under national jurisdiction; proposing the will to take measures to prevent, discourage and jointly confront IUU activities, optimizing the mechanisms of coordination, cooperation and exchange of information in real time evidencing IUU practices, in order to work together, joining and consolidating common efforts, thus ensuring the conservation and sustainable use of marine resources existing in the region.

Likewise, SPRFMO has taken measures to control IUU activities through resolution CMM-04-2020²⁰, whereby vessels involved in these activities are blacklisted with restrictions that include prohibition of entry to ports, prohibition of landing catches or refuelling.

20 <https://www.sprfmo.int/assets/Fisheries/Conservation-and-Management-Measures/2020-CMMs/CMM-04-2020-IUU-Vessel-List-31Mar20.pdf>

3. Proposals to strengthen conservation efforts in ABNJ of the Southeast Pacific

3.1 Key considerations for conservation efforts

To be effective, measures to support conservation efforts must have as their primary objective the protection of biodiversity and/or ecological integrity and consider cumulative pressures on the marine environment. This also means including ecological connectivity (e.g., migratory routes of marine species, transboundary impacts of human activities) and climate change impacts in their design and implementation. In addition, the complexity and dynamic nature of the ocean, even in ABNJ, requires that conservation efforts recognize uncertainty, include mechanisms to address it or adapt quickly to new scientific information, and consider the three-dimensional space of the ocean. This also requires that the best available interdisciplinary knowledge, both scientific and local and indigenous, inform the design and implementation of measures. It will be essential that measures to support conservation efforts implement options for cross-sectoral cooperation and collaboration, as well as consider appropriate spatial and temporal scales for implementation. Measures to support conservation efforts should reflect broad societal objectives and consider the uneven distribution of socio-economic outcomes derived from harvesting activities in ABNJs. Similarly, governance and management actions should recognise coupled and diverse socio-ecological systems and the interconnectedness between ocean health and human well-being, including considerations of diverse stakeholders in the design and implementation of the measure or approach. It is essential that the design and implementation of measures to support conservation efforts include adequate means to ensure regular monitoring, control, and surveillance of human activities, as well as compliance with and enforcement of existing laws and regulations.

To be effective, any conservation measures proposed for the region's ABNJ must consider the socio-economic and political realities of the nations whose EEZs border these areas. In this regard, it is important to note the important role that the fisheries sector has historically played

and continues to play in most of the region's economies (see Olivares-Arenas et al., 2021). Similarly, politically, it is important to recognize the differences in the approaches of the States to manage their marine spaces, a position that is clearly reflected in the signing and ratification of treaties that have to do with the conservation and use of the oceans.

Some recent developments in the region will undoubtedly play an important role in how ocean areas including ABNJs are protected in the Southeast Pacific region. Among these developments are the recent requests by Chile and Ecuador to the UN for continental shelf extension. These applications, which are currently under consideration by the Commission on the Limits of the Continental Shelf (CLPS) for ocean affairs and the law of the sea, would allow these States to have control over the seafloor of large areas in the Southeast Pacific. These applications, as they stand, reflect the interest of these States in protecting the biodiversity present in these areas, which could mean clearer commitments at the state level to conservation.

Similarly, the current BBNJ treaty under discussion will be fundamental to establishing cross-sectoral conservation measures in the Southeast Pacific region. The way in which the new BBNJ instrument is integrated with existing conservation and sustainable use measures will determine the effectiveness of the possible management measures to be established. Of particular importance for the region is how existing RFMOs will interact with the new instrument (Ortuño Crespo et al., 2019; Haas et al., 2020).

Other international agendas including the post-2020 global biodiversity framework, the Sustainable Development Goal (SDG) targets and the Decade of Ocean Sciences for Sustainable Development should serve to engage states in the Southeast Pacific region more strongly in the conservation and sustainable use of ABNJ. In this regard, it will be important to establish and evaluate how existing measures (e.g., area-based) contribute to achieving sustainable development targets, especially those related to SDG 14.

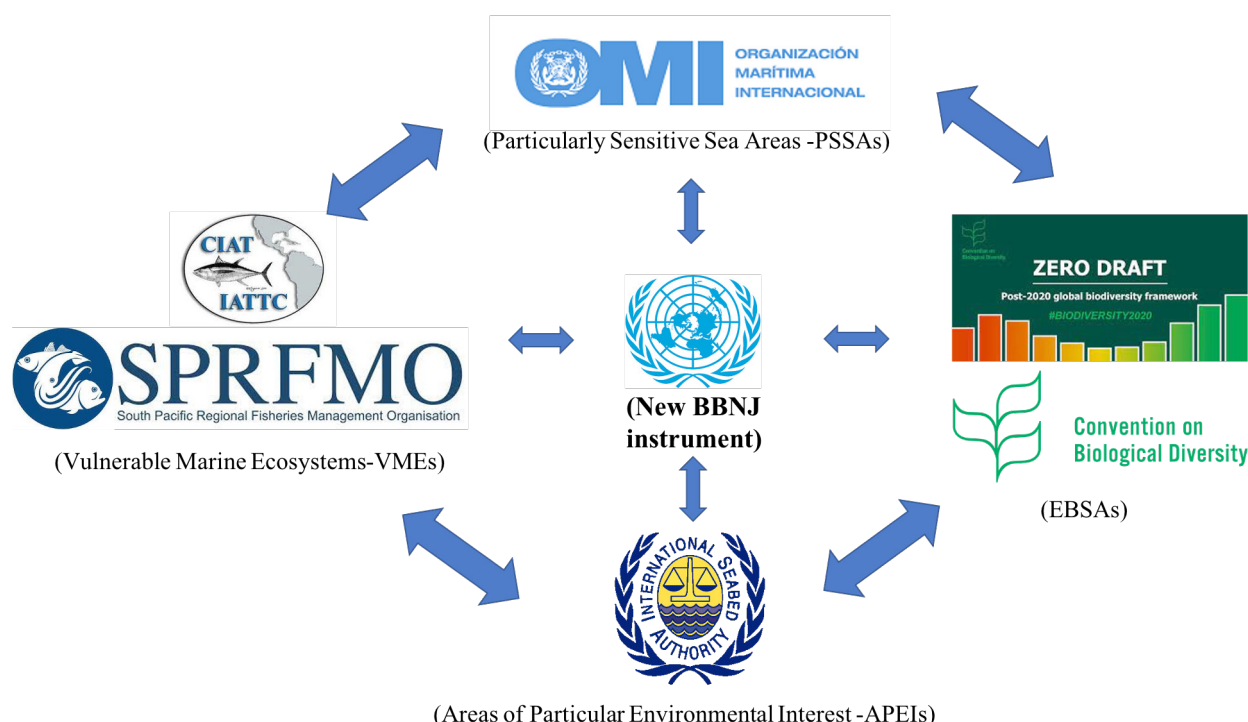


Figure 9: Diagram showing the necessary interaction between different bodies/conventions/agreements that play and will play a determining role in the conservation of areas outside national jurisdictions.

A recent analysis (Reimer et al., 2021) indicated that some area-based management measures (e.g., fully protected areas, gear restricted areas, total fishing closures) appear to be effective in achieving SDG 14 targets related to ecological variables. However, the contribution of these measures to achieving SDG targets related to social and economic well-being is so far unclear. In the end, a combination of different sectoral and multi-sectoral measures would be necessary to achieve the different targets outlined in the SDGs, not only in SDG 14, but those where there is intersection with ocean issues.

3.2 Proposals to support conservation efforts in the Southeast Pacific

3.2.1 Sectoral measures to support conservation efforts

3.2.1.1 Maritime transportation

Commercial maritime transport is the predominant mechanism for the global transport of products, whose economies of scale give it a pri-

vileged position in the world economic system, allowing access to markets over long distances, which is particularly important in the case of raw materials (Olivares-Arenas et al., 2021). According to the number of TEUs (20-foot equivalent unit) moved in Latin America and the Caribbean, 10 countries account for 81% of the total cargo operated in the region, including Brazil, Panama, Mexico, Chile, Colombia, Peru, Ecuador, Dominican Republic, Argentina and Jamaica (Sánchez and Barleta, 2020).

Inquiries about the environmental impacts of maritime transport has focused on aspects such as atmospheric pollution and greenhouse gases, dumping of garbage, bilge water, ballast water, wastewater, biofouling or introduced marine species, dumping of goods and containers falling into the sea and noise (Eslava, 2018). Added to this is the high concentration of navigation routes of ships throughout the year and that in many occasions coincide with migration routes of large mammals or with areas of reproductive aggregation or feeding of these species, originating serious collision inconveniences,

so in the search to reduce interactions between whales and ships; studies oriented to the separation of maritime transit, such as those reported by scientists of the Smithsonian Tropical Research Institute (STRI) in the Southeast Pacific, both for the Gulf of Panama and the Strait of Magellan (Chile), have gained strength (<https://stri.si.edu/en/noticia/demasiado-cerca>) (Guzman et al., 2013).

Among the recommendations or proposals for conservation in maritime transportation, there are two main ones:

That CPPS countries become full parties to MARPOL (International Convention for the Prevention of Pollution from Ships) and all six of its Annexes, which contain rules aimed at preventing and minimizing pollution from ships, both accidental and from normal operations. The International Maritime Organization (IMO) has adopted a series of traffic management measures to protect whales and other cetaceans from collisions with ships during the breeding season, moving ships away from certain areas; measures that can also contribute positively to reduce the effects of underwater noise (<https://www.imo.org/es/Media-Centre/HotTopics/Paginas/Noise.aspx>). Hence, it is important that CPPS countries aim at declaring „Particularly Sensitive Sea Areas“, which offer these possibilities as conservation measures, reducing vulnerability to maritime activities (especially pollution and traffic).

3.2.1.2 Deep-Sea mining

Due to their geological characteristics, the ABNJ of the Southeast Pacific contain mineral resources of commercial interest (see Boteler et al., 2019). In ABNJ of the Southeast Pacific to date there are no exploration contracts with the ISA (Miller et al., 2018). A possible exploitation of mineral resources in ABNJ of the Southeast Pacific would not only have implications for the biodiversity that these areas contain, but also social and economic implications because some of the countries in the region currently support their economy on land-based mining activities (e.g., Chile, Peru), which could be harmed. Some recent analyses start to propose solutions based on spatial optimization algorithms where protection areas and other mineral exploitation areas are proposed (e.g., Dunn et al., 2018).

These approaches however have been criticized for not complying with environmental justice principles and for not explicitly considering different social spheres such as socio-political disparities in ocean governance (Chapman et al., 2021).

Some academic and civil society sectors have called for a moratorium on deep-sea mining based on the precautionary principle in international law, considering the environmental, economic and justice uncertainties that the development of this activity would have for humanity and even questioned the need for this activity (Kim, 2017; Miller et al., 2021; WWF, 2021). Another alternative raised by academics recently is that of slowing down the transition between exploration and exploitation (Levin et al., 2020). This would allow additional time for the ISA, as the regulatory body for this activity, to be strengthened and for many aspects related to protection measures such as REMPs, APEIs and EIAs to be clarified and evaluated from different points of view. Ultimately, many sectors insist that the rapid and effective implementation of a circular economy in our societies could mean that activities such as deep-sea mining would cease to be a necessity in the future and thus benefit the protection of biodiversity in these still little-explored areas of our oceans.

3.2.1.3 Fishing

The current treaty under discussion on biodiversity in areas beyond national jurisdiction (BBNJ) is expected affect the way RFMOs operate although it does not specifically include fisheries. In turn, RFMOs will have an influence on the implementation of any agreement reached under BBNJ (Haas et al., 2021).

With fishing (along with climate change) being one of the main pressures on marine ecosystems, including in ABNJ, it is difficult to envisage adequate and effective biodiversity conservation in ABNJ that does not incorporate RFMOs. It is therefore key that any provisions in the future BBNJ agreement specifically include how to integrate and enhance the effectiveness of existing conservation measures within RFMOs within these agreements. Some have proposed developing a subsidiary proposition within the agreement such as a Memorandum of Understanding with RFMOs (Hass et al., 2020).

Undoubtedly, there is a high potential for RFMOs to improve the effectiveness of the conservation measures included in their mandates. Indeed, the effectiveness of RFMO conservation measures has been sufficiently criticised in recent years (e.g., Green & Rudyk, 2020). Some proposals might include:

- For these improvements to occur quickly and effectively, the involvement of other sectors of society (e.g., NGOs, academia) and transparency in RFMO decision-making spaces could be beneficial (Dellmuth et al., 2020; Fischer, 2020).
- Similarly, communication between RFMOs and other bodies with legal mandates in ABNJ (e.g., IATTC, SPRFMO, ISA or IMO) should be promoted more effectively.
- In the end, it is the RFMO member States that have a major responsibility to bring issues related to sustainability, sustainable management, and biodiversity protection in ABNJ to the decision-making table.
- The IATTC must improve in establishing effective decision-making mechanisms. The lack of consensus in decision-making seen recently²¹ continually threatens that conservation decisions will not be made in a timely manner. To this end, lessons could be learned from the decision mechanism established by the other RFMO active in the region, SPRFMO, where one of its features is a stricter standard for using the objection procedure in the organization's decision making (see Schiffman, 2013).
- It is necessary to have decision-making and financial mechanisms within the RFMOs that allow for a faster and more effective implementation of the suggestions made by the scientists.
- It is necessary that the interests of developing countries are considered in decision-making within RFMOs. This is stated in the UNFSA agreement (Article 24(1)). Since more powerful states or states with greater interests generally predominate in decision-making, it is necessary for RFMOs to design mechanisms to overcome these power imbalances within the organizations (Sinan et al., 2021).

As can be seen, the RFMOs play and will play a fundamental role in the conservation of biodiversity in ABNJ, including the Southeast Pacific region. However, there are still aspects to improve in the functioning of these entities and their relationship with other entities to support ecosystem-based conservation and management. Only by

overcoming some of the limitations suggested above and ensuring that the new BBNJ treaty can interact with RFMOs in a timely manner, will it be possible to ensure biodiversity conservation in ABNJ.

Finally, it is important to mention that fisheries management in jurisdictional zones of countries should be strengthened (under an ecosystem-based approach) due to the close relationship that exists between EEZs and ABNJ when dealing with species of interest with highly migratory capacities.

3.2.1.4 Cross-sectoral measures

The way in which the different countries of the region have taken on the protection of oceanic spaces in their jurisdictional areas can give some ideas of how possible future conservation measures in ABNJ in the region could operate. The four countries (Chile, Colombia, Ecuador, and Peru) with jurisdictional waters in the FAO 87 region have made different kinds of efforts in recent years to design measures to protect some of their ocean areas, which, due to their proximity to ABNJ, have high connectivity (Table 2). Motivated in part by the fulfilment of the Aichi 11 target, the countries of the region have in recent years declared vast areas of their oceanic zones as areas under some form of protection. Thus, Chile, Colombia, Ecuador, and Peru currently conserve 41.33%, 17.17%, 13% and <8 % of their jurisdictional²² waters, respectively.

Although Peru is the country in the region with the least percentage of its water areas established protected areas, some signs of political will to establish protection of ocean areas within its jurisdiction have been seen in the last year with the establishment of the Nazca Ridge National Reserve²³.

Although the establishment of some of these areas is recent and therefore the effectiveness of their establishment is still difficult to quantify, some lessons can be derived from management in some of the older areas (e.g., Galapagos and Malpelo). There is evidence that the establishment of conservation measures in Galapagos has had a positive effect on the associated pelagic fisheries around the reserve (Boerder et al., 2017). However, there are still continuing problems with compliance and enforcement of conservation

²¹ https://www.panda.org/wwf_news/?3543966/Uncertainty-after-the-annual-meeting-of-the-Inter-American-Tropical-Tuna-Commission-IATTC

²² <https://www.protectedplanet.net/en/>

²³ <https://www.gob.pe/institucion/produce/normas-legales/1952756-008-2021-minam>

Table 8: Description of marine protected areas in oceanic zones of the Southeast Pacific.

Name	Country	Year of designation	Area (km²)	Type of protection	Relationship with ABNJ
Malpelo	Colombia	1995	3,035.52	Flora and Fauna Sanctuary (IUCN Management Category IV, recognized by the IUCN Green List)	Malpelo is part of CMAR (considered an EBSA). CMAR contains a part within ABNJ that constitutes a migratory passage for species that inhabit Malpelo.
Malpelo Fauna and Flora Sanctuary	Colombia	2002		Particularly Sensitive Sea Area - IMO Resolution MEPC.97 (4) issued on March 8, 2007.	The zone is delimited so that vessels larger than 500 tons must avoid the established zone.
Malpelo Fauna and Flora Sanctuary	Colombia	2006	8,575.0	World Heritage Site	See above
Malpelo Fauna and Flora Sanctuary	Colombia	2017	26,675.58	Expansion of the Sanctuary area by Resolution 1907 of 2017, issued by the Ministry of Environment and Sustainable Development.	See above
Yurupari - Malpelo	Colombia	2017	26,919.8	Integrated Management National District	It is also located in area of the CMAR
Galapagos Marine Reserve	Ecuador	1998	133000	Marine Reserve	Part of CMAR like Malpelo. The effects of protection in Galapagos can be seen in the increase in fishing production in adjacent ABNJs.
Galapagos National Park	Ecuador	1936	693700	IUCN Management Category II, UNESCO World Heritage Site (1978) and Biosphere Reserve (1984)	See above
Rapa Nui	Chile	2018	579368.0	Multiple Use Marine Protected Area (IUCN Management Category VI)	Biologically and ecologically connected to the Salas y Gómez mountain range (in ABNJ)
Motu Motiro Hiva	Chile	2010	150000.0	Marine Park (Cat Ia)	Biologically and ecologically connected to the Salas y Gómez and Nazca mountain ranges (in ABNJ)
Nazca-Desventuradas	Chile	2016	300035.0	Marine Park (Cat Ia)	Biologically and ecologically connected to the Salas y Gómez and Nazca mountain ranges (in ABNJ)
Juan Fernandez Sea	Chile	2018	264442.8	Marine Park (Cat Ia)	Ecologically connected to the Salas y Gómez and Nazca mountain ranges (in ABNJ) and the other oceanic Chilean islands
Juan Fernandez Sea	Chile	2017	24000.0	Multiple Use Marine Protected Area. IUCN Management Category VI	See above
Nasca Ridge National Reserve	Peru	2021	62 392.0575	The preliminary zoning proposal includes a sustainable resource exploitation zone from 0 to 1,000 m depth, and a strict protection zone between 1,000 and 4,000 m depth.	Biologically and ecologically connected to the Salas y Gómez mountain range (in ABNJ)

Box 1: Recent conservation initiatives in oceanic areas of the Southeast Pacific

- 1) Peru recently established the Nazca Ridge National Reserve (RNDN) to protect the first portion of the Nazca seamount range, off the Ica region. This area aims to ensure the sustainability of deep marine ecosystems and the sustainable use of fishery resources. With 62,392 km², this area protects 8% of the Peruvian EEZ. It is important to mention that this MPA currently only protects the seafloor, but not the water column of the continental slope, in depths ranging from 1000 to 4000 m. In addition, the supreme decree that establishes the reserve also allows fishing for deep-sea cod (*Dissostichus eleginoides*) at 8,100 m depth.
- 2) A global alliance of partners whose goal is to protect coral reefs in areas beyond national jurisdiction, called the „High Seas Coral Reef Coalition“, has been working for two years to compile all scientific information and propose conservation measures to protect the Nazca and Salas y Gómez²⁴ ridges. These ridges host a unique biodiversity with one of the highest levels of marine endemism on Earth (Wagner et al., 2021a, b) and extend along more than 2,900 kilometres of seafloor off the west coast of South America, hosting more than 110 seamounts, and the only emerged part corresponds to the Chilean islands Rapa Nui, Salas & Gómez, and the Desventuradas.

Its seamounts are key habitats, migration corridors and ecological steppingstones for whales, sea turtles, fish, corals and many other ecologically important species, including 82 threatened or endangered species. In addition, this area is also known for being important spawning and nursery grounds for several economically important species, such as jack mackerel and swordfish. This area also has an exceptionally rich and long history of marine navigation culture (Delgado et al., 2022). Although Chile has protected all portions of these ridges within its EEZ, through the creation of several Large-Scale Marine Protected Areas (LSMPAs), 73% of these ridges are in ABNJ and are threatened by several stressors, including climate change, plastic pollution, overfishing, and potential future deep-sea mining. Both ridges were recognised as ecologically or biologically significant marine areas (EBSAs) at CBD COP 12 (CBD, 2014)²⁵.

Due to the above reasons, the High Seas Coral Reef Coalition has proposed three measures, namely: (i) Close this region to fishing activities regulated by the South Pacific Regional Fisheries Management Organization (SPRFMO) and the Inter-American Tropical Tuna Commission (IATTC); (ii) Close the region to seabed mining activities regulated by the International Seabed Authority (ISA); and (iii) Establish a high seas marine protected area in this region once the United Nations Biodiversity Beyond National Jurisdiction (BBNJ) Agreement is finalised and enters into force. The protection of this area should be a global example for conservation, involving several countries in the Southeast Pacific that have an interest in the area. This initiative is a perfect complement to recent national initiatives within their EEZs by Chile and Peru.

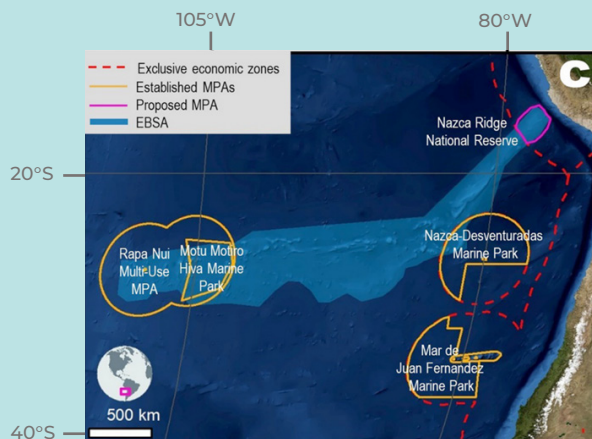


Figure 10:
Location of the Nazca and Salas y Gómez mountain ranges and the different conservation figures and tools in this region. Taken from Wagner et al. (2021)

²⁴ <https://www.coralreefshighseas.org/>

²⁵ CBD (2014). Decision adopted by the Conference of the Parties to the Convention on Biological Diversity. Twelfth meeting of the Conference of the Parties to the Convention on Biological Diversity.

- 3) Recently (April 22, 2021), Chile announced the launch of efforts to create a high seas marine protected area (MPA) in the Salas y Gómez and Nazca ridges, as a priority measure to address the climate crisis. Although it is based on the proposal of the „High Seas Coral Reef Coalition“, it is the first political action taken by a government to protect this area²⁶. Following the announcement, the proposal was submitted to the RFMO in September 2021. While these are important steps, it must be agreed with the other countries of the Southeast Pacific, such as Peru and Ecuador.
- 4) Likewise, in October 2020 Chile announced an international demand to extend its continental shelf from Salas y Gómez to the East, reaching 700 Mn, which will include about 2/3 of the Salas y Gómez ridge. This is a way to take care of natural resources and protect marine biodiversity^{27,28}. The latter could be seen as an opportunity to give political support to the initiative to protect both the Salas y Gómez and Nazca ridges.
- 5) On December 16, 2020, Ecuador together with Costa Rica, as a product of a Memorandum of Understanding signed in 2013 and binational research campaigns conducted between 2017 and 2020, delivered to the United Nations Commission on the Limits of the Continental Shelf (CLCS) a technical document that supports the extension of the Carnegie Ridge and Cocos Ridge beyond 200 nautical miles, which could grant the two countries use rights over the seafloor in these zones²⁹. Like the Chilean initiative mentioned above, this initiative could be seen as an opportunity to protect high seas areas in the region.

measures established within these remote areas (e.g., illegal fishing) (Alava & Paladines, 2017). Finding solutions to these problems is a challenge considering how costly control and surveillance in these oceanic areas can be and the limited budgets of the economies of the countries in the region.

3.2.1.5 Coordinating measures to support conservation efforts

In the region there are planning and management initiatives that, individually, prove to be successful for the purposes for which they are created. These generate many lessons learned from these practices for the conservation and sustainable use of marine biodiversity, particularly within EEZs. However, challenges persist in terms of the necessary articulation between the managers of each of these initiatives to be able to share these practices widely and to establish or implement mechanisms to cooperate among the various authorities.

While each of the international regulatory agencies and state agencies in the Southeast Pacific countries have regular dialogues and have managed to establish a certain level of coordination

between them, it is nevertheless recommended that regional actors:

1. Establish or reinforce, in the case of existing ones such as vessel control, strategies for information exchange on monitoring results that complement individual functions;
2. Hold intersectoral dialogues that allow measures to be seen as complementary and subsidiary, particularly between international and State waters.
3. Generate and/or advance in the establishment of capacity building programs on functions, scopes, strengths and challenges for the exercise of the authority corresponding to each organization or entity, which will help keep all stakeholders updated on events, trends and solutions to reinforce conservation measures and in general, improve the health of ocean ecosystems in the region.
4. Work with regional or global organizations oriented to support activities such as those mentioned above, such as the IUCN, Big Ocean, the Ibero-American Network of Biosphere Reserves or the Latin American Network for Technical Cooperation in National Parks - Red-parques, among others. This exercise should include the identification of appropriate platforms for the region.

²⁶ <https://www.minrel.gob.cl/news/president-pinera-announces-chile-will-advance-a-proposal-to-fully>

²⁷ <https://difrol.gob.cl/chile-anuncia-reclamacion-internacional-sobre-la-plataforma-continental-extendida-de-la-provincia-de-isla-de-pascua/>

²⁸ <https://www.minrel.gob.cl/chile-presenta-reclamacion-sobre-plataforma-continental-extendida-ante>

²⁹ <https://www.cancilleria.gob.ec/chile/2021/04/21/ecuador-entrego-en-naciones-unidas-la-primera-presentacion-conjunta-con-costa-rica-para-la-definicion-del-limite-exterior-de-su-plataforma-continental/>

In general terms, it is necessary to reinforce knowledge about the functioning of these different actors and to generate a common vision among the regulatory bodies, so that management is complementary. This supports progress towards integrated management of the ocean and the different management units that compose it, whether regulatory bodies are focusing on conservation or sectoral development. In addition, it is important to determine what other potential conservation measures can complement the range of options, considering, for example, areas with military operations associated with surveillance or demilitarized areas, among others.

Finally, and as has been explored through the dialogues among the CPPS States, the role of regional cooperation is fundamental to ensure the above and, in particular, it will take on all the relevance to activate these exchanges, as well as to strengthen conservation measures at the regional level, under the principle of subsidiarity. Strengthening already existing measures, both within and beyond national jurisdiction, especially MPAs and designations as PSSAs and as oceanic World Heritage sites.

3.2.2 Resources to identify key areas and support conservation efforts ABNJ

As shown in Tables 1 to 5, there are a number of proposals for possible conservation measures applicable to different regions of the planet, with very specific criteria that delimit areas of significant importance for biodiversity in marine areas. Some of these are key references for MPA designation, while others contribute to spatial planning more broadly. Whatever their use, the fact is that these proposals are fundamental pillars of science typically accepted by States, which formulate plans and projections around them - such is the case of national biodiversity strategies for marine-coastal aspects, as a key instrument for guiding biodiversity management as adopted by the CBD.

Although there are still dissimilar views regarding the practical application and national regulatory frameworks (e.g., EBSAs), the framework that these figures present as an opportunity for the conservation of the BBNJ is indisputable, given that, as shown in this report and in the technical work reports (SCBD, 2020), they can be as

varied as the biological characteristics they host, recognizing important pan-oceanic processes, such as productivity fronts.

Although the criteria on which these alternative measures are based have been widely analysed and disseminated, we are therefore facing a more complete decision-making scenario that involves considering aspects beyond the evidence, such as the enabling conditions for such measures to be sustainable in the long term, to have active and effective management, to be compatible with national regulatory and institutional frameworks and to be managed as part of intersectoral policies.

Translating the exercise of identifying opportunities for biodiversity conservation in ABNJ into concrete management measures is even more challenging, given the number of responsible actors and limited responsibilities. This is why the BBNJ treaty presents an opportunity for the proposed measures to be concretized into management and governance models shared by the various stakeholders, thus making responsibility more manageable among future treaty Parties.

Clearly identified management units and guidance on specific management strategies based on technical criteria may be a solution to extend marine resource conservation measures.

3.2.3 Other options to support conservation efforts in ABNJ

Other important aspects related to the development, implementation and enforcement of conservation measures include capacity building, financial mechanisms, monitoring, control and surveillance, and stakeholder engagement and participation. Les principales recommandations pour un SCS efficace dans la région sont les suivantes:

3.2.3.1 Marine Spatial Planning

Marine spatial planning (MSP) has been a suggested tool for its application in ABNJ (Wright et al., 2019). The incorporation of this tool in the procedures to be established in the new BBNJ treaty would be fundamental to somehow overcome the problems generated by the sectoral measures that currently exist for ABNJ. In the case of the Southeast Pacific region, most of the

countries in the region use MSP to delineate areas of various uses in their EEZs. The availability of increasingly accurate and recent information on ABNJ activities such as fishing and maritime traffic in general are inputs that can be used in MSP. The great difficulty that still remains relates to the limited biological information available for many of the ABNJ in the Southeast Pacific. Without this information, it is difficult for an MSP exercise to adequately target conservation areas. It is also important to consider the spatial and temporal variability of ecosystems in ABNJ. Therefore, it is increasingly recommended to consider this variability in measures and ABMT including MSP (Crespo et al., 2020). Similarly, it is important that some of the elements considered in MSP incorporate socio-cultural aspects of the countries adjacent to the ABNJ of the Southeast Pacific (Grimmel et al., 2019).

3.2.3.2 Environmental Impact Assessments

Environmental Impact Assessments are one of the four main package elements current-

ly being negotiated by the Intergovernmental Conference on an international legally binding instrument under the United Nations Convention on the Law of the Sea (UNCLOS) relating to the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction. The issue remains quite contentious in the current negotiations, mainly concerning the „internationalisation“ of EIAs. Internationalisation refers in general terms to having common standards for conducting EIAs in ABNJ. Some states (e.g., European Union, USA, Canada and UK) consider that review and decision-making in the context of EIAs should be in the hands of the States. On the other hand, another group of states (e.g., Caribbean Community - CARICOM) consider that these processes should be monitored more globally. To find a compromise in these two views on EIAs, a „tiered approach“ has been proposed (Hassanali, 2021). This approach consists of allowing countries' expertise to be used in the EIA process when needed but ensuring that the most impactful activities proposed in ABNJ are subject to international review (see Figure 11).

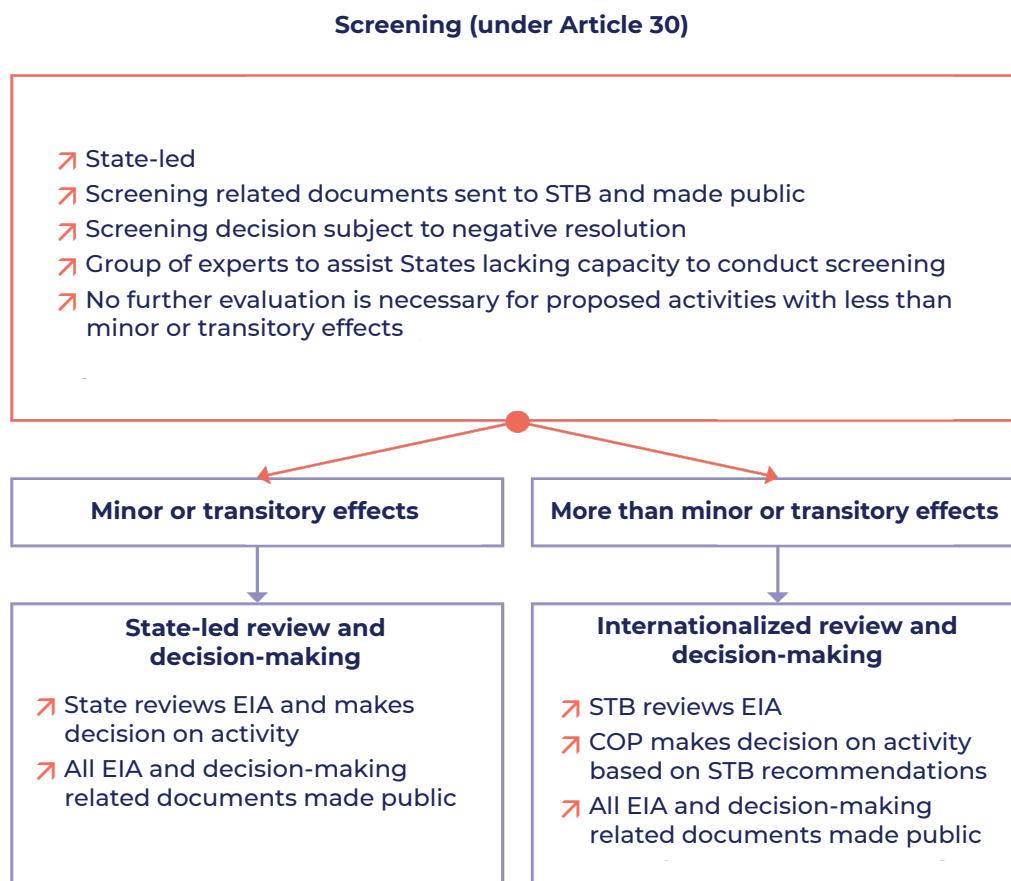


Figure 11: Approach proposed by Hassanali (2021) for review and decision-making in the context of EIA in the future BBNJ agreement.

In the case of CPPS countries, it is necessary that the procedures for conducting EIAs meet minimum standards and can be improved, in the same way that the experiences in conducting EIAs are shared among states that have more developed standards (e.g., Chile; see Rodríguez-Luna et al., 2021).

3.2.3.3 Monitoring, Control and Surveillance

CPPS states can improve MCS in the Southeast Pacific in three specific ways:

1. Improve communication, cooperation and coordination on MCS within and among CPPS States, as well as between regional, sectoral and/or global bodies;
2. Establish an effective joint data-driven MCS strategy that includes a regional information-sharing platform and training workshops for decision-makers as well as compliance officers in the field; and
3. Ensure the existence of an adequate penalty system, including effective sanctions, rapid intervention in case of suspicion of illegal activities and the obligation to develop an MCS strategy by designating an area-based management tool, including marine protected areas.³⁰

Recent developments indicate that CPPS member States are willing to adopt a regional approach to MCS. In August 2020, the 13th Extraordinary Assembly of the CPPS adopted the Declaration on IUU fishing. This Declaration calls on its members to strengthen information sharing, encourage the use of satellite technology to increase transparency, improve monitoring and surveillance of fishing activities in the region, and requests the CPPS Secretary General to identify international cooperation mechanisms to strengthen the capacity of its members to combat and prevent IUU fishing.³¹

On November 3, 2020, the foreign ministers of Ecuador, Colombia, Chile, and Peru adopted a declaration in which they recognised the need to optimise coordination, cooperation, and information exchange mechanisms in real time, in order to highlight alleged IUU fishing practices and promote the adoption of rapid and effective measures at the local and regional levels. In addition,

they expressed their willingness to hold meetings to join efforts and consolidate common interests aimed at ensuring the conservation and sustainable use of marine resources in the region.³²

3.2.4 Reflections on conservation efforts to achieve policy targets

While the BBNJ agreement will bring with it national plans and policies to implement it, it has become evident that it will create a number of additional international objectives related to biodiversity conservation, particularly around the Rio Conventions, the Sustainable Development Goals and others such as World Heritage. Likewise, the States have obligations for their citizens derived from regulations but also from other conventions that guarantee minimum standards for all humanity in terms of fundamental rights, for which the preservation of the marine environment is one.

This involves several considerations, on which we present some reflections.

Likewise, broad solutions are needed to reduce the effects of biodiversity loss and manage the drivers of global change, avoiding the point of no return associated with not reaching unsustainable temperatures beyond 1.5°C. As is also widely recognised in science, the role of the oceans in mitigating these effects by sequestering and maintaining carbon underwater is critical in seeking such solutions, and this recognition of the interdependence of global goals must be strongly emphasized.

The role of regional cooperation is key in this regard, since it is in the regions where there is potential to find opportunities for solutions in an articulated manner, considering shared biological, economic and social characteristics.

It is essential to consider that the common understanding between treaties, the indivisibility of ecological processes and the global dependence of resources in the high seas can find a point of convergence in the conservation measures suggested here. If managed in an integrated manner in the broader seascapes, conservation efforts can be tools for effective articulation between States to meet global, regional and national policy goals.

30 Cremers, K., Wright, G., Rochette, J., „Options for Strengthening Monitoring, Control and Surveillance of Human Activities in the Southeast Pacific Region“, STRONG High Seas Project, 2020.

31 http://cpps.dyndns.info/consulta/documentos/xiii_asamblea_extra_declaracion.pdf

The countries of the Southeast Pacific region have different positions with respect to agreements such as UNCLOS while sharing a vision of the Southeast Pacific marine territory. Therefore it may be beneficial to join efforts across these commitments, considering fundamental rights included transversally in the Sustainable Development Goals (SDGs).

Proposals and recommendations:

➤ Knowledge about the socio-economic realities that activities in the high seas generate as well as their biophysical characteristics and the functioning of ecological processes are fundamental for recognizing potentials and limitations in the potential conservation options for the region. This should not be an obstacle to aspire to have planning and management tools that allow States, regional organisations,

and other actors to carry out balanced plans between the growing demands and the natural capacity of the ecosystems to supply them.

➤ The lessons learned on conservation and sustainable use in management areas such as those in Antarctica under CCAMLR or the proposed marine areas to be declared by OSPAR (currently included in the WCMC Protected Areas Database).

➤ Conservation measures can be a vehicle for the effective achievement of the future BBNJ agreement, which will also depend on regional cooperation and partnerships between public and private initiatives, and perhaps most importantly, on States willing to champion the conservation and sustainable use of marine biodiversity, address climate change and advance globally agreed Sustainable Development Goals (Bueno, 2021).

Table 9: Linking conservation measures and SDG 14 goals in the Southeast Pacific.

Conservation measures / SDG 14 Goals	14.1 Prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.	14.2 Sustainably manage and protect marine ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration.	14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels	14.4 Effectively regulate harvesting and end overfishing, IUU fishing and destructive fishing practices, and implement science-based management plans	14.5 Conserve at least 10% of coastal and marine areas, consistent with national and international law and based on the best available scientific information
Maritime Transport					
IMO's PSSAs	Malpelo Island, Galapagos Archipelago, Paracas National Reserve	Malpelo Island, Galapagos Archipelago, Paracas National Reserve			Malpelo Island, Galapagos Archipelago, Paracas National Reserve
Preventing discharges and pollution from ships					
Regulating shipping routes					
Regulating shipping - noise					
Regulation on chemical use					
Deep-Sea Mining					
ISA's APEI					
ISA's REMP					

Conservation measures / SDG 14 Goals	14.1 Prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.	14.2 Sustainably manage and protect marine ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration.	14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels	14.4 Effectively regulate harvesting and end overfishing, IUU fishing and destructive fishing practices, and implement science-based management plans	14.5 Conserve at least 10% of coastal and marine areas, consistent with national and international law and based on the best available scientific information
Fishery conservation measures					
FAO's VME		SPRFMO		SPRFMO	SPRFMO
Fishing gear recommendations					
Ecosystem approach to fisheries		SPRFMO, IATTC			
Reduce turtle bycatch		IATTC			
Reducing incidental catches of seabirds					
Recommendations on shark conservation		IATTC			
Monitoring, control and surveillance		SPRFMO, IATTC			
Observer programs		SPRFMO, IATTC			
Total allowable catch (TAC)					
Disposal of ghost gear					
CITES					
Cross-sectoral measures					
Marine protected areas	2 establishment processes; MPA networks	2 establishment processes; MPA networks		2 establishment processes; MPA networks	2 establishment processes; MPA networks
UNESCO heritage sites		1 designation process			1 designation process
CMS					
IWC					
ACAP					
Global initiatives					
Waste management from land-based sources					
Adaptive management					
Climate change mitigation					

Note: ■ **Green** = Existing in the region. ■ **Yellow** = Not existing in the region, but supports progress towards SDGs.

4. Summary and Outlook

4.1 Summary

Human well-being is dependent on maintaining healthy and productive ocean ecosystems, including in ABNJ. Effective conservation efforts are essential to increase the resilience of marine ecosystems and ensure the protection of the marine environment and key biodiversity components from pressures resulting from human activities and climate change. However, to date there are limited measures to support conservation efforts in ABNJ and only ca. 1% are designated as marine protected areas globally.

This report shows that all current measures to support conservation efforts in ABNJ in the Southeast Pacific are fishery management measures implemented through the two active RFMOs in the region. These efforts include ABMTs as well as measures focused on, for example, research, MCS, total allowable catch, and single species management recommendations. ABMTs and sectoral measures related to, for example, shipping and deep-sea mining exist, but are not currently implemented in the region. Similarly, no MPAs or MPA networks have been established in ABNJs in the region, which is limited by the lack of a legal mandate to establish MPAs in ABNJs. However, MPAs have been established in areas within national jurisdiction and there was an announcement at COP 26 by the governments of Colombia, Costa Rica, Ecuador, and Panama to increase protection of the Eastern Tropical Pacific Marine Corridor. Although there is increasing scientific knowledge and information pointing to the importance of these areas and urging action to conserve and sustainably manage biodiversity in ABNJ, the Southeast Pacific, and its important contribution to human well-being, remains at risk. However, numerous resources exist to help decision-makers indicate where conservation efforts might be needed and point to potential priorities for management, including about the conservation of KBAs, IBAs, and EBSAs, as well as the implementation of MSPs, EIAs, and SEAs. The study region includes, today, seven IBAs and fifteen EBSAs (five in ABNJ) that have been identified and described by the scientific community and recognized in different frameworks - but all of them remain without any legal protection status.

The ongoing degradation of the marine environment in ABNJs, including in the Southeast Pacific, means that significant and coordinated actions are needed immediately. Actions should be taken through ABMTs and other sectoral efforts, as well as coordinated cross-sectoral actions, such as the establishment and effective management of MPAs and MPA networks. Measures to support conservation efforts will also need to be supported by capacity building, financial mechanisms, monitoring, control and surveillance, and stakeholder engagement and participation to ensure the successful development, implementation and enforcement of conservation efforts. The implementation of integrated ecosystem-based ocean management will be particularly important to facilitate and ensure the effectiveness of conservation measures.

4.2 The role of integrated management

Streamlining, rationalization and integration (Warner, 2014) of governance, resources and measures will be essential to develop a comprehensive and cost-effective approach to the conservation and management of biodiversity in ABNJs. Any new international legal instrument or new conservation measure may require specific efforts (human, logistical and financial) by relevant member states for implementation and such implications will need to be considered in terms of effectiveness, especially in terms of implementation capacity.

In this regard, there is a need to strategically integrate the environmental, social and economic objectives necessary to address the various human impacts and their cumulative effects on marine ecosystems and the long-term conservation and sustainable use of marine resources. The concept links well with Ecosystem-Based Integrated Ocean Management (EB-IOM), which is an „adaptive approach for governing human activities at sea, rooted in the ecosystem approach, guided by the SDGs, with a strong focus on improving the ecological status of the ocean and on strategic integration across governance, knowledge and stakeholder silos“ (Lieberknecht, 2020).


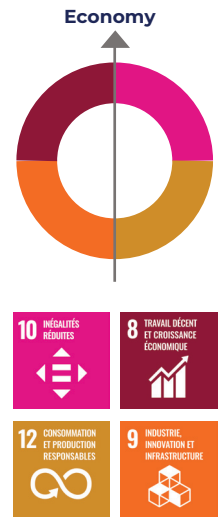
It is a holistic, ecosystem and knowledge-based approach that „ensures the sustainability and resilience of marine ecosystems with tailor-made solutions to capture local conditions“ (Winther et al., 2019). It therefore requires a scientific understanding of the natural resource characteristics of individual ecosystems (and increasingly, their linkages) and brings together multiple sectors, institutions, organizations and processes to integrate and balance different ocean uses (Winther et al., 2020). In addition, EB-IOM requires vertical (local to international) and horizontal (across government ministries) governance integration, knowledge integration through the merging of social, economic, physical and biological needs and values, stakeholder integration through participatory processes, transboundary integration, and an integration of system dynamics to maintain and develop healthy, resilient and productive ecosystems, thereby supporting a sustainable ocean economy (Lieberknecht, 2020; Winther et al., 2020).

A report from the STRONG High Seas project exploring integrated management and its role as a foundation for conservation efforts in the Southeast Pacific is scheduled for release in the first half of 2022.

4.3 Interdependencies between conservation and sustainable use of marine biodiversity in ABNJ and achievement of SDGs

Measures to support conservation efforts underpin the functioning of the biosphere (also called natural capital). Ensuring this foundation is essential for progress towards the Sustainable Development Goals (SDGs). Table 10 shows the hierarchical structure of the SDGs in that those biosphere-related targets support progress toward societal and, in turn, economic goals. The ocean (SDG 14) is interconnected with land, freshwater flows and climate, and provides a vast range of benefits to humanity. The ocean provides benefits worth 1.5 trillions³³ of dollars per year globally and supports hundreds of millions of jobs and contributes to the Gross Domestic Product (GDP) of all countries, both coastal and inland. Thus, the ocean also contributes to reduced hunger and poverty, improved health, shared across gender, social and national boundaries. However, accessing ocean benefits gives rise to pressures that drive the decline of its health if not properly governed. Thus, managing this complex system requires developing and using appropriate measures to support conservation efforts.

Table 10: Measures to support conservation efforts underpin the achievement of the Agenda 2030

Examples of conservation efforts in ABNJ that could/would support achievement of various SDGs:	Relevant Sustainable Development Goals
<p>SDG17 - ABNJ require cross-sectoral and multi-stakeholder efforts to effectively design and implement measures to support BBNJ conservation. It is therefore essential that States and stakeholders develop new partnerships and create innovative forms of collaboration to leverage actions towards a shared vision of sustainability, including for achieving the other 16 SDGs.</p>	<p>Partnerships for achieving the SDGs</p> 
<p>SDG8 - Efforts to conserve and sustainably use species and ecosystems, including in ABNJ, can contribute to decent work and economic growth in existing (e.g., fisheries, research) and emerging (e.g., bioprospecting) sectors, by ensuring that resources are healthy and available for future generations.</p> <p>SDG9 – Industry innovation and infrastructure can be boosted through the transfer of technology, data, and knowledge between States, organizations and stakeholders, as well as through innovative governance and management practices to support sustainable development in ABNJ.</p> <p>SDG10 - The just exploitation of common resources through fair access to resources, data and technologies, and the distribution of benefits amongst societal groups and States could contribute to reducing inequalities within the region and globally.</p> <p>SDG12 - There is a clear link between responsible production/use and consumption of living and non-living marine resources and short, medium and long-term development opportunities for economies to thrive. Similarly, the goods and services produced in (or dependent on) ABNJ, have the potential to focus on long-term value creation for societies and economies, if sectors such as fisheries, transport, mining or waste treatment are managed responsibly, sustainably and proactively.</p>	<p>Economy</p> 

Examples of conservation efforts in ABNJ that could/would support achievement of various SDGs:	Relevant Sustainable Development Goals
<p>SDG1 - Natural resources and ecosystem functions that originate in (and depend on) ABNJ contribute directly and indirectly to livelihoods and economies, which in turn help alleviate poverty and provide development opportunities.</p> <p>SDG2 - The oceans play an important role in achieving the SDG „zero hunger“ by providing critical protein sources for people around the world, but this depends on maintaining functioning ecosystems and healthy fish stocks, both within and beyond national jurisdictions.</p> <p>SDG3 - ABNJ are essential to the health and well-being of people around the world, providing oxygen and regulating the climate, as well as acting as a source of inspiration for cultural, artistic and spiritual activities.</p> <p>SDG4 - ABNJs offer new opportunities through the exploration and scientific pursuit of quality education, including more inclusive and empowered participation of marginalized groups, such as women and indigenous communities.</p> <p>SDG7 - The ocean, including ABNJs, offers untapped potential to create affordable, clean energy from renewable sources such as wind, waves, tides, currents, temperature changes and osmotic energy.</p> <p>SDG11 - ABNJs not only provide food and income, but also enable travel, transportation (trade), renewable energy, telecommunications, medicines and other ecosystem services, which in turn contribute to the sustainability of cities and communities, particularly in island states, but also in landlocked countries.</p> <p>SDG 16 - Given the regional and global nature of ABNJ coordination and management, shared conservation measures offer opportunities to improve social justice and build stronger institutions through collaboration between countries and regions with shared goals and joint leadership for sustainable resource use and management.</p>	<p>Society</p>         
<p>SDG 6 - Ocean processes help regulate climate, precipitation and thus water availability, contributing to clean water and sanitation, contributing directly and indirectly to social well-being and economic resilience.</p> <p>SDG 13 - ABNJ represent about 50% of the planet's surface and are an essential part of the Earth's climate system that offers a range of options for climate mitigation action, including through their ability to function as a carbon dioxide sink.</p> <p>SDG 14 - Life under water - see <i>Table 8</i>.</p> <p>SDG 15 - The ABNJ contain major ocean currents, which regulate global climate and weather processes, as well as support species and ecosystems. They directly support life on land, for example by providing more than half of the world's oxygen, raw materials for development, food and nutrition, medicine, habitats for migratory species, and cultural and spiritual services.</p>	<p>Biosphere</p>     

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Published by

Institute for Advanced Sustainability Studies e. V. (IASS)
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ViSdP

Prof. Dr. Mark G. Lawrence, Managing Scientific Director

May 2022



About the STRONG High Seas Project

The STRONG High Seas project is a five-year project that aims to strengthen regional ocean governance for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. Working with the Secretariat of the Comisión Permanente del Pacífico Sur (CPPS; Permanent Commission for the South Pacific) and the Secretariat of the West and Central Africa Regional Seas Programme (Abidjan Convention), the project will develop and propose targeted measures to support the coordinated development of integrated and ecosystem-based management approaches for ocean governance in areas beyond national jurisdiction (ABNJ). In this project, we carry out transdisciplinary scientific assessments to provide decision-makers, both in the target regions and globally, with improved knowledge and

understanding on high seas biodiversity. We engage with stakeholders from governments, private sector, scientists and civil society to support the design of integrated, cross-sectoral approaches for the conservation and sustainable use of biodiversity in the Southeast Atlantic and Southeast Pacific. We then facilitate the timely delivery of these proposed approaches for potential adoption into the relevant regional policy processes. To enable an interregional exchange, we further ensure dialogue with relevant stakeholders in other marine regions. To this end, we set up a regional stakeholder platform to facilitate joint learning and develop a community of practice. Finally, we explore links and opportunities for regional governance in a new international and legally binding instrument on marine biodiversity in the high seas.

Project duration: June 2017 – May 2022

Coordinator: Institute for Advanced Sustainability Studies (IASS)

Implementing partners: BirdLife International, Institut for Sustainable Development and International Relations (IDDRI), International Ocean Institut (IOI), Universidad Católica del Norte (UCN), WWF Colombia, WWF Germany.

Regional partners: Secretariat of the Comisión Permanente del Pacífico Sur (CPPS), Secretariat of the Abidjan Convention

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Partners of the STRONG High Seas project:



International Ocean Institute
African Region

