European Union Overseas Coastal and Marine Protected Areas

Overview of coastal and marine conservation efforts in the European Union's Overseas Countries and Territories and Outermost Regions

Carole Martinez, Sylvie Rockel, Caroline Vieux

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This publication has been made possible by funding from the French Development Agency (AFD).

Published by: IUCN, Gland, Switzerland

Citation: Martinez, C., Rockel, S., Vieux, C. European Overseas coastal and marine protected areas - overview of coastal and marine conservation efforts in the European Union's Overseas Countries and Territories and Outermost Regions (2017). Gland, Switzerland: IUCN, xxvii + 182 pp.

ISBN: 978-2-8317-1866-8

DOI: 10.2305/IUCN.CH.2017.13.en

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Available from: IUCN (International Union for Conservation of Nature)
Regional Seas and European Union Outermost Regions and
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This report presents information available until August 2017. The authors of this report are aware that information on this topic changes quickly and the complexity of the issues and diversity of situations can never be fully reflected in an overview report.

About IUCN

IUCN, International Union for Conservation of Nature, is a membership Union composed of both governments and civil society organisations. It provides public, private and non-governmental organisations with the knowledge and tools that enable human progress, economic development and nature conservation to take place together.

Created in 1948, IUCN is now the world's largest and most diverse environmental network, harnessing the knowledge, resources and reach of 1,300 Member organisations and some 10,000 experts. It is a leading provider of conservation data, assessments and analysis. Its broad membership enables IUCN to fill the role of incubator and trusted repository of best practices, tools and international standards.

IUCN provides a neutral space in which diverse stakeholders including governments, NGOs, scientists, businesses, local communities, indigenous peoples organisations and others can work together to forge and implement solutions to environmental challenges and achieve sustainable development.

Working with many partners and supporters, IUCN implements a large and diverse portfolio of conservation projects worldwide. Combining the latest science with the traditional knowledge of local communities, these projects work to reverse habitat loss, restore ecosystems and improve people's well-being.
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FOREWORD

Far-flung yet closely linked to Europe, the EU Overseas are often overlooked at the European, regional and global levels and seldom sufficiently acknowledged as key players in global marine conservation. Yet sit for a moment and locate these 34 entities on a map - scattered across our entire planet's oceans - and you can start to comprehend their strategic importance. Add the fact that their combined marine area is the largest in the world and their full significance becomes apparent.

In recent years efforts to protect the marine and coastal environment have gained significant momentum as the urgency of the threats becomes increasingly clear and there is growing political awareness of the multiple benefits that marine protected areas (MPAs) can deliver. This has led to a proliferation of ambitious new MPA declarations. Nowhere is this ambition more clearly evident than in the EU Overseas. Recognizing that a healthy marine environment is fundamental for their economies, particularly the fisheries and tourism sector, and the well-being of their citizens, collectively they protect more than 30% of their marine area including a number of the largest MPAs in the world. However, the EU Overseas are largely missing in the global debate and previous assessments of progress in the protection of marine areas have often excluded them from the analysis.

This report provides a first comprehensive overview of marine conservation efforts in the EU Overseas: In the context of rapid global development in these areas, it takes stock and pinpoints the actions required to improve marine protection and strengthen resilience in these diverse territories and to reconcile this with the opportunities provided by development of the blue economy and the challenges in the face of climate change.

The important contribution of the EU Overseas towards Europe's obligations under the Convention on Biological Diversity (CBD) Aichi Targets and Sustainable Development Goal 14 of protecting 10% of its marine areas needs to be better acknowledged along with the significant role they can play in Europe's agenda for better ocean governance.

Taking account of their geographical spread, the EU Overseas represent key partners at the regional and global level. Recognising that effective protection of the vast marine environment can only be achieved through an interconnected system and not one separated by political boundaries. Collaborative approaches and planning are required to ensure connectivity within operational, well-managed networks of marine protected areas to ensure the resilience of the ecosystems they protect.

The achievements of the EU Overseas should rightly be praised and used to encourage further action as well as being an inspiration to others. EU Overseas are in many ways global marine leaders in this field and this report helps to put this on the map. I am proud that IUCN's work has contributed to the promotion of the EU Overseas and their achievements since 2010 and continues to support conservation on-the-ground through the BEST Initiative. In my personal travel to these areas I have been struck by the dedication and commitment of many people. Despite geographical isolation and limited resources they have made such a large contribution across the world oceans. Rarely, in the field of marine conservation, have so many had so few to thank for so much.

Carl Gustaf Lundin
IUCN, Director of the Global Marine and Polar Programme

ACKNOWLEDGEMENTS

This report would not have been possible without the valuable help and input from countless people caring for the protection of the oceans and the EU Overseas. We wish to thank most warmly all the people who offered comments and input to this report, as well as figures and pictures. We particularly want to thank Michael Vollmar for his help with mapping, but also the following people (in alphabetical order): Neil Alloncle, Flora Artzner, Timothy Austin, Claire-Sophie Azam, José Azevedo, Sandra Besson, Paul Brewin, Paul Brickle, Judith Brown, Faith Bulger, Helena Maria Gregório Pina Calado, Mahe Charles, John Claydon, Elizabeth Clingham, Alison Copeland, Emmanuel Coutures, Estelle Crochelet, François Devink, Sophie-Dorothée Duron, Jan Ekebom, Regis Etaix-Bonnin, Leanne Fernandes, Antoine Forget, Christophe Fonfreyde, Aurélie Fourdrain, Nicholas Fournier, David Freestone, Serge Garcia, Aurélie Ghysels, Olivier Gilg, Anne-Claire Goarant, Sébastien Gréaux, James Gumbs, Coste Gustave, Jonathan Hall, Selma Haouet, Ricardo Haroun Tabraue, David Herbert, Paul Hoetjes, Sandra Hohmann, Maël Imirizaldu, Eseld Imms, Brigitte Jacobsen, Fred Jacq, Rachel Jones, David Johnson, Jean Kape, Dan Laffoley, Christophe Lefebvre**,** Jean-Christophe Lefeuvre, Céline Lesponne, Ramon de Leon, Ruben Lopez, Carl Gustaf Lundin, Luisa Madruga, Atoloto Malau, Jean-Philippe Maréchal, Ilaria Marengo, Sophie Marinesque, Frank Mazeas, Emanuel Mendonça, Kally de Meyer, Hélène Migot, Kate Morrison, Tanguy Nicolas, Tara Pelembe, Jerome Petit, Steven Piel, Kévin Pineau, Christina McTaggart Pineda, Rosa Pires, Benjamin Ponge, Alwyn Ponteen, Jean-Pascal Quod, Olivier Raynaud, Romain Renoux, Eric Salamanca, Pascale Salaun, Ricardo Serrão Santos, Martin Schiøtz, Mandy Shaller, Posa Skelton, Joseph Smith-Abbott, Helene Souan, Mark Spalding, Paul Taconet, Maria Taylor, Paul Tixier, Tammy Trott, Ulric Trotz, Amandine Vaslet, Fabien Védié, Anne-Gaëlle Verdier, Mark Vermeij, Francisco Wallenstein, Benito Wheatley, Kathleen Wood, Nancy Woodfield Pascoe, Stuart P. Wynne.

We would also like to thank most warmly the French Biodiversity Agency (previously known as the French MPA Agency), TAAF, SAERI, the Coral Sea Marine Park for sharing data.

LIST OF ACRONYMS AND ABBREVIATIONS

AAMP	*Agence des aires marines protégées* (French marine protected areas agency) Now part of the French agency for biodiversity (*AFB*)
ABNJ	Areas beyond national jurisdiction
AFB	*Agence Française pour la Biodiversité* (French agency for biodiversity)
BAS	British Antarctic Survey
BIOS	Bermuda Institute of Ocean Sciences
BIOT	British Indian Ocean Territoriy
BVI	British Virgin Island
CBD	Convention on Biological Diversity
CC	Climate change
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources
CNRS	*Centre national de la recherche scientifique* (French National Center for Scientific Research)
COP	Conference of the Parties
DCNA	Dutch Caribbean Nature Alliance
DENR	Department of Environment and Natural Resources (Bermuda Government)
DIREN	*Direction de l'Environnement de Polynésie Française* (Environment Department of French Polynesia)
DRM	*Direction des Ressources Marines et Minières* (Department for Marine Resources and Mining of French Polynesia)
EBSA	Ecologically or biologically significant area
ECACC	Enhancing Capacity for Adaptation to Climate Change
ECS	Extended Continental Shelf
EEZ	Exclusive Economic Zone
EFZ	Exclusive Fisheries Zone
EMMA	Educational marine managed areas
FPNA	*Fundacion Parke Nacional Arikok* (Arikok National Park Foundation in Aruba)
EU	European Union
FAO	Food and Agriculture Organization (of the United Nations)
GEF	Global Environment Facility
GIS	Geographic Information System
ICRI	International Coral Reef Initiative
IMO	International Maritime Organization
IUCN	International Union for Conservation of Nature
JNCC	Joint Nature Conservation Committee
LME	Large marine ecosystem
LMMA	Locally marine managed area
MCPA	Marine and coastal protected area
MMA	Marine managed area
MMAP	Marine Mammal Action Plan for the Wider Caribbean
MNHN	*Muséum national d'Histoire naturelle* (French National Museum of Natural History)
MPA	Marine protected area
MSP	Maritime spatial planning
n/a	not available
NGO	Non-governmental organisation
NOAA	National Oceanic and Atmospheric Administration
NPT	National Park Trust
OCTs	Overseas Countries and Territories
OECM	Other Effective Area-Based Conservation Measure

OMMAG	*Observatoire des Mammifères Marins de l'Archipel Guadeloupéen* (Observatory for Marine Mammals of the Archipelago Guadeloupe)
OMMM	Observatoire du Milieu Marin Martiniquais
ONERC	*Observatoire National des Effets du Réchauffement Climatique* (National Observatory on the Effects of Global Warming
OR(s)	Outermost Region(s)
OSPAR	Oslo/Paris convention (for the Protection of the Marine Environment of the North-East Atlantic)
OTEP	Overseas Territory Environment Programme
PAME	Protection of the Arctic Marine Environment
PILN	Pacific Invasives Learning Network
PSSA	Particularly Sensitive Sea Area
RAMP-COI	*Réseau des Aires Marines Protégées – Commission de l'Océan Indien*
REMMOA	*Recensement des Mammifères marins et autre Mégafaune pélagique par Observation Aérienne* (Survey of marine mammals and other pelagic megafauna by aerial observation)
RNN	*Réserve naturelle nationale* (French national nature reserve)
SAC	Special Area of Conservation
SBMU	Saba Bank Management Unit
SCF	Saba Conservation Foundation
SAERI	South Atlantic Environmental Research Institute
SCI	Site of Community Importance
SGSSI	South Georgia and South Sandwich Islands
SMSG	Small Mammal Specialist Group
SPA	Special Protection Area
SPAW-RAC	Specially Protected Area and Wildlife – Regional Activity Centre
SPREP	Secretariat of the Pacific Regional Environment Programme Caribbean
SRCAE	Schéma Régional Climat Air Energie
STENAPA	St. Eustatius National Parks Foundation
STINAPA	National Parks Foundation Bonaire
TAAF	*Terres Antarctiques et Australes Françaises* (Territory of the French Southern and Antarctic Lands)
TCI	Turks and Caicos Islands
TNC	The Nature Conservancy
TPA	Terrestrial Protected Area
UN CLCS	United Nations Commission on the Limits of the Continental Shelf
UNCLOS	United Nations Convention on the Law of the Sea
UNESCO	United Nations Educational, Scientific and Cultural Organization
UK	United Kingdom
UKOT	United Kingdom Overseas Territory
UKOTCF	United Kingdom Overseas Territories Conservation Forum
UNEP-WCMC	United Nation Environment Programme – World Conservation Monitoring Centre
VMEs	Vulnerable Marine Ecosystems
WCPA	World Commission on Protected Areas
WHS	World Heritage Site
ZPR	*Zone de pêche réglementée* (regulated fishing area)

USEFUL DEFINITIONS AND HOW TO USE THE DATA IN THIS REPORT

Maritime zones and boundaries

This report uses the official terms defined by the United Nations Convention on the Law of the Sea (UNCLOS) when referring to maritime zones and boundaries as illustrated in **Figure 1** below.

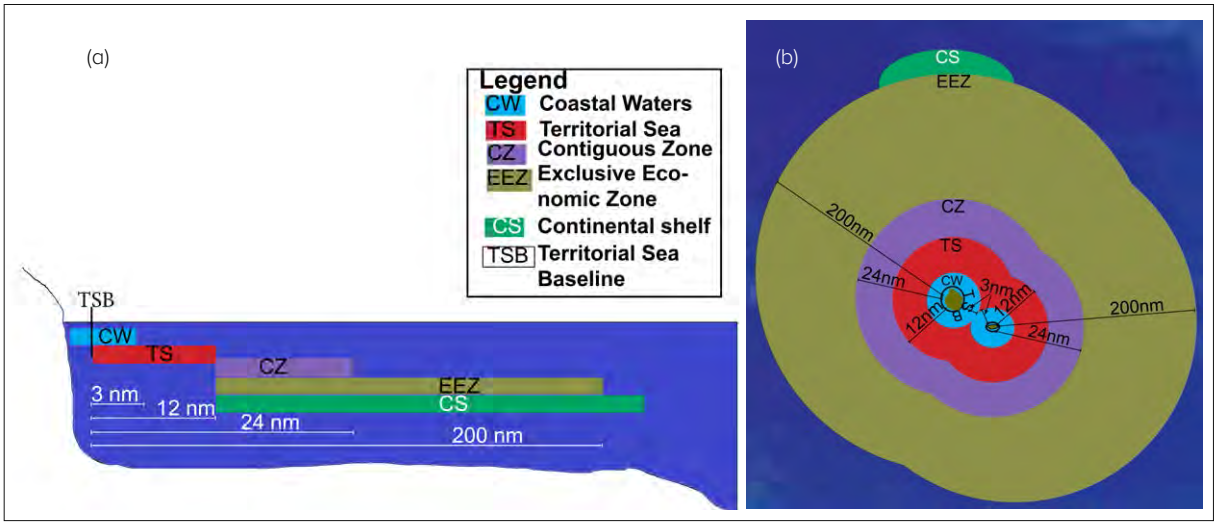


Figure 1: Illustration of maritime zones and boundaries according to UNCLOS with distances in nautical miles (nm) (a) cross-section; (b) top view. Design: IUCN

Baseline (UNCLOS part II, section 2 and part IV)

According to UNCLOS article 5 the normal baseline (for measuring the breadth of the territorial sea) is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State. These baselines can be drawn straight joining appropriate points if coastlines are deeply indented, cut into or fringed by islands, such as for many **archipelagic States** constituting wholly by one or more archipelagos. Archipelago means group of closely interrelated islands that form an intrinsic geographical, economic and political entity.

Territorial Sea - 12 nautical mile limit (UNCLOS part II, section 2)

The territorial sea is a belt of water not exceeding 12 nm in width measured from the territorial sea baseline. Coastal state's sovereignty extends to the territorial sea, its seabed and subsoil, and to the air space above it. This sovereignty is exercised in accordance with international law as reflected in the UNCLOS. The limitation on sovereignty in the territorial sea is the right of innocent passage for foreign ships.

Contiguous Zone - 24 nautical mile limit (UNCLOS part II, section 4)

The Contiguous Zone is a belt of water contiguous to the territorial sea, the outer limit of which does not exceed 24 nm from the territorial sea baseline. In this zone, a coastal state may exercise control necessary to prevent and punish infringement of its customs, fiscal, immigration or sanitary laws and regulations within its territory or territorial sea.

Exclusive Economic Zone - 200 nautical mile limit (UNCLOS part V)

The Exclusive Economic Zone (EEZ) is an area beyond and adjacent to the territorial sea. The outer limit of the exclusive economic zone cannot exceed 200 nm from the baseline from which the breadth of the territorial sea is measured. In the EEZ, a coastal

state has sovereign rights for the purpose of exploring and exploiting, conserving and managing all natural resources of the seabed, waters superjacent to the seabed and its subsoil together with other activities such as the production of energy from water, currents and wind. Jurisdiction also extends to the establishment and use of artificial islands, installations and structures, marine scientific research, the protection and preservation of the marine environment, and other rights and duties.

In the exclusive economic zone, the coastal State has (UNCLOS art.56):

> 1.(a) sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds;
> (b) jurisdiction as provided for in the relevant provisions of this Convention with regard to:
> (i) the establishment and use of artificial islands, installations and structures;
> (ii) marine scientific research;
> (iii) the protection and preservation of the marine environment;
> (c) other rights and duties provided for in this Convention.
>
> 2. In exercising its rights and performing its duties under this Convention in the exclusive economic zone, the coastal State shall have due regard to the rights and duties of other States and shall act in a manner compatible with the provisions of this Convention.
> 3.The rights set out in this article with respect to the seabed and subsoil shall be exercised in accordance with Part VI.

IUCN protected area management categories applied to marine areas

(IUCN, 2012 Guidelines)

Ia Strict nature reserve

Strictly protected areas, often referred to as a marine reserve, set aside to protect biodiversity and also possibly geological/geomorphological features, where human visits, use and impacts are strictly controlled and limited to ensure protection of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring. A marine reserve usually connotes "maximum protection", where all resource removals are strictly prohibited. In some countries marine reserves allow for low-risk removals to sustain local communities.

Ib Wilderness area

Marine wilderness areas should be sites of relatively unmodified, undisturbed seascape, significantly free of human disturbance (e.g. direct or indirect impacts, underwater noise, light pollution etc.), works or facilities and capable of retaining their natural character and influence through effective management.

II National park / Marine park

Marine parks emphasize the protection of ecosystems but allow light human use, such as recreational activities and nature tourism (e.g. diving, snorkeling, swimming or boating) as well as research (including managed extractive forms of research). Extraction of living or dead material is generally prohibited, but (traditional) fishing may be allowed for indigenous people in low risk areas.

III Natural monuments or features

Established to protect outstanding natural features and their associated biodiversity and habitats, such as seamounts, submarine caverns or specific corallines as well as historical sites such as shipwrecks and cultural sites such as aboriginal fishing grounds. As for category II extractive use is usually only allowed for indigenous people (traditional fishing) and managed research.

IV Habitat/species management area

Aims to protect particular species or habitats, such as habitats or threatened species or areas important for vulnerable life stages, such as spawning aggregations, breeding sites and migration routes, often with active management intervention. Seasonal protection zones (e.g. turtle nesting beaches that are protected during the breeding season) might also qualify as category IV.

V Protected seascape

Protect and sustain seascapes and associated marine conservation and balanced interaction between nature and culture through limited active management. Seascapes can be sustainably used by the local communities living within but the primary objective is nature conservation and protection.

VI Sustainable use of natural resources

Maintain predominantly natural habitats and ecosystems, together with associated cultural values and traditional natural resource management systems, allowing low-level sustainable use of some species under the objective of nature conservation in at least 75% of the MPA that ensures local communities' livelihoods.

Continental Shelf (UNCLOS part VI)

Geologically, the continental shelf refers to the continental margin between the shoreline and the point where the superjacent water is approximately 100 – 200 m deep. Juristically, according to the Convention, the continental shelf of a coastal State comprises the submerged prolongation of the land territory of the coastal State - the seabed and subsoil of the submarine areas that extend beyond its territorial sea to the outer edge of the continental margin, or to a distance of 200 nautical miles where the outer edge of the continental margin does not extend up to that distance.

High Seas / International waters (UNCLOS part VII)

The High Seas are waters not included in the exclusive economic zone, terrestrial sea or in the internal waters of a State or in the archipelago waters of an archipelago State, and are open to all States, whether coastal or land-locked. Freedom of the High Seas shall be exercised by all States under the conditions laid down by this Convention and by other rules of international law. It comprises, *inter alia*, both for coastal and land-locked States freedom of navigation, overflight, fishing, scientific research, freedom to lay submarine cables and pipelines and to construct artificial islands and other installations permitted under international law.

Marine protected areas

IUCN Definition of a Protected Area and Marine Protected Area

IUCN defines a protected area as: *A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.* (IUCN, 2008)

According to *Guidelines for applying the IUCN Protected Area Management Categories to Marine Protected Areas* (IUCN, 2012) six protected area categories are described based on management objectives (see text box) as well as four broad governance types, with respect to who holds decision-making, management authority and responsibility: governance by government, shared governance, private governance and governance by indigenous people/local. All six protected area categories could have any type of ownership or management authority (governance types).

MPAs usually restrict extracting activities such as fishing, oil and gas mining, but also tourism; development, construction, ship transit and the use of ultrasonic devices like sonar (interfering with cetaceans) may be limited. These limitations can be permanent or temporary (e.g. seasonal) to protect spawning/nursing grounds or to allow populations to recover.

Most MPAs are located in territorial waters to allow appropriate enforcement; fewer are in exclusive economic zones and international waters.

Coastal, nearshore, and offshore MPAs

In this report **coastal MPAs** are areas at the interface between land and sea, located in the coastal waters (extending 3 nm from the coast line). This includes mangrove zones; beach and cliff areas providing habitat for marine animals, as well as coral reefs and seagrass beds that are influenced / affected by the proximity of the land.

Nearshore MPAs are located in zones that extend seaward from the coast line beyond the breaker/surf zone (where waves begin to break) and that are influenced by the nearshore or longshore currents, running parallel to the coast. There is no clear-cut definition for the distinction between nearshore and offshore MPAs but in the context of this report, **offshore MPAs** refer to areas beyond the contiguous zone but within the exclusive economic zone, while nearshore MPAs are considered to be limited to the contiguous zone of a coastal state.

MPA network/system of MPAs

"An MPA network can be defined as a collection of individual MPAs or reserves operating cooperatively and synergistically, at various spatial scales, and with a range of protection levels, in order to fulfil ecological aims more effectively and comprehensively than individual sites could alone. The network will also display social and economic benefits, though the latter may only become fully developed over long time frames as ecosystems recover." (IUCN-WCPA, 2008)

An individual MPA usually refers to an area within a single contiguous location. Individual MPAs vary in size and joining several MPAs to a network can help to minimize socioeconomic impacts without compromising conservation and fisheries benefits (PISCO, 2011), while strengthening management and promoting education and cooperation among various stakeholders (Christie & White, 2007) as well as supporting connectivity between ecosystems.

Related terms referring to a collection of MPAs include *system* and *region* of MPAs, which are usually managed independently but tied together through a framework. However, these terms had not always been employed consistently. Therefore, the Convention on Biological Diversity agreed in 2004 to use **"***network***"** on a global level, while adopting *system* for national and regional levels. The *network* is a mechanism to establish regional and local systems, but carries no authority or mandate, leaving all activity within the **"***system***"**.

No-take zones

No-take zones (NTZs) are a specific type of MPA, where all forms of exploitation are prohibited and human activities severely limited, either temporarily (e.g. seasonally) or permanently, covering the entire MPA or designated zones.

Similarly ***integral marine reserves*** (IUCN cat. I) represent a legal protection with restricted access, prohibiting fisheries, development and any other activities impacting the habitat and species except as needed for scientific monitoring. As opposed to NTZs, protection in marine reserves is permanent, rather than seasonal or short-term (PISCO, 2011) in accordance with the IUCN definition of a protected area.

Similarly *integral* ***marine reserves*** (IUCN cat. I) are a legal protection with restricted access, prohibiting fisheries, development and any other activities impacting the habitat and species except as needed for scientific monitoring. As opposed to NTZs, protection in marine reserves is however permanent, rather than seasonal or short-term (PISCO, 2011) in accordance with the IUCN definition of a protected area.

International designations

Marine areas can also benefit from international designations such as:

World Heritage Site (WHS)

A WHS listed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) is a place or an area of outstanding cultural or natural importance. In collaboration with IUCN and other partners a special World Heritage Marine Programme was launched in 2006 to effectively conserve existing and potential marine areas of outstanding universal value. To date, marine areas represent less than 5% or 49 out of over 1073 sites (status August 2017). **Five World Heritage Sites with a marine connection reside in the European Overseas**: Lagoons of New Caledonia, Gough and Inaccessible Islands (both marine WHS), Henderson Island of Pitcairn, Ilulissat Icefjord in Greenland and the Taputapuātea *marae* complex in French Polynesia, inscribed for its cultural values, which are however strongly linked to the marine environment.

Man and the Biospheres (MaB) Reserves

This UNESCO program promotes *"a balanced relationship between humans and their environments"* by providing a scientific basis for the better use of biological diversity. A MaB reserve *"encompasses a mosaic of ecological systems"*, combining terrestrial, coastal, or marine ecosystems. Marine biosphere reserves are structurally similar to multiple-use MPAs, with a core area ringed by different degrees of protection. In 2012, a dedicated World Network of Islands and Coastal Biosphere Reserves was established, aiming to *"study, implement and disseminate island, marine and coastal strategies to preserve biodiversity and heritage, promote sustainable development, and adapt to and mitigate the effects of climate change."* The network currently counts 669 sites (status August 2017), including **14 marine or coastal MaB Reserves** within the **European Overseas waters**, covering almost 100,000 km^2, which largely overlap with existing protected areas.

Ramsar sites

Significant wetlands meeting certain criteria are identified by the Ramsar Convention and listed as Wetlands of International Importance. While not necessarily protected, these sites are indexed by importance for later recommendation to an agency that could designate it a protected area. Today, the Ramsar List of Wetlands is the world's largest network of protected areas with almost 2,300 sites covering more than 2.2 million km^2 (status: August 2017). There are **63 Ramsar sites** in EU Overseas, covering almost 50,000 km^2. This report counts

39 Ramsar sites with a coastal connection as part of the EU Overseas marine conservation efforts.

IUCN Red List of Threatened Species

The IUCN Red List of Threatened Species, known as the IUCN Red List, represents the world's most comprehensive inventory that assesses the conservation status of species and classifies them into nine groups (see box below), set through criteria such as population size, decline rate, geographic distribution area, and degree of population and distribution fragmentation. Marine protected areas and areas restricted to fishing can help to conserve threatened marine and coastal species as well as critical habitats for key life cycle stages.

How to use the data in this report

This report aims to provide the first qualitative assessment of coastal and marine conservation efforts in all European Union (EU) Outermost Regions (ORs) and Overseas Countries and Territories (OCTs). It presents an overview of coastal and marine protected areas (MPAs), including Ramsar Wetland sites under protection with a coastal connection, coastal/marine World Heritage Sites (WHS), and Man and Biosphere (MaB) reserves. The review also recognizes marine and coastal conservation efforts at national and regional level that are not (yet) identified as one of the six IUCN protected area management categories. Additional information on management and governance, surveillance and enforcement, criteria on representativeness, resilience and climate change is provided based on available data and experts' feedback. *The geographical entities in this publication and the presentation of the material do not imply the expression of any opinion whatsoever on the part of IUCN concerning the legal status of any country, territory, or area, or of its authorities. IUCN follows the United Nations as source for the names of countries and territories, as mentioned in the list of countries/territories from the United Nations Statistical Division: https://unstats.un.org/unsd/methodology/m49/. The names in this list are based on the United Nations Terminology Database (UNTERM).*

IUCN Red List Categories

EX	Extinct	No known individuals remaining
EW	Extinct in the wild	Known only to survive in captivity, or as a naturalized population outside its historic range
CR	Critically endangered	Extremely high risk of extinction in the wild
EN	Endangered	High risk of extinction in the wild
VU	Vulnerable	High risk of endangerment in the wild
NT	Near threatened	Likely to become endangered in the near future
LC	Least concern	Lowest risk; does not qualify for a more at-risk category; widespread and abundant taxa are included in this category
DD	Data deficient	Not enough data to make an assessment of its risk of extinction
NE	Not evaluated	Not yet evaluated against the criteria

EXECUTIVE SUMMARY

From the poles to the tropics, the European Union's Overseas (EU Overseas) span five oceans. They cover a combined exclusive economic zone (EEZ) of more than 19 million km² (5%) of the global ocean, and constitute the world's largest maritime area.

Scattered over more than 150 islands and often remote from any continent, the European Overseas harbour unique coastal and marine ecosystems with a large number of endemic species. Surrounded by vast marine areas the majority of Europe's marine species are found in the waters of the 9 Outermost Regions (ORs) and 25 Overseas Countries and Territories (OCTs). They are also home to over 20% of the world's atolls atolls with extensive lagoons and coral reefs.[1]

1 Petit, J. and Prudent, G. (2008). Climate Change and Biodiversity in the European Union Overseas Entities.

Pristine coral reefs in the no-take MPA of the British Indian Ocean Territory (BIOT) © Redfern Natural History, photo by Rohan Holt

Four out of 36 internationally recognized biodiversity hotspots[2] include EU Overseas, acknowledged for their stunning marine ecosystems. Two of the 16 Particularly Sensitive Sea Areas (PSSAs) worldwide designated by the International Maritime Organization (IMO) are located in EU Overseas waters. Five sites in the EU Overseas were identified by Mission Blue as Hope Spots or *"special places that are critical to the health of the ocean — Earth's blue heart. Some [of the 85] Hope Spots are already formally protected, while others still need defined protection."*

European Overseas offer real opportunities to champion marine conservation and contribute to global conservation targets, such as the CBD[3] Aichi Biodiversity Targets, the United Nations Sustainable Development Goals as well as the Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC).

10
LMEs

The 66 Large Marine Ecosystems (LMEs) are large regions of the world's oceans identified by NOAA for conservation purposes. They are often larger than 200,000 km² from coastal areas to the outer margins of major ocean current systems, characterized by distinct ecological features.

4
biodiversity hotspots

Earth's 36 most biologically rich and threatened areas as defined by 2 criteria

19
EBSAs

(ecologically and biologically significant marine areas)

Over 200 special places in the world's oceans as identified by 7 scientific criteria, adopted by the CBD COP

2
PSSAs

The worldwide 16 Particularly Sensitive Sea Areas need special protection through action by the International Maritime Organization (IMO) because of its significance for recognized ecological or socio-economic or scientific reasons and which may be vulnerable to damage by international maritime activities

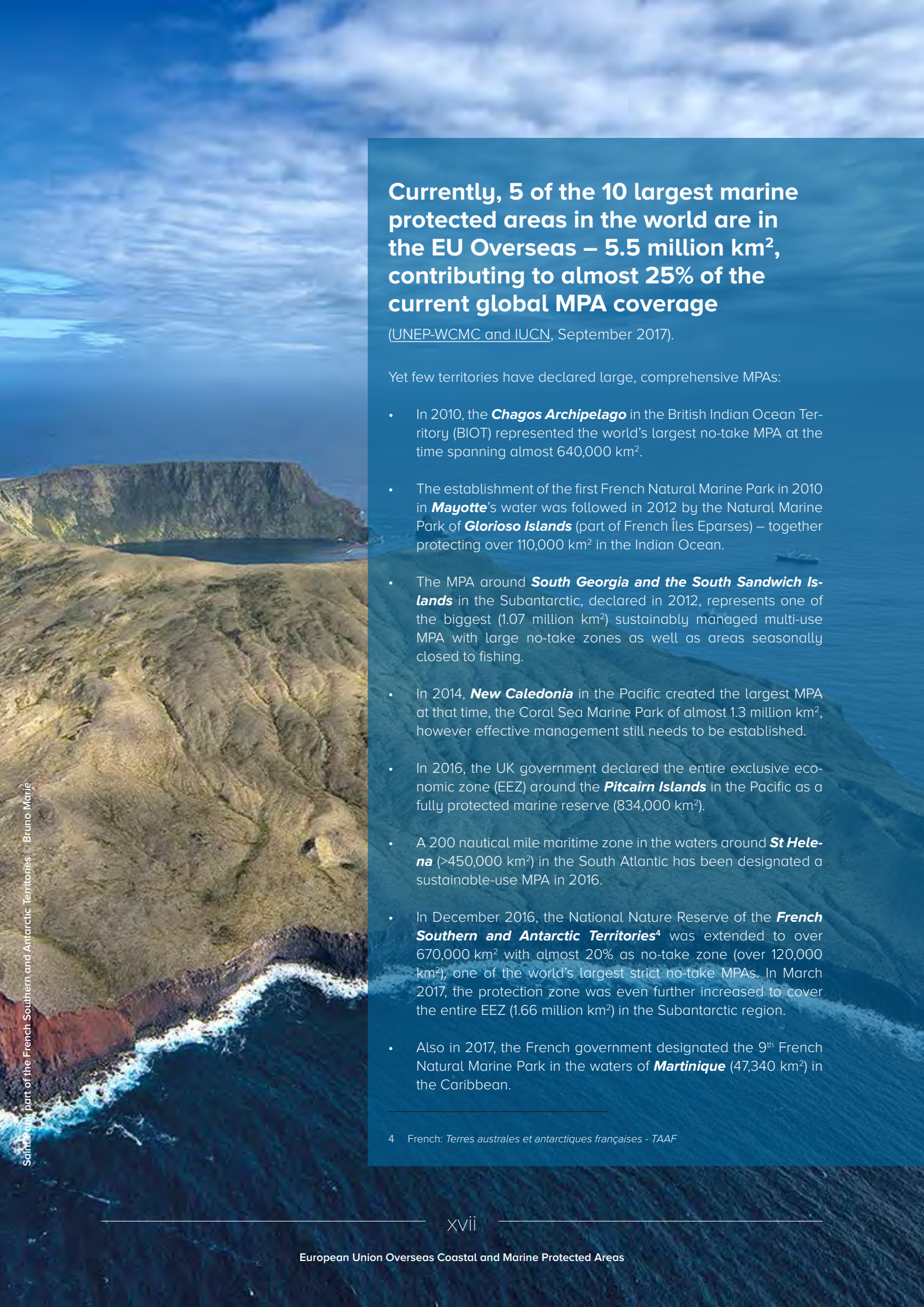
5
Hope Spots

Globally 85 special places that are critical to the health of the ocean, recognized by Mission Blue

2 Biodiversity hotspots for conservation priorities are biogeographic regions with significant levels of endemic biodiversity threatened by exceptional habitat loss. The EU Overseas 4 biodiversity hotspots out of currently 36 described biodiversity hotpots (25 originally described (Myers et. al, 2000)

3 CBD - Convention on Biological Diversity

Penguins in the Antarctic © Bruno Marie



Saint-Paul, part of the French Southern and Antarctic Territories © Bruno Marie

Currently, 5 of the 10 largest marine protected areas in the world are in the EU Overseas – 5.5 million km², contributing to almost 25% of the current global MPA coverage

(UNEP-WCMC and IUCN, September 2017).

Yet few territories have declared large, comprehensive MPAs:

- In 2010, the ***Chagos Archipelago*** in the British Indian Ocean Territory (BIOT) represented the world's largest no-take MPA at the time spanning almost 640,000 km².
- The establishment of the first French Natural Marine Park in 2010 in ***Mayotte***'s water was followed in 2012 by the Natural Marine Park of ***Glorioso Islands*** (part of French Îles Eparses) – together protecting over 110,000 km² in the Indian Ocean.
- The MPA around ***South Georgia and the South Sandwich Islands*** in the Subantarctic, declared in 2012, represents one of the biggest (1.07 million km²) sustainably managed multi-use MPA with large no-take zones as well as areas seasonally closed to fishing.
- In 2014, ***New Caledonia*** in the Pacific created the largest MPA at that time, the Coral Sea Marine Park of almost 1.3 million km², however effective management still needs to be established.
- In 2016, the UK government declared the entire exclusive economic zone (EEZ) around the ***Pitcairn Islands*** in the Pacific as a fully protected marine reserve (834,000 km²).
- A 200 nautical mile maritime zone in the waters around ***St Helena*** (>450,000 km²) in the South Atlantic has been designated a sustainable-use MPA in 2016.
- In December 2016, the National Nature Reserve of the ***French Southern and Antarctic Territories***[4] was extended to over 670,000 km² with almost 20% as no-take zone (over 120,000 km²), one of the world's largest strict no-take MPAs. In March 2017, the protection zone was even further increased to cover the entire EEZ (1.66 million km²) in the Subantarctic region.
- Also in 2017, the French government designated the 9th French Natural Marine Park in the waters of ***Martinique*** (47,340 km²) in the Caribbean.

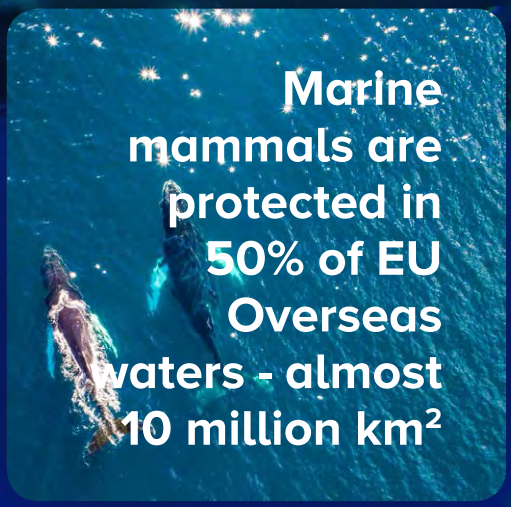
4 French: *Terres australes et antarctiques françaises - TAAF*

Other notable commitments on ocean and marine wildlife protection include:

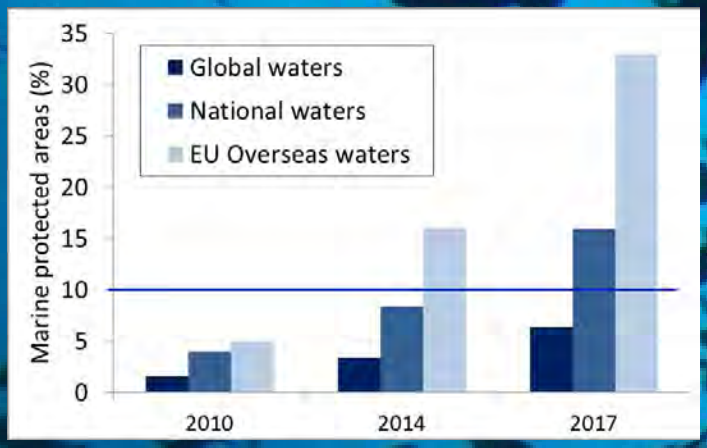
- The UK's announcement in 2016 to designate large MPAs in the South Atlantic waters as part of its intention to establish a "Blue Belt" of MPAs around its overseas waters: Following the declaration of St Helena's MPA (2016), the waters surrounding Ascension Island and Tristan da Cunha will be protected in 2019 and 2020, respectively. The former will cover an area almost as large as the land size of the UK, half of which will be closed off as a no-take zone.

- French Polynesia's voluntary commitment in 2017 towards designating its entire - almost 5 million km² - EEZ as a Marine Managed Area (MMA), including traditional community based resource management and educational marine managed areas (EMMA).

- The establishment of 3 large marine sanctuaries in the British, French and Dutch waters of the Caribbean, protecting large ecological migration corridors beyond borders over a total area of almost 250,000 km², more than a third of EU Overseas waters in the Caribbean. The EU Overseas also host half of the world's shark sanctuaries: French Polynesia (2012), New Caledonia (2013), British Virgin Islands (2014), Bonaire and Saba (2015), Cayman and St Maarten (2016); with Curaçao committed to follow suit.



Humpback whale with calf in the Caribbean Agoa marine mammal sanctuary © Laurent Bouveret, OMMAG



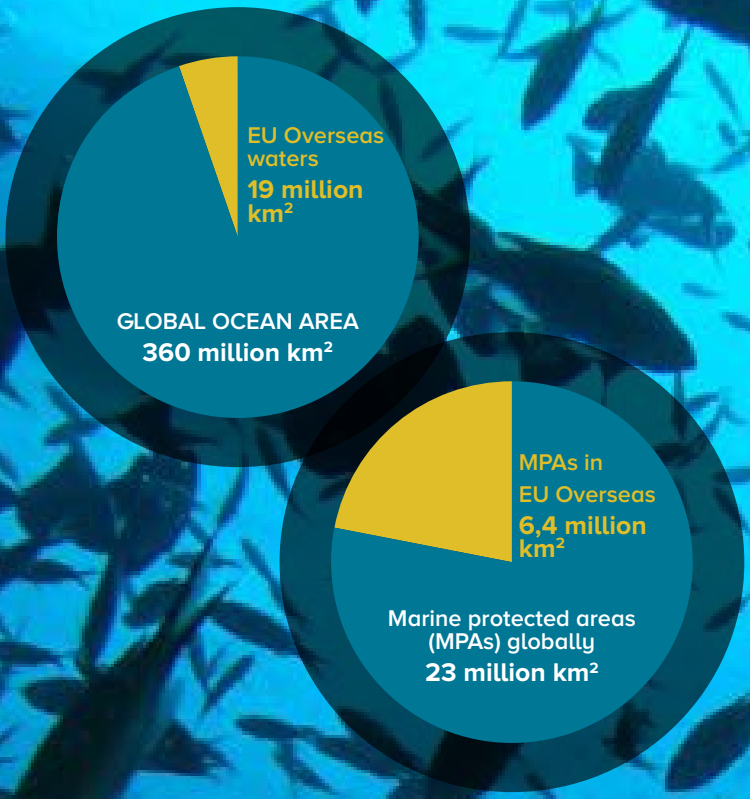


Figure 2: Increase of marine protected areas globally, in national waters worldwide and the EU Overseas since 2010. (Data sources: IUCN 2017, UNEP-WCMC)

With a total of over **6.4 million km² or almost 33% of EU Overseas waters under protection** - an area almost twice as big as the combined terrestrial and marine cover of their six Member States - EU Overseas MPAs contribute over a quarter to the 23 million km² (6.4%) of ocean globally protected today[5] (UNEP-WCMC and IUCN, September 2017), while covering little more than 5% of the world's marine realm. Considering that only 15.9% of coastal and marine areas under national jurisdiction worldwide and 16.9% of waters surrounding the 6 EU Member States with EU Overseas entities are currently protected (UNEP-WCMC and IUCN, September 2017), the European Overseas are clearly leading the way.

A large proportion of these marine conservation efforts are recent and were put in place after 2010, when the figure stood at little more than 5%. Between 2014 and 2017 the European Overseas MPA coverage doubled and during the past 12 months 6.6 million km² were added globally (UNEP-WCMC and IUCN, September 2017), almost half (3 million km²) coming from recent EU Overseas designations: The French Overseas waters increased their protection coverage 8-fold from 4% to 33% since 2014, adding more than 1.7 million km² in 2017 alone[6], and over half of the UK Overseas waters are now protected, largely as a result of designating two large EEZ-wide MPAs in September 2016, covering more than 1.2 million km². Following recent protection plan announcements the area under protection could reach over 60% by 2020 (12.2 million km²) – even further surpassing Aichi Target 11 and Sustainable Development Goal 14 (SDG 14) of protecting at least 10% of coastal and marine areas by 2020.

As of August 2017, only **9 European Overseas entities have protected 10% or more of their marine area under national jurisdiction** by establishing vast MPAs within their waters: the Pitcairn Islands (almost 100%), the British Indian Ocean Territories (almost 100%), Martinique (100%), the French Southern and Antarctic Territories (100%)[5], Mayotte (99%), New Caledonia (94.3%), South Georgia and the South Sandwich Islands (87%), Saba (28%), as well as St Helena, Ascension and Tristan da Cunha (28%) through a number of offshore MPAs. Including not only territorial waters but extending protection to the EEZ, these **9 EU Overseas entities contribute to 95% of the EU Overseas MPA coverage**. The protection status of these MPAs ranges from strictly no-take to multiple-use MPA with varying degrees of management and enforcement.

5 The Ross Sea Region High Seas MPA in ABNJ (2.1 million km²) will be enforced in December 2017 and was not accounted for in this global coverage.

6 Taking the extended protection zone of the Southern French Territories into account.

Fish aggregations in Ascension Island © Dan Laffoley

6.4 million km²
coastal and marine protected areas (MPAs)

33% of EU Overseas waters
contributing to almost 30% of global ocean protection (Aug.2017)

366 MPAs
including 39 coastal Ramsar Wetland sites, 14 Man and Biosphere Reserves & 4 World Heritage Sites

6x increase
of MPA coverage since 2010

Most of the existing European Overseas MPAs are located in coastal waters (within a 3 nautical miles zone from the shoreline), while deep sea and pelagic ecosystems still remain little represented. With basic data on marine habitat coverage not yet available for most ORs and OCTs, collection of scientific data as well as representativeness and connectivity of protected marine ecosystems need improvement in order to support the effectiveness and resilience of existing MPAs and MPA networks.

A qualitative assessment of current MPAs with respect to their effectiveness to improve the resilience of marine ecosystems outlined that **large MPAs, covering both coastal and offshore areas, are the most effective, provided they are well managed**. Most other MPAs show low to medium resilience. In many cases, the efforts across EU Overseas ORs and OCTs to effectively manage MPAs and reduce the adverse impacts of anthropogenic threats, significantly improved the resilience, even if the ecological criteria qualifying for a resilient MPA were not satisfactory. EU Overseas MPAs score relatively low in terms of connectivity between ecosystems. While many EU ORs and OCTs designated several MPAs, most were not designed within the framework of an ecological MPA network.

Historically, marine protected areas (MPAs) have been established on an individual and *ad hoc* basis. International organisations and multilateral environment agreements such as the Convention on Biological Diversity (CBD) recognize and recommend since 2010 to establish *"ecologically representative and well-connected systems of protected areas, integrated into the wider landscape and seascape"* (Aichi Target 11) and IUCN encourages *"to designate and implement at least 30% of each marine habitat in a network of highly protected MPAs and other effective area-based conservation measures"* (Resolution 50, World Conservation Congress 2016).

Sharks and rays, French Polynesia © Lauric Thiault

Melting icebergs and floating ice sheets in the Antarctic © Bruno Marie

To date, there are **only 3 operating ecological MPA networks across European ORs and OCTs**: (1) the British Virgin Island MPA System, a network at national level, (2) OSPAR, a regional network encompassing the North-eastern Atlantic region including Saint Pierre et Miquelon, Greenland and the Azores, and (3) Natura2000, a Europe-wide network of terrestrial and marine areas, which includes the Macaronesian region.

Taking into account the diversity of marine ecosystems of the 34 European Overseas, **management as well as design of individual MPAs and existing MPA "networks" need to be reassessed and further improved,** not only for ecological reasons, but also to support sustainable development and economic resilience of the EU Overseas ORs and OCTs. Healthy marine ecosystems are more than assets - they are fundamental for the local and regional economy, particularly for fisheries and the tourism sector. However, key to achieving tangible marine conservation results is effective and sustainable management of these valuable coastal and marine ecosystems and the services they provide.

Climate change and ocean acidification impacts have not yet been soundly mainstreamed into marine conservation activities and planning efforts in the EU ORs and OCTs. So far, only the marine protected area plans of the British Virgin and Cayman Islands include comprehensive climate change adaptation strategies. The work done within the framework for a regional pan-arctic network of MPAs shows the importance of marine conservation efforts in supporting resilience of marine and coastal ecosystem to climate change and underscores the necessity to include this resilience aspect of marine protected areas in future climate change adaptation strategies.

There is also a global **lack of awareness and knowledge about marine invasive species** across all ORs and OCTs. The only exception is the Caribbean region, where a significant loss of biodiversity and fish stocks due to the effects of lionfish invasion on the reefs has spurred various lionfish eradication programs.

International marine conservation objectives were set under the Convention on Biological Diversity (CBD) in 1993, the Programme of Work on Protected Areas (PoWPA) adopted in 2004 and the Aichi targets adopted in 2010. Many activities are being implemented across ORs and OCTs to work towards protecting far beyond 10% of marine areas. **In addition, while national commitments are ongoing, very little progress is observed in waters beyond national jurisdiction**.

The relatively recent decisions to create more MPAs in the ORs and OCTs highlights the critical importance of their marine dimension, both from an ecological point of view for their very diverse and unique marine ecosystems, and from a political point of view as the international and European targets cannot be fully achieved without a greater attention to and support of the marine conservation activities in the EU Overseas ORs and OCTs. However, the political relevance of these huge EU Overseas marine domains needs to be better acknowledged. The waters of the European Union, the Member States and the EU Overseas, represent not only the largest marine domain of the world but also the only one anchored in every ocean of the blue planet! **Governing over 5% of the global ocean surface the EU Overseas are key players for global ocean governance.**

This review presents the first overview of MPAs in all European ORs and OCTs, including geographic coverage (chapter 1), management and governance (chapter 2), MPA networks and representativeness (chapter 3), climate change and resilience (chapter 4), invasive alien species (chapter 5), as well as progress towards the achievement of international conservation objectives (chapter 6) such as those of the CBD Aichi Targets[7] and SDG 14 (sub-target 5). The review also summarizes current initiatives on baseline mapping of marine habitats, invasive species and climate change in order to deepen the analysis on the effectiveness of the marine conservation efforts.

Following an assessment on marine protected areas in Europe's seas by the European Environment Agency (EEA)[8], this report provides valuable information for completing national, European and international efforts to better assess progress in terms of marine conservation and achievements of the international targets. This report should also support preparing the sixth national reports to the CBD, which shall review the final progress in the implementation of the Strategic Plan for Biodiversity 2011-2020 and towards achieving the Aichi Biodiversity Targets[9] as well as feed into a post-2020 strategy. Dedicated to the EU Overseas MPAs, this is the first review to offer a comprehensive picture of the EU Overseas marine conservation efforts in the 7 oceanic regions of the world in which the ORs and OCTs are located.

7 Aichi Targets 10, 11 and 15 are relevant to the establishment of MPAs and the conservation of coastal and marine resources: http://www.cbd.int/sp/targets/

8 EEA, Marine protected areas in Europe's seas - An overview and perspectives for the future, n°3/2015,35pp.

9 CBD/COP/DEC/XIII/27

Fishermen in French Polynesia © Lauric Thiault

Collecting coral reef data, Caribbean © Erik Meesters

Recommendations[10]:

Despite considerable progress on protecting the EU Overseas waters in recent years, further efforts are necessary for better, more effective marine conservation in the EU Overseas. In addition, the ORs and OCTs have to be given more attention in EU assessments and reporting as well as in the post 2020 discussions and the new programming documents in order to further support and improve critical marine conservation and marine spatial planning, as well as activities for blue sustainable growth in the EU Overseas. Actions are needed in the following areas:

Availability and use of data:

- Moving towards a more comprehensive and strategic approach of the EU marine dimension beyond the regional seas surrounding Europe as defined by the EEA, or the 8 Sea Basins identified by the EU Maritime Policy.
- Supporting more scientific cruises and accurate data collation.
- Developing a typology of marine and costal habitats in all the ORs and OCTs.
- Developing marine and coastal ecosystems mapping in conjunction with ecosystem services valuation.
- Incorporating the value of ecosystem services into decision-making and particularly planning.
- More thorough assessment on coastal development and activities in watersheds impacting key ecosystems are needed for better balancing the preservation and restoration of coastal and marine ecosystems with current and future development needs and climate change adaptation and mitigation.
- Developing vulnerability assessments of marine and coastal ecosystems.
- Strengthening and creating new research networks that enhance the role of ORs and OCTs as marine environment observatories for Europe.

10 For the full recommendations please see the chapter Conclusions and recommendations.

Fishermen in Maupiti, French Polynesia © Carole Martinez

Representativeness:

- Strengthening and improving the representativeness of the current MPAs by supporting gap analysis, marine spatial planning and designing MPA networks at the local and regional levels to achieve the CBD Aichi Targets, foster marine conservation efforts and increase resilience.
- Supporting regional seas cooperation beyond the existing European Seas and defining strategies for the 7 regions in which ORs and OCTs are located.

Connectivity and functionalities:

- Conducting further work on MPA connectivity and functionalities at national (EEZs) and regional scale to better assess and support the effectiveness of existing MPAs and their contribution to resilience of marine and coastal ecosystems.

Management effectiveness and enforcement:

- Allocating suitable human and technical means for ensuring effective management of MPAs.
- Strengthening regional cooperation in surveillance and patrolling efforts through use of remote surveillance tools (such as satellite tracking) at the regional level in order to support proper enforcement of marine conservation efforts and combatting illegal activities in EU Overseas waters.
- Giving special attention to marine conservation in post-2020 strategies recognising the strategic importance of the European ORs and OCTs.
- Supporting the implementation of existing European Blue Economy documents and ensuring a critical balance between marine conservation and innovation in investments in future documents in order to secure sustainable and equitable development in the ORs and OCTs beyond marine resource exploitation.

Regional cooperation:

- Developing and supporting regional cooperation on marine conservation, which is critical for the effectiveness of conservation efforts as well as for the resilience of marine ecosystems under threat and for migratory species.
- Increasing and supporting the participation of EU Overseas in twinning and peer-to-peer learning between managers of marine mammal and shark sanctuaries and MPA manager learning networks.
- Establishing or extending MPA manager learning networks that include all countries and territories of the regions and regional seas where the EU Overseas are located.
- Fostering transcontinental cooperation such as the Transatlantic MPA Network (TAMPAN) to build coherent and representative MPA networks in all oceans.
- Defining and adopting EU regional marine strategies for all regional seas where the EU Overseas are located and supporting better participation of EU Overseas in regional organisations, regional seas conventions and fora.

Climate change:

- Establishing a common platform that allows experience sharing to foster new EU programs, further integration of ecosystem based adaptation and mitigation in programming for future funding and highlighting the importance of climate change issues in the EU Overseas.
- Modelling and developing scenarios with tangible translation to ORs and OCTs and regional levels in order to provide critical insights for marine conservation in a changing ocean.
- Developing a Blue Carbon component in ORs and OCTs climate and MPA strategies.

Monitoring in Greenland © Elmer Topp-Jorgensen

Resilience:

Carrying out MPA effectiveness surveys with recommendation to improve resilience to support medium to long-term conservation planning.

Increasing activities to restore coastal and marine ecosystems, as they provide essential services and are key for climate change adaptation and mitigation.

Invasive Alien Species:

Implementing field surveys on marine invasive alien species (IAS) to provide tangible data on the status of marine species invasion across EU ORs and OCTs and effectively raise awareness on this threat.

Developing dedicated global and regional databases for marine IAS to support such surveys and sharing of knowledge.

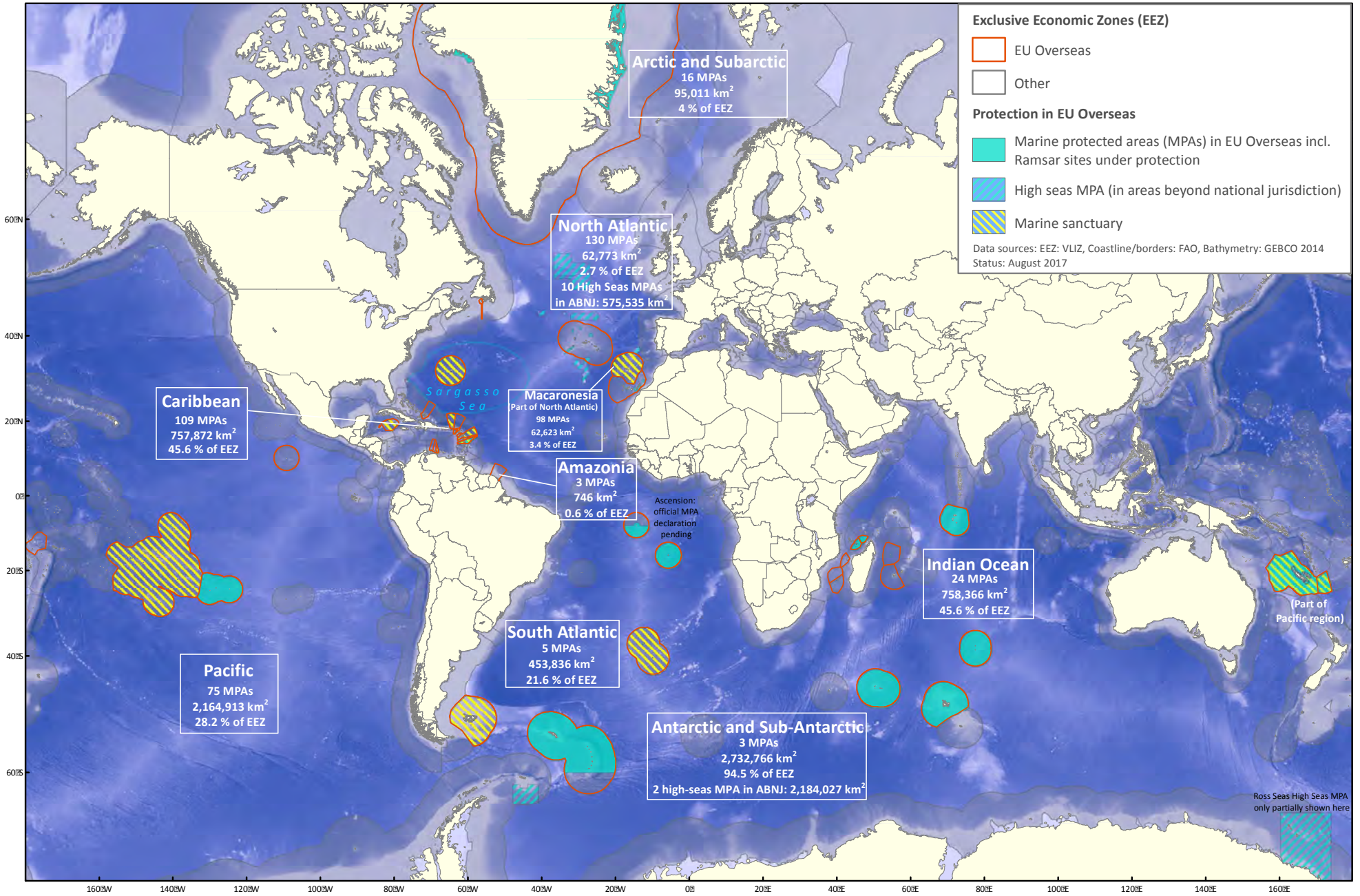
High-Seas:

Fostering stronger regional cooperation and revisions of some existing regional frameworks to support process scale-up as their current legal geographical scope does not encompass High Seas

Supporting greater involvement of the EU Overseas in high-seas international discussions.

Turtle in Mangroves, Europa, Scattered Islands © Bruno Marie

Marine and coastal conservation efforts in the EU Overseas marine regions



Map 1: Global map of EU Overseas marine and coastal conservation efforts (Source: IUCN, 2017)

Disclaimer: The designation of geographical entities in this document and the presentation of the materials do neither imply the expression of any opinion whatsoever on the part of IUCN concerning the legal status of any country, territory, or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

INTRODUCTION

"For the European Union and many nations around the world, the oceans hold a key to the future. … How we deal with the oceans is crucial. Some of the most pressing global challenges – including climate change, poverty, safe, nutritious and sufficient food for a population projected to reach nine billion by 2050 – can be addressed effectively only if the oceans are safe, secure, clean and sustainably managed. … The UN 2030 Agenda for Sustainable Development identified conservation and sustainable use of oceans as one of the 17 Sustainable Development Goals (SDG 14) and as part of a highly inter-connected agenda. For the first time, the conservation and sustainable use of the oceans are addressed with the world's other most pressing sustainability challenges in an overarching global policy agenda, and reflected as such across several SDGs and targets. The global community must now turn these commitments into action. The EU is fully committed to this goal and its implementation. …"[1]

Healthy coastal and marine ecosystems - assets and critical conditions for sustainable development

The Millennium Ecosystem Assessment (2005) and Census of Marine Life (2011) identified degradation of marine living resources as a critical issue. Marine conservation is key for supporting the United Nation's 2030 Agenda for Sustainable Development. Acknowledged as a successful tool for sustainable use and conservation of marine biological diversity and ecosystems, the establishment of marine protected areas (MPAs) has accelerated during the last decade following international and European recommendations that prompted the need for an ocean management framework to achieve both biodiversity and sustainable use objectives. MPAs are a key tool within maritime spatial planning (MSP) and relevant frameworks (McLeod *et al.* 2005). The Convention on Biological Diversity (CBD) also identified MPAs as an important tool for achieving conservation and sustainable use of the sea and included a Marine and Coastal Protected Area element in its Programme of Work on Marine and Coastal Biodiversity.

Sandy coastal areas in the British Virgin Islands, Caribbean © Stewart McPherson

Several of the 17 Sustainable Development Goals (SDGs) of the United Nation's 2030 Agenda for Sustainable Development, adopted in 2015, are linked to the oceans and coasts[2]. In addition, SDG 14 is dedicated to "*Life below water*" and describes targets aiming to conserve and sustainably use the world's oceans,

1 Joint communication by the High Representative of the EU for Foreign Affairs and Security Policy and the European Commission on 'International ocean governance: an agenda for the future of oceans', 10 November 2016, Brussels, 10.11.2016; JOIN (2016) 49 final.

2 Oceans and coasts link to a number of SDGs, in addition to SDG14 (oceans), including poverty eradication (SDG 1), food security and sustainable agriculture (SDG 2), health (SDG 3), clean water and sanitation (SDG 6), modern energy (SDG 7), growth and employment (SDG 8), climate (SDG13), ecosystems and biodiversity (SDG 15) and partnerships (SDG 17).

Targets of Sustainable Development Goal 14 – Oceans:

- By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
- **By 2020, sustainably manage and protect marine and coastal ecosystems** to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans
- Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
- By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics
- **By 2020, conserve at least 10 per cent of coastal and marine areas**, consistent with national and international law and based on the best available scientific information
- By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation
- By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism
- Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries
- Provide access for small-scale artisanal fishers to marine resources and markets
- **Enhance the conservation** and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want

seas and marine resources. Notably three of the 10 SDG14 targets refer to conservation of marine ecosystems (see box above).

The EU Joint Communication on *'International ocean governance: an agenda for the future of oceans'* highlights how pressing sustainable development and biodiversity conservation are interlinked and how the oceans key for addressing them[3].

Late afternoon fishing, Terceira Island, Azores © Carole Martinez

This **strong interdependency between healthy coastal and marine ecosystems and sustainable development** is exacerbated in the EU Outermost Regions (ORs) and Overseas Countries and Territories (OCTs), most of which are islands with economic activities and development that highly depend on their unique coastal and vast marine ecosystems and valuable ecological services. Mangroves, sea grass beds and coral reefs provide natural waste and water quality regulation and protection systems to buffer the impacts of both climate change and variability. More and more studies are now pointing out the protective function and ecological services of coral reefs and mangroves. Incoming waves break and expend their energy on the reef, thereby sheltering the adjacent coastline. In many respects, reefs as well as mangroves are natural breakwaters, which can absorb up to 90% of the energy of wind-generated waves and thus protect coastal areas from damage (UNEP-WCMC, 2006).

3 Ibid. Joint communication (2016)

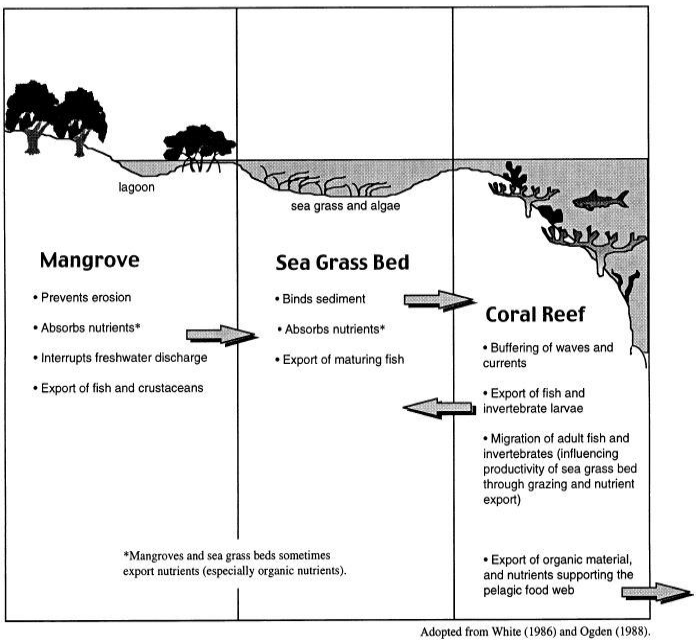


Figure 3: Interaction of marine and littoral ecosystem services through mangroves, sea grass beds and coral reefs. Source: Moberg and Folke, 1999

Recent analysis of **ecosystem services** in New Caledonia revealed that the contribution of coral reefs to coastal protection are the most valuable, providing services worth up to 220 million Euros annually, which represents 2/3 of all ecological services in New Caledonia (Pascal, 2010). Coastal protection by coral reefs has been estimated at 74 million Euros per year in Martinique (Failler, 2010; Pascal, 2010) and 11 million Euros per year in Mayotte (Pascal, 2014), while blue tourism generates annually up to 67 million Euros in Martinique (Failler, 2010; Pascal, 2010) and 62 million Euros in Guadeloupe[4]. Coastal ecosystems are as well critical for local and regional economies. Valuations of ecological services in the EU Overseas underline this fundamental relationship and thus the critical importance to preserve healthy coastal and marine ecosystems.

Service efficiency depends on ecosystem quality. Weighting calculations of coastal protection services in Martinique and Mayotte show very clearly (1) a linear relationship between coral reef health and wave attenuation effectiveness, (2) the outer barrier absorbs up to 91% of wave energy, (3) a dead reef reduces this effect to 10%, and (4) the width of the reef flat influences the attenuation of the remaining energy (Maréchal, JP *et al. in prep., presented at Esmeralda Workshop, Azores, 2017*). Such weighted ecosystem service calculation can result in largely varying monetary valuations and demonstrate not only the importance of healthy ecosystems but also the need to invest in effective marine conservation actions to restore ecosystems and prevent (further) degradation in order to benefit maximally from their services. In this regard, Red list of Ecosystem analysis such as the one conducted on Mayotte's mangroves provide valuable information on conservation priorities[5].

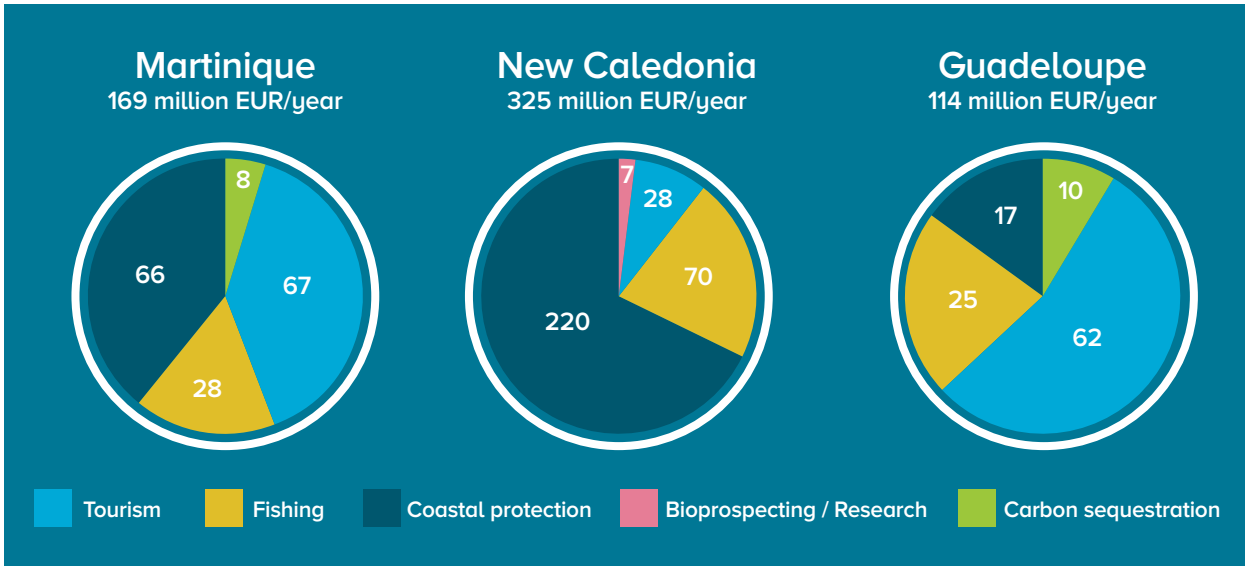


Figure 4: Economic importance of coral reefs and other coastal marine ecosystems for 3 French Overseas entities shown as their annual value in million Euros (Data source: IFRECOR, 2015; design: Imre Sebestyén jr. / Unit Graphics)

4 Data taken from IFRECOR brochures based on detailed country studies undertaken by IFRECOR

5 UICN France, 2017. La Liste rouge des écosystèmes en France - Chapitre Mangroves de Mayotte, Paris, France, 72p.

According to a 2015 analysis on the ocean's economic value, the ocean is the world's 7th largest economy and its key "assets" estimated to amount to at least US$24 trillion (WWF, 2015a). With over two-thirds of these key ocean "assets" relying on healthy ocean conditions, protecting the ocean makes economic sense: According to the Living Blue Planet Report, increasing protection coverage to 30% of marine and coastal areas could generate up to US$920 billion and 150,000-180,000 full-time jobs in MPA management between 2015 and 2050 (WWF, 2015b).

Seagrass beds provide nurseries for sea life © Fernando Espino

Healthy coastal and marine ecosystems also contribute to food security of the nearly 3 billion people, who consume fish as a major source of animal protein. Worldwide 10-12% of the population relies on fishing and aquaculture for their livelihood (FAO, HLPE, 2014). However, with up to 93 million tons of fish annually caught in the ocean, over 50% of fisheries are fished at full capacity an 30% are already overexploited, depleted or recovering and fish stocks worldwide are evermore plummeting (IUCN, 2017a). To reduce the resulting negative ecological but also economic and societal impacts, the benefits of no-take zones (NTZs) and marine reserves to species abundance and diversity in adjacent waters have been widely discussed (NOAA MPA Science Briefs 2012), in particular with regards to fisheries benefits (Kerwath et al., 2013). Improved abundance and yield depend however on the degree of overfishing inside the reserve before its establishment and these benefits only materialize if the fisheries outside the reserves are well managed too. It is important to note that there is still very little data available on social and economic costs as well as benefits of areas surrounding reserves. Immediate and opportunity costs of lost food security and livelihoods are substantial in deeply populated areas with high degree of dependence on fishery resources (Hilborn et al., 2004; Garcia et al., 2013). IUCN's categories of protected areas and the range of MPAs with a combination of protection levels can provide valuable area-based management tools; particularly in areas where excluding all activities is not a socio-economically or politically viable option (Sciberras et al., 2015). Moreover, sustainable fisheries can play an important role in achieving international conservation targets (e.g. Aichi Target 6 and SDG 14) and models demonstrated that a modest catch reductions of 10% could halve the pressure on marine ecosystems while also contributing to the long-term profitability and sustainability of fishing (Worm, et al. 2009).

In areas open to fishing, the **Regional Fisheries Bodies (RFBs)** along with international fishery arrangements play an important role *"in promoting long-term sustainable fisheries where international cooperation is required in conservation and management"* and allow States or organizations working together towards fisheries' conservation, management and/or development. Mandates and functions of RFBs differ: While some RFB have an advisory role with non-binding decision-making, Regional Fisheries Management Organizations (RFMO) can adopt binding fisheries conservation and management measures. There are also "regional fisheries agreements", which however do not operate under a governing body of member States. When applicable, regional fisheries bodies and agreements are mentioned in the sections on regional agreements in Chapter 1. However, there are other regional and national agreements not included in this report.

Local fisherman, French Polynesia © Magalie Verducci

A recent IUCN publication highlighted the potential fruitful relationship between MPA and aquaculture, if well managed. It pointed out that aquaculture can have a positive effect on biodiversity, fisheries, food security and coastal ecosystem services and be compatible with MPA targets, when well designed (IUCN, 2017a).

Figure 5: Map of the Regional Fishery Bodies (RFBs) worldwide part to an international fishery arrangement, defined by the FAO Fisheries and Aquaculture Department. Source: FAO Fisheries and Aquaculture Department.

However such valuable ecosystem services can only be provided with healthy status of conservation. The provision of these services is declining or even stopped with degradation and destruction of coastal and marine ecosystems, and islands are particularly affected.

Island ecosystems, along with their biological richness are also among the most vulnerable to human impacts. Across EU's ORs and OCTs, the main threats to coastal biodiversity are linked to coastal development leading to habitat destruction, land run-off including eutrophication and sedimentation processes in coastal waters as well as over-exploitation of both coastal and pelagic resources. In addition, invasive alien species and climate change are emerging as major environmental pressures. Climate change is reinforcing the risk of current threats to marine biota and ecosystems, thus, exacerbating their implications for the livelihoods of local people (Doney *et al.* 2012; Mora *et al.* 2013). For instance, there is evidence of increased sedimentation from higher rainfall, habitat destruction from increased wave action, salt-water intrusion associated with sea-level rise, and coral mortality from increased water temperatures. Moreover, increasing atmospheric carbon dioxide concentration, which is leading to ocean acidification, emerges as a threat with alarming impacts on marine and coastal ecosystems dominated by calcified organisms (Hofmann *et al.* 2010).

Clams, French Polynesia © Magali Verducci

EU Overseas - unique shelters of global marine biodiversity

Marine ecosystems of the 9 European Outermost Regions (ORs) and 25 Overseas Countries and Territories (OCTs) host an exceptional biodiversity in coastal, shelf, deep-sea and pelagic areas of temperate, tropical and polar regions with an extreme diversity of habitats and species. The EU Overseas are home to a large portion of the most diverse coral reef systems and over 20% of the planet's atolls[6] .

6 French Polynesia alone has 20% of the world's atolls and some of the most diverse coral reef formations (Petit & Prudent, 2008).

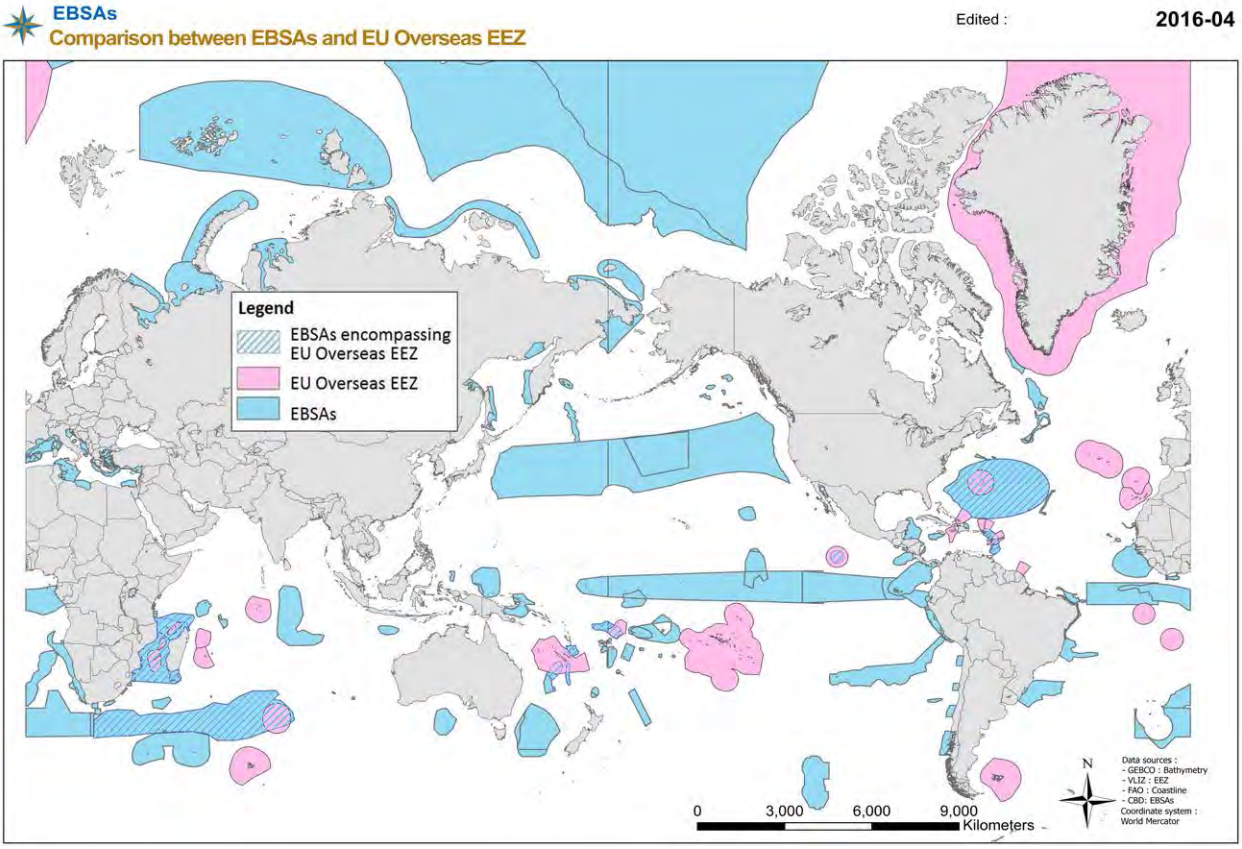


Figure 6: Ecologically and biologically significant marine areas (EBSAs) within EU Overseas. Source: AAMP (now AFB)

In addition to representing an incredibly enriching asset to humanity, this huge marine biodiversity contributes significantly to the livelihoods of over 5 million people in these territories as well as to local and regional economies through activities like small-scale and industrial fisheries, ecotourism, (Scuba) diving, and whale-watching. Coastal ecosystems provide highly valuable protection services against erosion and together with pelagic ecosystems represent important blue carbon sinks. Marine biodiversity also plays a fundamental role in local and traditional cultures.

Sargasso Sea © Philippe Rouja

Recognizing the need for effective policy action to increase protection of marine ecosystems, the 9th meeting of the Conference of the Parties to the CBD adopted a list of 7 criteria for the identification of **ecologically and biologically significant marine areas (EBSAs)**, which should provide sound scientific justification for enhanced conservation and management measures. States and competent intergovernmental organisations are responsible for the identification of EBSAs according to international law, including UNCLOS. Regional workshops were organized to provide guidance and adopt the EBSA de-

CBD scientific criteria for identifying EBSAs (ecologically or biologically significant marine areas):

Ecologically or Biologically Significant Marine Areas
Special places in the world's oceans

1. Uniqueness or rarity
2. Special importance for life history stages of species
3. Importance for threatened, endangered or declining species and/or habitats
4. Vulnerability, fragility, sensitivity, or slow recovery
5. Biological productivity
6. Biological diversity
7. Naturalness

19 EBSAs with relevance to the EU Overseas in 6 of the 9 EBSA regions: 14 EBSAs include EU Overseas areas and 5 EBSAs are in areas beyond national jurisdiction (ABNJ) surrounding EU Overseas

Western South Pacific

- New Hebrides Trench Region (Small portion in Eastern waters of New Caledonia)
- South of Tuvalu/Wallis and Fortuna/North of Fiji Plateau (Wallis & Futuna)
- Northern Lord Howe Ridge Petrel Foraging Area (partially in EEZ of New Caledonia)
- Seamounts of West Norfolk Ridge (in ABNJ south of New Caledonia)

Eastern Tropical and Temperate Pacific

- Clipperton Atoll (Clipperton)
- Clipperton Fracture Zone Petrel Foraging Area (in ABNJ Clipperton)

Wider Caribbean and Western Mid-Atlantic

- Amazonian-Orinoco Influence Zone (French Guiana)
- Eastern Caribbean (Anguilla, Guadeloupe, Martinique, Saba)
- Saba Bank (Saba)
- The Sargasso Sea (Bermuda)

Southern Indian Ocean

- Tromelin Island (Scattered Islands)
- The Iles Éparses (part of the Mozambique Channel) (Scattered Islands)
- The Northern Mozambique Channel (Scattered Islands, Mayotte)
- The Mozambique Channel (Scattered Islands, Mayotte)
- Prince Edward Islands, Del Cano Rise and Crozet Islands (Crozet Islands, French Southern and Antarctic Territory)
- Agulhas Front (St Paul & Amsterdam Islands, French Southern and Antarctic Territory)

Arctic

- Multi-year Ice of the Central Arctic Ocean (in ABNJ north of Greenland)
- The Marginal Ice Zone and the Seasonal Ice-Cover Over the Deep Arctic Ocean (in ABNJ north of Greenland)

South Eastern Atlantic

- Subtropical Convergence Zone (STCZ) (in ABNJ surrounding Tristan da Cunha)t

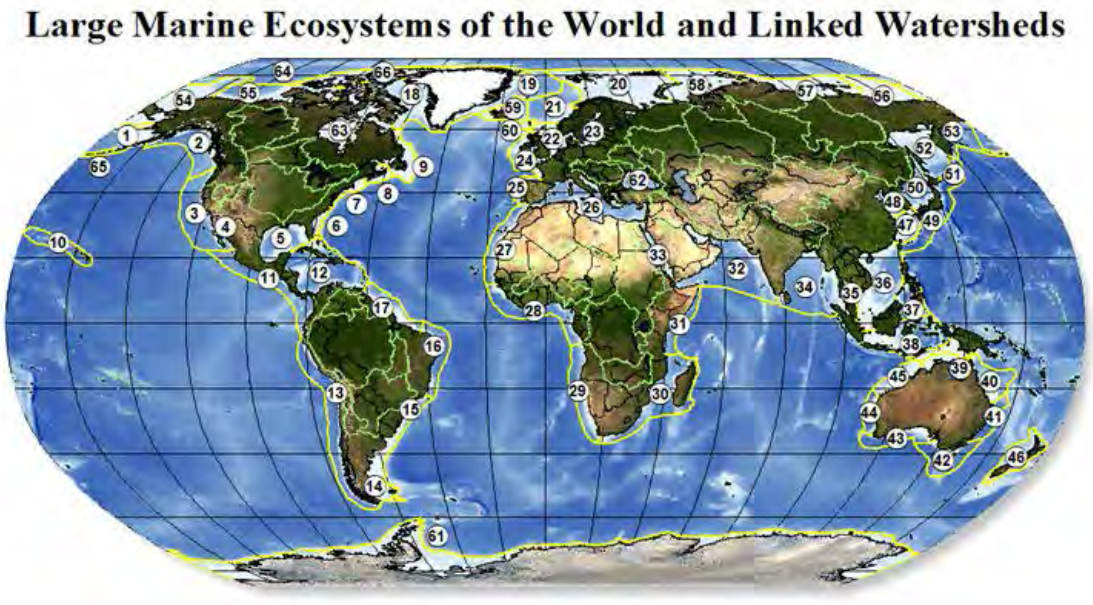


Figure 7: Map of Large Marine Ecosystems (LMEs) and Linked Watersheds. Source: NOAA

scriptions at regional level. Based on scientific and technical evaluation of information from the workshops, the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) prepared reports with details of areas that are meeting the scientific criteria. To date 9 regional workshops have been organized and criteria applied to open-ocean waters and deep-sea habitats in 9 regions[7].

As of early 2017, 19 EBSAs describe areas that either include EU Overseas territory or areas beyond national jurisdiction (ABNJ) surround or are directly adjacent to EU Overseas areas (see box on previous page).

Ten of the world's 66 **Large Marine Ecosystems (LMEs)**[8] include EU Overseas waters. EU Overseas are also part of UNEP's Regional Seas Programme[9] and Regional Fisheries agreements areas.

As part of the regional ecosystem profiling work, prepared under the European BEST Initiative[10], 7 EU knowledge hubs in consultation with regional and local stakeholders in the EU Overseas regions identified over 400 key biodiversity areas (KBAs) and ecological corridors[11] – places that include vital habitats for species and therefore require enhanced protection – covering a total area of almost 3.5 million km^2, over 70% (almost 2.5 million km^2) of which represent marine or coastal ecosystems. An estimated 70% of these 90 newly identified marine and coastal KBAs are currently protected.

EU Overseas - still under-acknowledged allies in marine conservation

The 2012 Commission Communication on '*The outermost regions of the European Union: towards a partnership for smart, sustainable and inclusive growth*', highlighted that the ORs' biodiversity "*offers potential in the areas of health, biomedicine and bio-pharmacy, cosmetics and many other sectors such as materials for eco-construction and wood*" but also that "*coastal protection is a particular concern for the ORs*". While indicating that "*ORs' resilience to climate change impacts has to be increased by supporting climate change adaptation in all relevant sectors, and promoting a greener, low-carbon economy*" it failed to refer to the great potential of ecosystem-based adaptation and mitigation, something that the new Commission Communication expected late 2017 should better take into account.

Penguin in the Antarctic © TAAF, photo by Nelly Gravier

However, despite their vast marine areas the EU Overseas entities are often insufficiently associated in the European political agenda and assessments: The EEA report on MPAs in Europe's seas (EEA, 2015) only takes the ORs of the Macaronesia region into account overlooking the 6 other regions where the EU Overseas are located. This is also reflected in a new map, adopted by EU Member States, depicting boundaries of the 17 marine regions and sub-regions across EU seas, so called ecoregions (see **Figure 8**)[12], which are based

7 EBSA criteria have been applied in 9 regions: Western South Pacific, Wider Caribbean & Western Mid-Atlantic, Southern Indian Ocean, Eastern Tropical & Temperate Pacific, North Pacific, South-Eastern Atlantic, Arctic, North-East Atlantic, Mediterranean (https://www.cbd.int/ebsa/)

8 66 Large Marine Ecosystems (LMEs) are located around the coastal margins of the Atlantic, Pacific and Indian Oceans. LMEs are natural regions of ocean space encompassing coastal waters from estuaries to the seaward boundary of continental shelves and the outer margins of coastal currents. They are relatively large regions of 200,000 km^2 or greater, the natural boundaries of which are based on four ecological criteria: bathymetry, hydrography, productivity, and trophically related populations.

9 To date 13 Regional Seas programmes have been established under the auspices of UNEP. They cover 18 regions of the world, making it one of the most globally comprehensive initiatives for the protection of marine and coastal environments: Black Sea, Wider Caribbean, East Asian Seas, Eastern Africa, South Asian Seas, ROPME Sea Area, Mediterranean, North-East Pacific, Northwest Pacific, Red Sea and Gulf of Aden, South-East Pacific, Pacific, and Western Africa. Six of these programmes, are directly administered by UNEP. http://www.unep.org/regionalseas/Issues/ecosystems/LMEs/default.asp

10 **BEST** - voluntary scheme for **B**iodiversity and **E**cosystem **S**ervices in **T**erritories of European overseas – aims to support the conservation of biodiversity and sustainable use of ecosystem services including ecosystem-based approaches to climate change adaptation and mitigation in the EU OCTs and ORs.

11 KBAs and ecological corridors in the BEST regional ecosystem profiles were identified using an internationally acknowledged methodology assessing criteria for species and critical habitat, including important areas for vulnerable life stages.

12 The International Council for the Exploration of the Sea (ICES) divides European waters in 17 ecoregions. The ecoregions map will support the enactment of EU marine legislation such as the Marine Strategy Framework Directive (MSFD) and the EU Maritime Spatial Planning (MSP) Directive.

Extract from the Message from La Réunion Island (2008):

"The vast marine and coastal areas of the ORs and OCTs provide the EU and its Member States with an array of remarkable and sometimes unique ecosystems, fisheries resources and emblematic species. They deserve to be part of a long-term strategic vision that integrates biogeographic aspects, requiring special attention in EU funding mechanisms and policies, in particular the Maritime Policy, in order to address the manifold anthropogenic stresses such as over-exploitation and pollution. Suitable monitoring of the marine environment on the basis of a coherent European-wide database is essential for the sustainable management of natural resources and the development of climate change adaptation strategies. The listing and protection of key marine sites, regionally mainstreamed Integrated Coastal Zone Management, fisheries stock assessments, as well as enhanced control and management of legal and illegal fishing activities are further critical elements"

Recommendations:

1. Define a long-term strategic vision that integrates biogeographic aspects, via key EU funding mechanisms and policies such as the OR Strategy, the OCT Association clause and the EU Maritime Policy, that reflects the great importance of the maritime areas in the ORs and OCTs and the ecosystem services they provide.

2. Establish and financially support an eco-regional approach to prioritize conservation actions (research and management) in the ORs and OCTs that will actively engage local communities, fishermen, and NGOs (e.g. by reinforcing the POSEI Fisheries Programme with another on Marine Biodiversity).

3. Design a specific instrument or tool to build, manage and protect a representative network of key coastal and marine sites in the ORs and OCTs, complementing the existing Marine Directive. Support the conservation work of local NGOs.

4. Fully incorporate Integrated Coastal Zone Management as a fundamental aspect of regional policy in island entities.

5. Establish a specific programme on the integrated management of coastal zones and marine areas for the ORs and OCTs, by creating a joint forum to share best practices, develop tools and pilot projects on integrated planning.

6. Increase resilience of marine ecosystems by addressing anthropogenic stresses that will reduce pollution, organic matter input, and extraction to limit effects of climate change.

7. Reach out more strongly to the wider public, in order to raise awareness about the importance of the ORs' and OCTs' marine areas. Communicate the values and challenges inherent to the conservation of overseas territories and small island states.

8. Raise awareness through education, training, and by working with NGOs.

9. Reinforce regional cooperation through development and regional policies. Promote the establishment of a governance mechanism that enhances the involvement of local civil society and the private sector; establish regional mechanisms for dialogue among different sectors and stakeholder groups to enhance the coherence of maritime and coastal development (e.g. tourism, aquaculture, shipping, fisheries, energy, etc.).

10. Ensure appropriate consideration in the Red Lists of emblematic marine species in the ORs and OCTs, recognizing that migratory marine species in particular are also present in other jurisdictions and will require the EU to work in a broader context.

11. Enhance coordination and coherence of the different EU budget lines at the political level, with clear definitions of objectives.

12. In view of the proliferation of different certification and eco-labelling schemes, foster greater intra-regional and inter-regional cooperation in order to negotiate and adopt a common approach.

Extract from the ***Message from Guadeloupe*** (2014):

Tackling Biodiversity loss – Operational actions:

Support the strengthening of the protected area systems in the ORs and OCTs with the aim of i) increasing their ecological representativeness, ii) networking at regional level, iii) fostering ecological connectivity and iv) improving their management effectiveness, taking into account prerogatives of managers, the competences of local governments, the role of civil society

Developing Green and Blue Economy – Strategic orientation:

Develop a vision and international support for the ORs and OCTs combined marine domain, of international importance, by promoting ecologically sustainable uses of the marine environment, fostering local governance and supporting spatial planning in the ORs and OCTs;

on biogeographic and oceanographic features and existing political, social, economic, and management divisions.

The EU Maritime Policy, defining the sea basin strategy, only describes the sea around Europe's ORs, not the OCTs. Likewise the 2016 European Commission's Joint Communication on international ocean governance mentions the importance of the 9 ORs[13] in global ocean governance but does not include them in its Action 11 related to the achievement of the Aichi Target 11 (see extract below), thus missing a great opportunity to promote and capitalise on existing efforts.

Regions (ORs) and Overseas Countries and Territories (OCTs), in matters related to oceans". However, it fails also to mention the ORs' and OCTs' marine conservation efforts when it calls upon the EU and EU Members States for leading by example for the achievement of the Aichi Target 11, overlooking the fact that some ORs and OCTs are already far beyond the 10% targets and collectively protect 33% of their waters[14]. As a consequence to a very mainland-centric vision of the EU marine dimension, observation and conservation efforts are limited to the seas surrounding Europe[15].

Recognizing and highlighting this shortcoming the

Action 11: Achieving the global target of conserving 10% of marine and coastal areas and promoting the effective management of MPAs (Joint Communication, 2016)

- *The Commission will contribute to the effectiveness and expansion of MPAs worldwide by promoting the exchange of best practices and by supporting the efforts towards coherent networks.*
- *The Commission will also encourage regional and international cooperation to develop long-term, sustainable financing mechanisms for MPAs.*
- *The Commission will complete a MPA twinning project facilitating the exchange of best practices among and capacity building in Atlantic MPAs from Europe, Africa, North and South America.*
- *The Commission will provide funding opportunities under Horizon 2020 and LIFE programmes for marine research essential for the establishment of marine protected areas and liaise with international partners.*

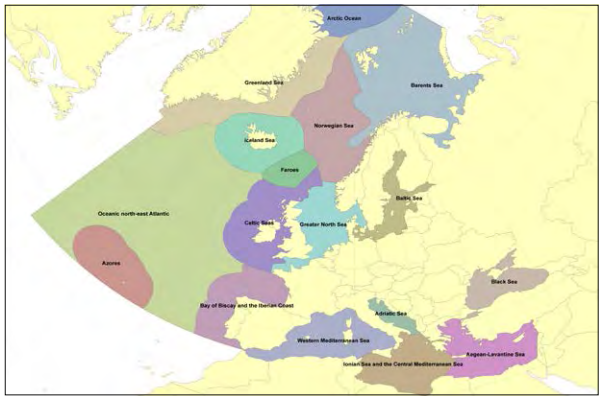


Figure 8: Map by EEA depicting boundaries of marine regions and subregions across EU seas only includes the Macaronesian region, not the more remote marine areas of the EU (Source: ICES).

The Conclusions of the EU Council on the joint communication is recalling "*the importance of the role, influence and specific characteristics of the Outermost*

Message from Reunion Island (2008) stressed the need to define a long-term strategic vision that integrates biogeographic aspects and to elaborate a dedicated tool, a need that was reinforced in the Message from Guadeloupe (2014) as part of its strategic priorities and actions (see extract below).

13 "*Moreover, the EU counts nine outermost regions. These regions, due to their contribution to the EU maritime dimension and to their position in the Atlantic and Indian oceans, are important actors that can actively contribute to improved ocean governance*"; Joint communication by the High Representative of the EU for Foreign Affairs and Security Policy and the European Commission on 'International ocean governance: an agenda for the future of oceans', 10 November 2016, Brussels, 10.11.2016; JOIN (2016) 49 final, P.5.

14 " *ACKNOWLEDGES that significant progress is needed to achieve the global target of conserving 10 % of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, integrated into the wider landscape and seascape. CALLS UPON the EU and its Member States to lead by example in stepping up their efforts to achieve this target swiftly and taking into consideration the principle of the best available scientific information and the precautionary principle*"; EU Council conclusions on "International ocean governance: an agenda for the future of our oceans", Brussels, 4 April 2017 (OR. en), 8029/17; BIODIVERSITY.25;

15 Despite its name, the European Global Ocean Observation System (EuroGOOS) has sub-set only 6 Regional Operational Oceanographic Systems (ROOS): in the Baltic, the Arctic, the Ireland-Biscay-Iberia region, the North-West Shelf region, the Mediterranean region and the Black sea.

EU Overseas - championing the international conservation objectives

Crozet archipelago, French Southern and Antarctic Territories © TAAF, photo by Nelly Gravier

According to the latest global update on the UNEP Protected Planet Report, 23 million km² or 6.35% of the global ocean were protected[16] (status: Sept 2017, UNEP-WCMC), an almost 4-fold increase from the 6 million km² in 2010 (UNEP-WCMC 2012). This growth can be primarily contributed to recent designations or extension of MPAs by a few countries, including the UK, France and Spain, who designated large MPAs in their Overseas entities in the last decade. However, globally MPAs in the High Seas (beyond 200 nm) remain poorly represented at 0.25% of the total areas beyond national jurisdiction (ABNJ). Given the low coverage of the High Seas, the United Nations General Assembly adopted a resolution in June 2015 to develop "an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity in areas beyond national jurisdiction"[17].

With a total of **over 6.4 million km² or almost 33% of EU Overseas waters under protection, EU Overseas already champion the international conservation objectives and go far beyond Aichi Target 11[18] and the Sustainable Development Goal 14 (SDG 14)[19] of protecting at least 10% coastal and marine areas by 2020**. A large proportion of this protection is however recent, put in place after 2010 (only little more than 5%). Between 2014 and 2017 the European Overseas MPA coverage doubled: protection of French EU Overseas waters increased from 4% in 2010 to 33% in April 2017 and the UK currently protects over half of its EU Overseas maritime domain. Following up on the recent announcements to create or extend existing MPAs this area could go up to nearly half of the European Overseas waters. Considering the international protection level of 15.9% (22.4 million km²) for coastal and marine areas under national jurisdiction protected (UNEP-WCMC, Update Sept 2017), the European Overseas clearly lead the way.

EU Overseas - uneven marine conservation efforts that need to be further supported

MPAs have been designated across most of the EU's ORs and OCTs. Historically, protected areas were established on an individual *ad hoc* basis rather than through a systematic, planned process or a comprehensive strategy. While an indicator measuring connectivity of terrestrial protected areas (PAs) was developed to quantify the percentage of a region covered by protected connected lands and the different categories between which species migrate (Saura *et al.*, 2017), a similar indicator for marine ecoregions is still outstanding.

Ouvea, New Caledonia © Maël Imirizaldu

16 The Ross Sea High Seas MPA in ABNJ (2.1 million km²) will be enforced in December 2017 and was not accounted for in this global coverage.

17 Resolution 69/292 of the UN General Assembly from 19 June 2015, available from http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/69/292

18 To achieve Aichi Target 11, adopted by the parties to the Convention on Biological Diversity (CBD) in 2010, at least 10% of coastal and marine areas ought to be conserved and effectively managed by 2020.

19 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information.

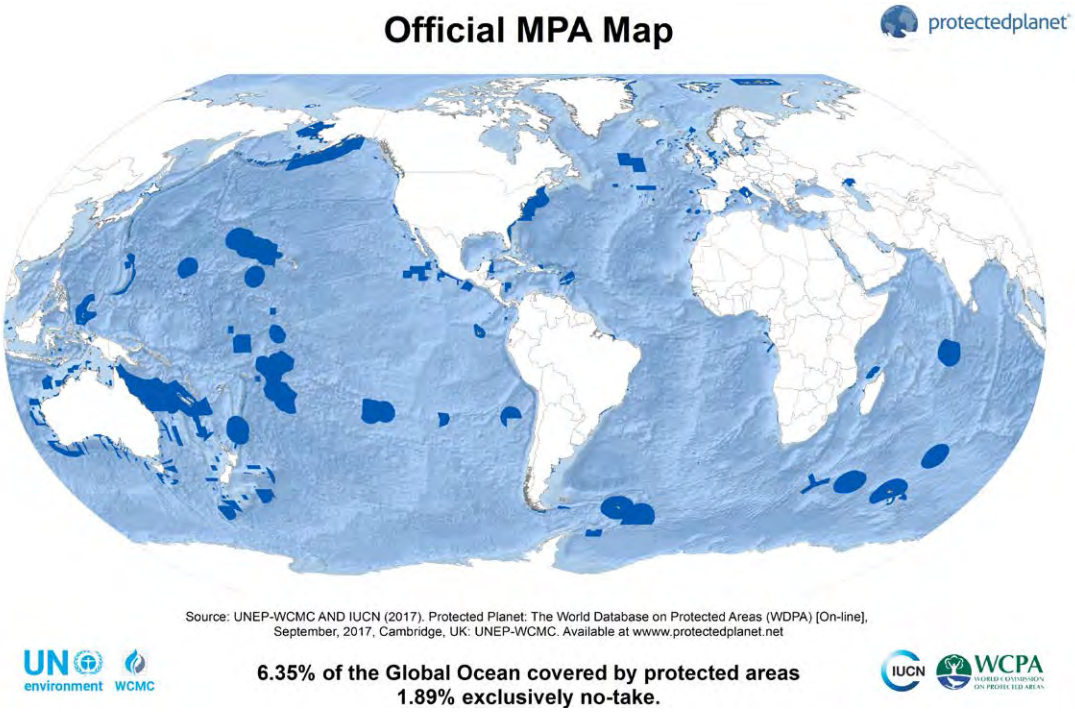


Figure 9: Map of global marine protected areas (MPAs) showing MPAs in national waters and in areas beyond national jurisdiction (ABNJ). The map does not include the Ross Sea Region High Seas MPA (in ABNJ), which will be enforced in December 2017 (Source: UNEP-WCMC, September 2017).

9 European Overseas entities protect 10% or more of their marine area under national jurisdiction by establishing vast MPAs within their waters[20]: the Pitcairn Islands (almost 100%), the British Indian Ocean Territories (almost 100%), Martinique (100%), Mayotte (99%), New Caledonia (94.3%), South Georgia and South Sandwich Islands (87%), the French Southern and Antarctic Territories (100%), Saba (28%), as well as St Helena, Ascension and Tristan da Cunha (28%) through a number of off-shore MPAs.

Including not only territorial waters but extending protection further to the EEZ, these **9 European Overseas entities contribute to more than 95% of the European Overseas MPA coverage**. The protection status of these MPAs ranges from strictly no-take to multiple-use MPA with varying degrees of management and enforcement.

Most of the existing European Overseas MPAs are located in coastal waters (within a 3 nautical miles zone), while deep sea and pelagic ecosystems still remain little represented. With basic data on marine habitat coverage not yet available for most ORs and OCTs, improvements are needed on both, collection of scientific data as well as representativeness and connectivity of protected marine ecosystems in order to support effectiveness and resilience of existing MPAs and MPA networks.

Humpback whale, St Pierre & Miquelon, North Atlantic © Joël Detcheverry

The need for a global representative system of MPAs was recognized as early as 1988, at the 17th IUCN General Assembly in San José, Costa Rica. The World Summit on Sustainable Development (WSSD) in 2002 called for the *"establishment of marine protected areas consistent with international law and based on scientific information, including representative networks by 2012"* (UNEP-WCMC, 2008). The Convention on Biological Diversity (CBD) responded to these recommen-

20 The combined area of coastal waters, territorial seas and exclusive economic zone (EEZ).

dations by requiring that all parties establish protected areas that are planned and managed as a *system* or *network*. The first marine conservation target was endorsed at the 8th Conference of the Parties in 2006 and required "*effective conservation of at least 10% of each of the world's ecological regions by 2010*[21]".

A new international marine conservation target was set during the 10th Conference of the Parties held in 2011 with the Aichi Target n°11 "*By 2020, 10% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes*". However, concerned by the rapid and unsustainable rates of human impacts on our oceans and recent scientific evidence for effective protection targets, the World Conservation Congress (WCC) in 2016 encourages "*to designate and implement at least 30% of each marine habitat in a network of highly protected MPAs and other effective area-based conservation measures…"* by protecting at least 30% of national waters and establishing MPAs in areas beyond national jurisdiction[22].

Taking into account the diversity of marine ecosystems of the 34 European Overseas, **the EU Overseas MPA network needs however to be further improved,** not only for ecological and biodiversity purposes but also for supporting sustainable development and economical resilience of the EU Overseas ORs and OCTs. Healthy marine ecosystems are more than assets - they are fundamental for local and regional economy, particularly for fisheries and the tourism sector. However, key to achieving tangible marine conservation results is effective and sustainable management of these valuable coastal and marine ecosystems and the services they provide.

Va'a, canoeing training, Moorea, French Polynesia © Carole Martinez

This report aims to provide the first assessment of coastal and marine conservation efforts in Europe's ORs and OCTs by looking at:

Coverage, location, regional agreements (such as UN Environment Regional Sea Conventions), marine sanctuaries and High Seas MPA projects **(chapter 1);**

Protected areas management and governance **(chapter 2)**;

An analysis of both representativeness and resilience criteria **(chapter 3)**;

Potential to support resilience of marine and coastal ecosystems to climate change **(chapter 4);**

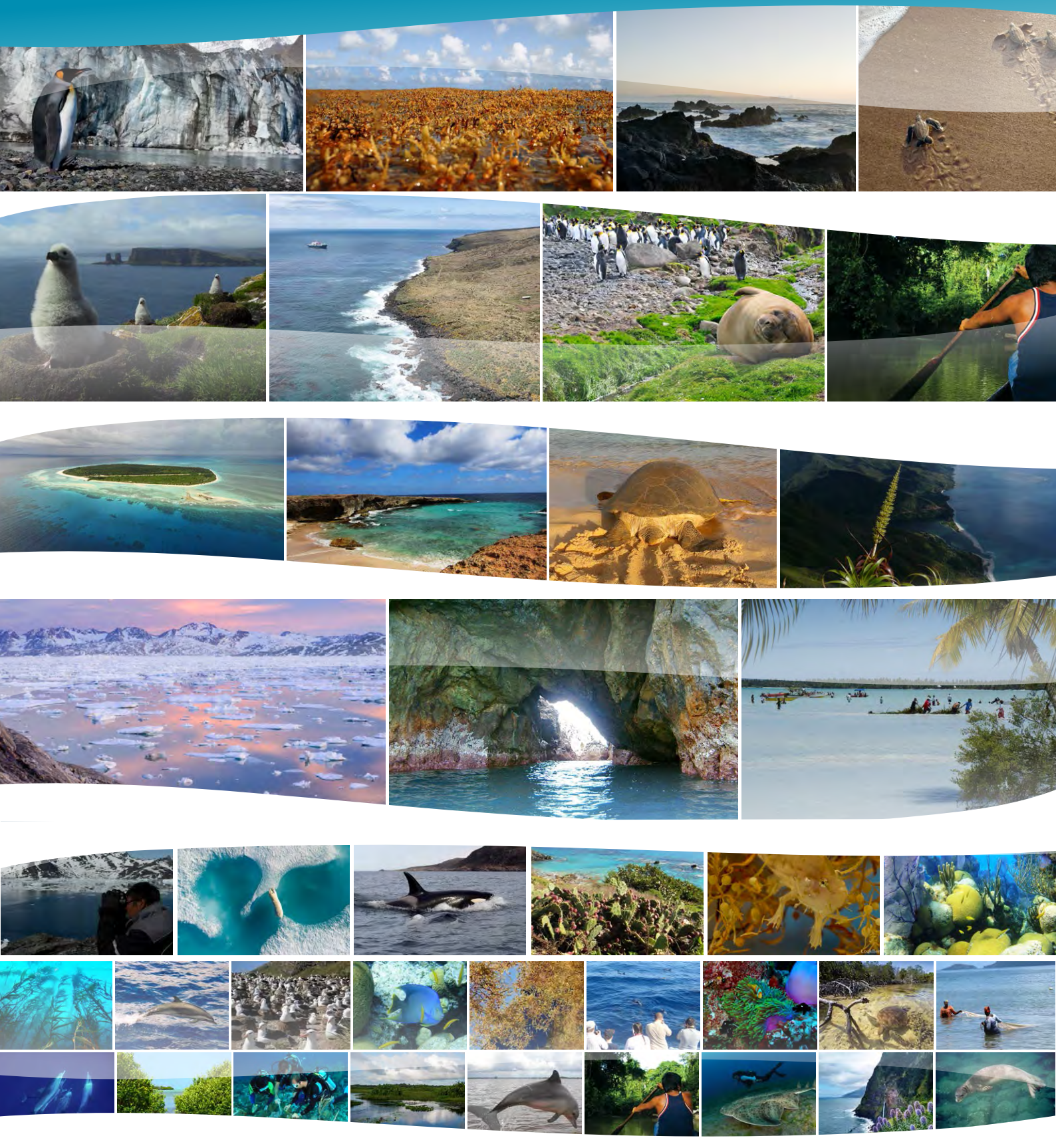
Current efforts undertaken to address the threats of invasive alien species **(chapter 5)**;

Progress towards achieving the international objectives set under the CBD framework **(chapter 6)**.

The report also highlights how much the EU Overseas - located in all major oceans of the world - are essential players in regional marine cooperation, global ocean governance and protection as well as key allies for the achievement of the Aichi Targets and the Sustainable Development Goals (SDGs).

21 Decision VIII/15, Annex IV, Eighth Meeting of the Conference of the Parties to the Convention on Biological Diversity

22 WCC 2016 Resolution 050: *Increasing marine protected area coverage for effective marine biodiversity conservation*



1. **CURRENT STATUS** OF MARINE AND COASTAL CONSERVATION EFFORTS

Baby turtles on beach © Roger Le Guen

Territory

French Guiana

AMAZONIA REGION

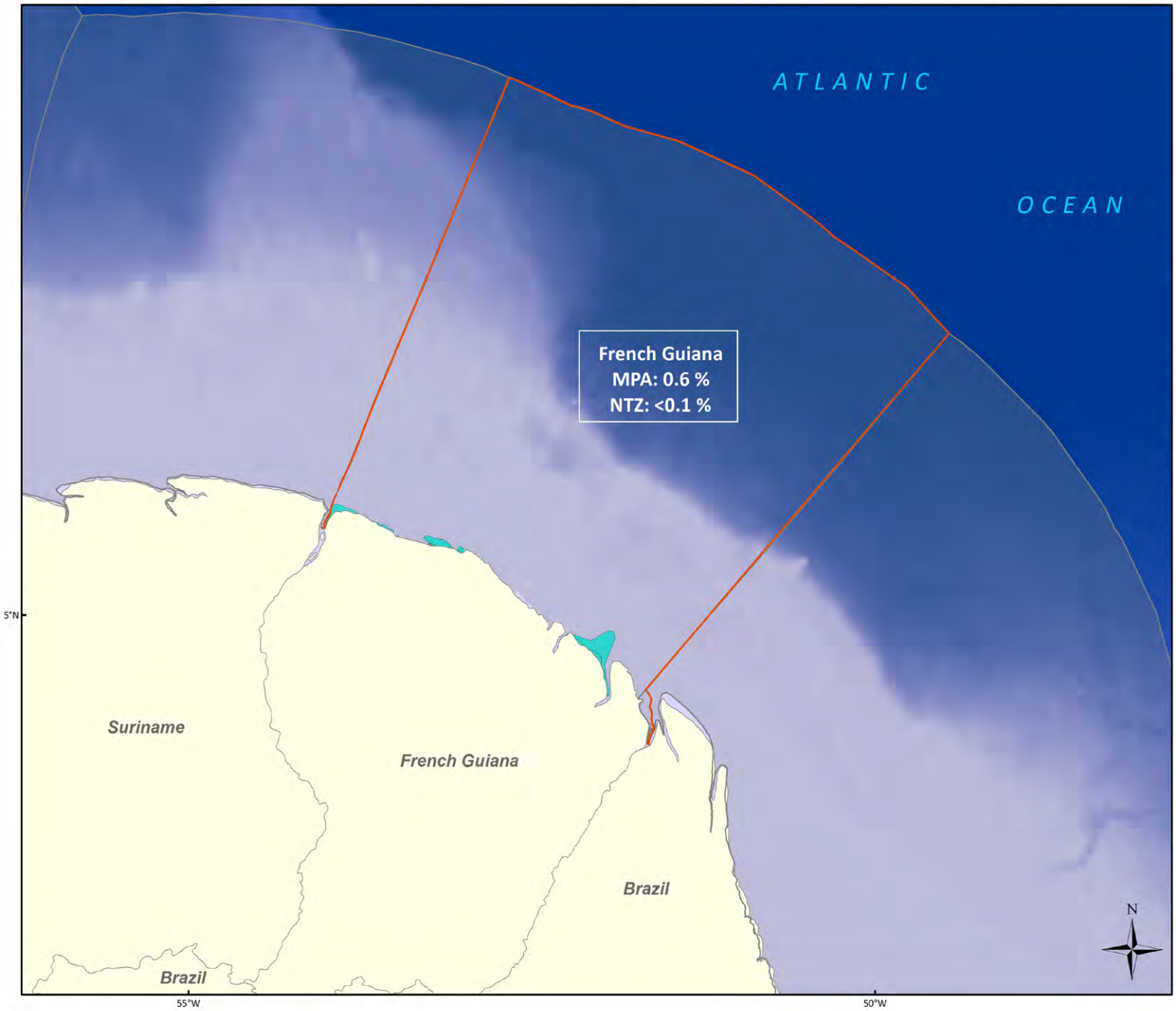
Wetlands in French Guiana © WWF, photo by Florent Taberlet

Guiana Dolphin (Sotalia guianensis) © Jakob Fahr

Coastal wetland © David Johnstone

Wide river plume in French Guiana © WWF, photo by Florent Taberlet

Marine conservation efforts in the European Overseas: Amazonia region (French Guiana)



Total protected area within Amazonia (French Guiana) European Overseas EEZ

Marine protected area (MPA):	0.6 %
No take zone (NTZ):	< 0.1 %

Legend

Exclusive Economic Zones (EEZ)

- European Overseas Countries and Territories and Outermost Regions
- Other

Protection in EU Overseas

- Marine protected areas incl. Ramsar sites under protection
- Marine sanctuary

Depth (m)

0
2000
4000

0 50 100 150
Kilometers

Data sources:
- EEZ: VLIZ
- Coastline/borders: FAO
- Bathymetry: GEBCO 2014

Map projection: World Mercator, EPSG:3395

Status: August 2017

Map 2: EU Overseas marine conservation efforts in the Amazonian region (Source: IUCN, 2017)

1.1. AMAZONIAN REGION

Regional overview

International Recognition of Amazonian EU Overseas' Marine Biodiversity

1 Ecologically or Biologically Significant Marine Area (EBSA)

Amazonian-Orinoco Influence Zone

1 Large Marine Ecosystem (LME)

North Brazil Shelf **(LME 17)**

Located in the tropical Amazonian region, French Guiana is the only EU Overseas entity on the South American continent. Around 90% of the population is located in the coastal area.

French Guiana is part of the Guianas also called "Guianas Coastal Province" (Longhurst, 1998), which also includes Guyana (formerly British Guiana) and Suriname. Under the influence the Amazon River plume and oceanic currents, the Guianas region is one of the world's most dynamic ecosystems with specific environmental and hydrodynamic conditions, rapid accretion and erosion processes. Its 1,600 km long coastline is influenced by the tides, strong coastal currents and the heavy sediment loads, known as "mud banks" up to 5 m high, 50-60 km long and 10-20 km wide, which migrate up to 2 km each year along the coast. This phenomenon results in one of the world's most variable coastlines, the periodic modification of the geomorphology of most estuaries and the biological enrichment of the fishery resource (BRGM, 2014). Over time, these mud banks lead to mudflats and colonization with mangroves, which adapted to these specific dynamics and constant changes along the coastline (Fromard, 2010) and are described as the Guianan-Amazon mangroves ecoregion (WWF, 2016)[23]. The mangroves and mudflats along the coastline are considered some of the most extensive and structurally complex mangrove ecosystems in South America, covering over 14,000 km^2 and around 90% of French Guiana's coastal zones, providing habitat for millions of wader birds. Although increasingly under threat (WWF, 2016), they resemble one of the least degraded mangrove forests in the world.

Mangroves providing nursery, protection and water filtration at river basins and coasts © WWF, photo by Florent Taberlet

The sandy beaches of French Guiana are an equally important habitat, which serves as nesting ground for four out of the world's seven marine turtle species: the leatherback (*Dermochelys coriacea, VU*), olive ridley (*Lepidochelys olivacea, VU*), green (*Chelonia mydas, EN*) and occasionally Hawksbill turtle (*Eretmochelys imbricata, CR*). While covering only 128 ha or less than 0.05 % of the French Guiana area, the world's two most important egg-laying sites of these turtle species are beach habitats of international importance: the Yalimapo beach and the Cayenne island, one of the most populated and anthropized area. The IUCN Red List has classified all species of marine turtles either as critically endangered or endangered and all locally occurring sea turtle species are protected by the national laws of Guianas countries (IUCN, 2015).

23 The World Wildlife Fund (WWF) assessed global biodiversity and habitats and identified the Global 200 - the most biologically distinct 238 ecoregions of the planet: 142 terrestrial (incl. mangroves), 53 freshwater, and 43 marine ecoregions.

Leatherback turtle at a beach in French Guiana © WWF, photo by Thierry Montford

The turbid waters in coastal regions are particularly rich in nutrients, highly diverse phytoplankton and coastal biodiversity with unique species of both flora and fauna: Several marine mammals are observed throughout the year, including the Guyana dolphin (*Sotalia guianensis, DD*) and the manatee (*Trichechus manatus, VU*), particularly along the rocky coasts around the islands. These rocky areas also provide habitat for nesting seabirds and critically endangered groupers (*Epinephelus itajara, CR*). A recently discovered over 1000 km long coral reef system, covering over 9,500 km^2 in the mouth of the River Amazon bordering French Guiana, is yet to be fully explored (Moura *et al.* 2016).

French Guiana is included in the **Amazonian-Orinoco Influence Zone**, which was suggested as **EBSA** area for it high primary productivity of microscopic, surface-dwelling phytoplankton thanks to the huge nutrient flux from the Amazon River plume into the Atlantic Ocean, which provide feed to a variety of fish, invertebrate, marine mammals, turtles as well as seabirds. The coastal region hosts the largest seabird colonies and is renowned for the millions of migratory birds from North America that stay over the winter, qualifying this area for EBSA criteria biological diversity and importance for life-history stages[24].

A large marine ecosystem (LME) has been defined for the **North Brazil Shelf** (LME 17), characterized by the Amazon plume influence making this marine region one of the 10 most productive of the world. The North Brazil Shelf LME is bordered by Brazil and the Amapà, Parà, Maranhao States, French Guiana, Guyana and the South of Venezuela.

Figure 10: Map of South America's large marine ecosystems with the Tropical West Atlantic (orange) including the coastline of French Guiana. (Source: Miloslavich *et al.* 2011)

Regional agreements

There is no UNEP administered Regional Seas programme or Convention dedicated to the North Brazil shelf LME. However, France, Suriname, Guyana and Venezuela ratified the Cartagena for the Protection and Development of the Marine Environment in the Wider Caribbean Region (WCR) - or short Cartagena Convention - as regional legal agreement for the pro-

24 The Amazonian-Orinoco Influence Zone is part of the Wider Caribbean and Western Mid-Atlantic region

tection of the Caribbean Sea[25]. The waters of French Guiana, Guyana and Venezuela were also included in the **Protocol Concerning Specially Protected Areas and Wildlife (SPAW) area of implementation[26]**. A dedicated Regional Activity Centre (SPAW-RAC) is based in Guadeloupe. As for its forest ecosystems, regional cooperation is critical for French Guiana's marine ecosystems.

Current efforts are targeting the illegal, unreported and unregulated (IUU) fishing, which represents 200% of the local fishing activities in French Guiana (WWF, 2014) and thus an acute challenge for conservation, sustainable management and sovereignty. A wider coordination on marine spatial planning is necessary to regulate land use and oil exploitation as well as reduce mercury pollution from gold mining.

International Cooperation & Regional Fisheries Bodies

The Western Central Atlantic Fishery Commission (WECAFC) applies to French Guiana. With regards to access of third country vessels to EU waters, currently Venezuela-flagged vessels are allowed to fish in French Guiana's waters. The EU Council decisions[27] indicated that "*The processing industry based in French Guiana depends on the landings from those fishing vessels and therefore the continuity of those operations should be ensured*". However, a European Parliament resolution, adopted in 2017, recalls "*that marine biological resources around the ORs should be especially protected and that particular attention should be paid to fishing; stresses, therefore, that only fishing vessels registered in OR ports should be allowed to fish in OR waters*" and stresses "*the need to carry out impact assessments for the ORs whenever they are affected by fisheries agreements concluded between the EU and third countries, in accordance with the provisions of Article 349 TFEU*"[28].

EU Overseas coastal and marine protected areas in the Amazonian region

	EU Overseas waters area km²	Coastal and marine protected areas (MPAs)			No-take zones (NTZ)			Marine mammal /shark sanctuary km²
		Number	Area (km²)	% of waters area	Number	Area (km²)	% of waters area	
French Guiana (FR)	134,656	3	746.3	0.6	2	91.5	<0.1	No

Table 1: EU Overseas coastal and marine protected areas in the Amazonian Region, including Ramsar sites under protection. A list of individual protected area designations of this region can be found in Annex 1.

In the Amazonia region, **total of 746 km² or 0.6 %** of French Guiana waters under national jurisdiction are under protection.

Only 12.2 % of the areas under protection exclude fishing within two MPAs. The two no-take zones reside in the National Natural Reserves (RNN) of Amana (1998) and Île du Grand Connetable (1992), which were created as RNN by decree and are also included in Ramsar sites (Basse-Mana; Marais De Kaw et Île du Grand Connetable). Marais De Kaw-Roura (1998) is the third largest French Natural Reserve and the largest wetland area of France (*zone humide*). The area of the RNN Île du Grand Connetable is also listed under the SPAW Protocol.

The current MPA network coverage is thus quite low in comparison with the importance of the different coastal and marine ecosystems and their respective functions as highlighted by the French Guiana Regional strategic Analysis.

25 The Cartagena convention has been ratified by 25 United Nations Member States in the Wider Caribbean Region. It covers the marine environment of the Gulf of Mexico, the Caribbean Sea and the areas of the Atlantic Ocean adjacent thereto, south of 30 north latitude and within 200 nautical miles of the Atlantic Coasts of the signatory States. It was adopted in Cartagena, Colombia on 24 March 1983 and entered into force on 11 October 1986.

26 The SPAW Protocol has been ratified by 16 countries: Bahamas, Barbados, Belize, Colombia, Cuba, Dominican Republic, France (Guadeloupe, Guyane, Martinique, Saint-Barthélémy, Saint-Martin), Grenada, Guyana, Netherlands (Aruba, Bonaire, Curaçao, Saba, Sint-Eustachius, Sint Maarten), Panama, Saint-Lucia, St Vincent and the Grenadines, Trinidad and Tobago, United States (States following Gulf of Mexico, U.S. Virgin Islands, Puerto-Rico), Venezuela. It was adopted on 18 January 1990 and entered into force on 18 June 2000.

27 EU Council decision on the approval, on behalf of the European Union, of the Declaration on the granting of fishing opportunities in EU waters to fishing vessels flying the flag of the Bolivarian Republic of Venezuela in the exclusive economic zone off the coast of French Guiana; 2010/0392 (NLE) and 2015/0001 (NLE).

28 European Parliament resolution of 27 April 2017 on the management of the fishing fleets in the Outermost Regions (2016/2016(INI)); P8_TA-PROV(2017)0195 (extracts).

International & Regional Designations in Amazonian EU Overseas (French Guiana)

3 Ramsar Wetland sites (with marine connection)

Estuaire du fleuve Sinnamary	284 km²
Marais de Kaw	312 km²
Basse-Mana	150 km²

1 marine site under SPAW Protocol

île du Grand Connétable	78.5 km²

Already in 2009, the French Strategic Regional Analysis for French Guiana (ASR Guyane, 2009) suggested among the actions to be undertaken:

- Strengthening the management of existing MPAs and RAMSAR sites;
- Extending RAMSAR sites such as the Rémire Islets and the Kaw-Grand Connetable RAMSAR sites up to the Brazilian boundary as well as reinforcing their management
- Formalizing the protection of the Salut Islands;
- Developing a regional cooperation project on marine mammals bringing together all the countries of the North Brazil Shelf LME (Brazil, French Guiana, Surinam, Guyana, Venezuela as well as Trinidad and Tobago);
- Declaring an international marine mammal sanctuary.
- In 2010 a first atlas of the French Overseas Mangroves was published by IFRECOR and the Conservatoire du Littoral, assessing that almost 70% of all mangroves (700 km²) in the French ORs reside in French Guiana (Roussel *et al.* 2010).

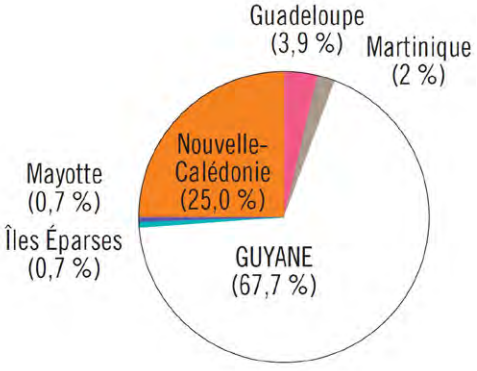


Figure 11: Almost 70% of all mangrove areas in the French Outermost regions can be found in the French Guiana coastal areas. Source: Roussel et al. (2010)

Given their ecological and landscape benefits mangroves have been identified as priority by the Conservatoire du Littoral, who is the owner, trustee or allottee of 240 km² of mangroves spread over 54 sites in Saint Martin, Guadeloupe, Martinique, French Guiana and Mayotte. This surface area corresponds to a quarter of all French Overseas mangroves while the national objective is to protect a third of all French mangrove areas (about 350 km², French mangrove observation network, 2014) as part of the overall national objective of protecting the "coastal natural third" (Conservatoire du Littoral, 2015).

Coast near Cayenne © Frédéric Blanchard

As natural shields mangroves constitute a coastal defence or green infrastructure reducing erosion, trapping sediments, stabilizing shorelines, damping wave action. Capturing carbon dioxide mangroves are also important blue carbon sinks. A study conducted in Guiana shows the relevance and cost efficiency of these efforts, highlighting that the reduced protection provided by mangroves against the swell will lead to the large-scale erosion of 370 km of the country's coastline. Only an ecosystem restoration programme will help contain this phenomenon (Antony *et al.*, 2012).

In 2014, the MANG project was funded by the French Development Aid Agency as part of the European BEST Initiative[29], with the aim to improve the wetlands management for better efficiency (see text below below). In French Guiana this project is aiming at defining a future management plan (2016-2021) for the pilot site of Pripris de Yiyi.

At the International Conference on Islands, Biodiversity and Climate change held in Guadeloupe in 2014, the French government mentioned a wetland nation-

29 All projects funded under the European BEST Initiative can be found on the BEST website and the BEST 2.0 programme portal.

al park project for a more ambitious protection in the Kaw area but so far no new MPA has been created in French Guiana. In July 2016, the French Parliament adopted the new law on biodiversity, nature and landscape, which also sets the national objective of protecting 55,000 hectares of mangroves by 2020[30]. However concrete implementation steps in the French ORs and OCTs remain to be further detailed as well as efforts beyond coastal zones.

the French Guiana waters for marine mammals there is no marine mammal sanctuary. Regional scientific collaboration on marine mammals was initiated in 2011 by SPAW-RAC with the MaMa CoCo[33] Sea project as a tool for implementing the SPAW-RAC Marine Mammal Action Plan (MMAP) in the area. However, to better support marine mammal conservation actions, cooperation and particularly regional marine spatial planning efforts such as in the Caribbean have yet to be established.

MANG project - Preservation of coastal wetlands in EU Overseas

Activities:

- improving understanding of overseas wetlands thanks to a simple and reproducible ecological diagnosis methodology,
- defining, with local players, the management objectives and putting follow-up in place by drawing up simple and reproducible standardised protocols,
- promoting governance of participatory wetland management,
- reinforcing the sharing of feedback among the managers of the various territories and making the results
- accessible to the local populations,
- encouraging collective movement for the preservation of European overseas coastal wetlands.

8 pilot sites in in Saint-Pierre and Miquelon, Saint-Martin, Saint-Barthélemy, Guadeloupe, Martinique, French Guiana, Mayotte and Réunion, and more broadly any neighbouring Outermost Region (OR) or Overseas Country and Territory (OCT) wishing to join the network.

Marine mammal and shark sanctuaries

French Guiana waters are important for the Guiana or Sotalia dolphins *(Sotalia guianensis,* DD*)*[31]*,* whose distribution follows the Amazonian river plume. Its limited distribution makes the species particularly vulnerable to human disturbance.

Recent inventory efforts of marine mammal populations[32] revealed how remarkable the waters of French Guiana are with an unsuspected abundance of cetaceans. The density of marine mammals observed in French Guiana was shown to be substantially higher than in the French West Indies, seven to eight times more for small delphinidaes or oceanic dolphins (Van Canneyt *et al.,* 2009) stressing the importance of this region and regional cooperation to respond to the challenges identified in marine mammal conservation (Brichet *et al*., 2011).

Despite the scientific evidence of the importance of

High Seas MPAs

There are no High Seas MPAs or High Seas projects in the Amazonian region.

Leatherback turtle making its way back to the sea, French Guiana
© Roger Leguen, WWF

30 Loi pour la biodiversité, article 51 ter A 1°.

31 A Sotalia Observation Network (Réseau d'Observation Sotalie) was launched in January 2014, attempting to address the dearth of information on the species.

32 Survey of marine mammals and other pelagic megafauna by aerial observation, REMMOA (French : *REcensement des Mammifères marins et autre Mégafaune pélagique par Observation Aérienne*).

33 MaMa CoCo Sea – Marine Mammals Conservation Corridor for Northern South East America. No recent updates.

Aruba National Park © Carole Martinez

Territories

- Cayman Islands
- Turks and Caicos Islands
- British Virgin Islands
- Anguilla
- Saint Martin
- Sint Maarten
- Saint Barthélemy
- Saba
- Sint Eustatius
- Montserrat
- Martinique
- Aruba
- Curaçao
- Bonaire
- Guadeloupe

CARIBBEAN REGION

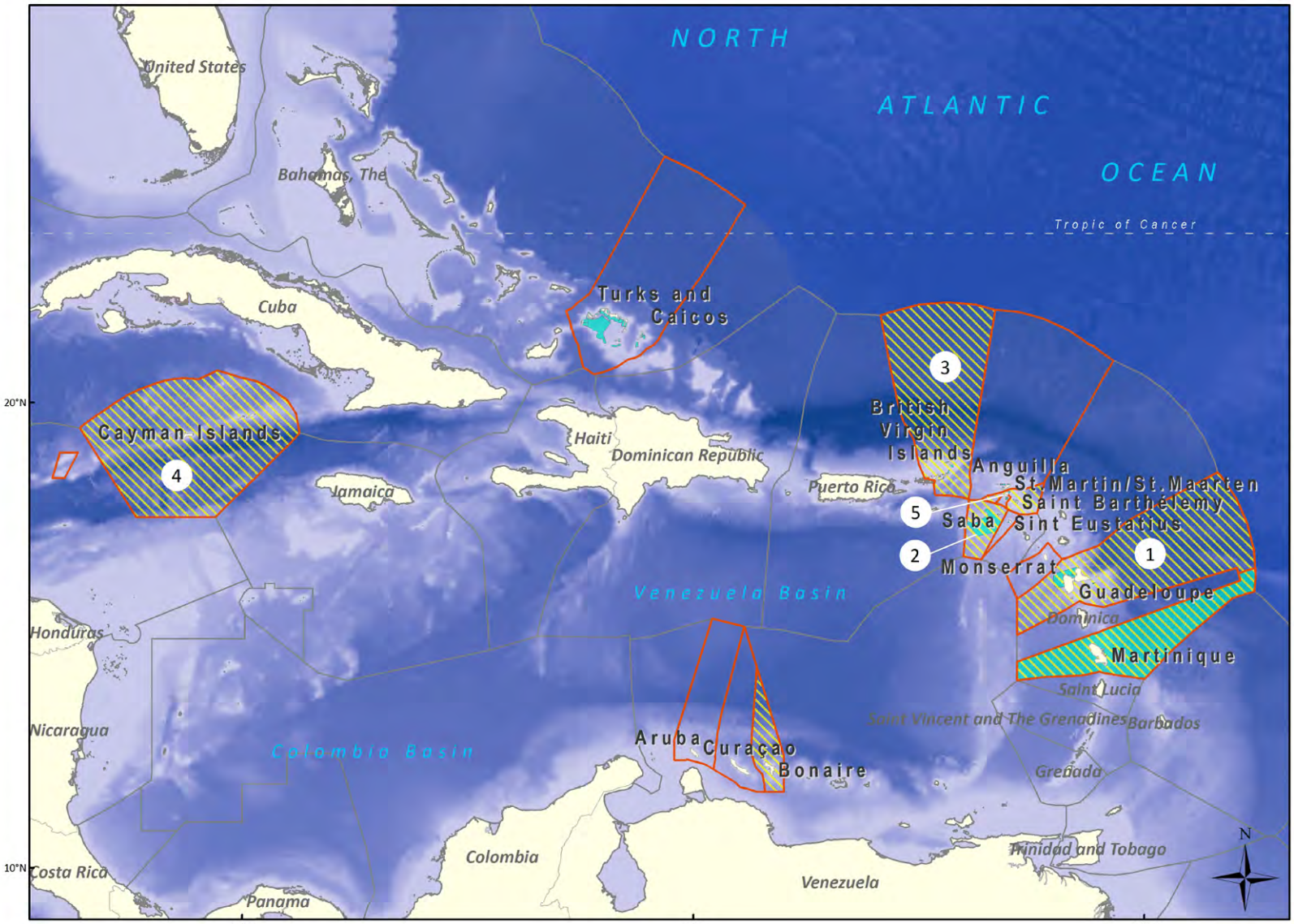
Striped dolphins, Anguilla © Stuart Wynne

Mangroves, British Virgin Islands © Stewart McPherson

St. Martin National Marine Reserve © Franck Mazeas

British Virgin Islands © Stewart McPherson

Marine and coastal conservation efforts in the European Overseas: Caribbean region



Summary for Caribbean European Overseas

Marine protected area (MPA):	21.7 %
No take zone (NTZ):	0.1 %
Marine sanctuary:	54 %

Legend

Exclusive Economic Zones (EEZ)

- European Overseas Countries and Territories and Outermost Regions
- Other

Protection in EU Overseas

- Marine protected areas incl. Ramsar sites under protection
- Marine sanctuary

Depth (m)

0
4000
8000

0 100 200 300 400
Kilometers

Data sources:
- EEZ: VLIZ
- Coastline/borders: FAO
- Bathymetry: GEBCO 2014

Map projection: World Mercator, EPSG:3395

Status: August 2017

Marine Sanctuaries:
1 - Agoa (143,256 km^2) – protection of marine mammals
2 - Yarari (23,000 km^2) – protection of marine mammals and sharks in waters of Saba (incl. Saba Bank) and Bonaire
3 - British Virgin Islands (80,117 km^2) – protection of sharks and rays
4 - Cayman Islands (119,134 km^2) – protection of sharks
5 - St Maarten (499 km^2) – protection of sharks

Map 3: EU Overseas marine conservation efforts in the European Overseas entities of the Caribbean region (for details see individual maps in sub-regional sections) (Source: IUCN, 2017)

1.2. CARIBBEAN REGION

Regional overview

The Caribbean region is home to 17 dependent territories (USA, UK, France, and the Netherlands) and 22 independent states, including 20 Small Island Developing States (SIDS). This region has been assessed as the "*most geopolitically diverse and complex in the world*" (UNDP/GEF CLME Project, 2011). The Caribbean large marine ecosystem has the highest number of maritime boundaries of the 64 existing Large Marine Ecosystems.

International Recognitions of Caribbean EU Overseas' Marine Biodiversity

2 Ecologically or Biologically Significant Marine Areas (EBSAs)

Eastern Caribbean

Saba Bank

1 Mission Blue Hope Spot

George Town Harbor in the Cayman Islands

1 Biodiversity Hotspot

Caribbean Islands

1 Particularly Sensitive Sea Area

Saba Bank

1 Large Marine Ecosystem (LME)

Caribbean Sea **(LME 12)**

The Caribbean region encompasses 3 European Outermost Regions (ORs) and 12 Overseas Countries and Territories (OCTs): 5 UK Overseas Territories (OTs), Anguilla, British Virgin Islands, Cayman Islands, Montserrat and Turks and Caicos Islands; 6 Dutch OCTs, Aruba, Bonaire, Curaçao, Saba, Sint Eustatius and Sint Maarten; 3 French ORs, Guadeloupe, Martinique, Saint Martin, and the French Overseas collectivity of Saint Barthelemy. These islands form part of the Caribbean large marine ecosystem (LME 12) and the Caribbean Islands biodiversity hotspot. They host an important and extremely rich aquatic and marine biodiversity with particularly high levels of endemic species due to their insularity.

Being home to such a high biodiversity and habitat variety, the Eastern Caribbean[34] arc that separates the Atlantic Ocean and the Caribbean Sea and Saba Bank were accepted as ecologically or biologically significant area (EBSA). The coastal coral reefs, seagrass beds and mangrove swamps nearshore as well as seamounts and hydrothermal vents further off-shore provide breeding and nursing ground for over half a million individual seabirds, marine mammals and a high biodiversity of both shallow-water and deep-water species. Existing information and knowledge gaps on biological connectivity among ecosystems, ecosystem resilience and deep-sea ecosystems will need to be addressed to better inform management approaches for the described EBSA area. Moreover, in 2016 *Mission Blue* identified George Town Harbor in the Cayman Islands as a *Hope Spot* and the Puerto Rico Trench, passing by the British Virgin Islands has been nominated.

Because of its high biodiversity and fisheries value and use of the area as an anchorage for large tankers, the Saba Bank was also recognized by the International Maritime Organization (IMO) as one of the 16 Particularly Sensitive Sea Areas (PSSAs) worldwide[35]. The Island of Saba and Bonaire Marine Park are on the Tentative List for World Heritage.

The coastal and marine ecosystems contribute highly to the socio-economic growth of the region. Already in 1999, the 2nd Association of Caribbean States (ACS) Summit of Heads of State and/or Government endorsed the designation of the Caribbean Sea as a

34 The Eastern Caribbean EBSA area is part of the Wider Caribbean and Western Mid-Atlantic region and includes the 4 French overseas entities, the Dutch Lesser Antilles Saba, St Eustatius, St Maarten, as well as Anguilla and Montserrat.

35 *Particularly Sensitive Sea Areas (PSSAs) need special protection through action by the International Maritime Organization (IMO) because of its significance for recognized ecological or socio-economic or scientific reasons and which may be vulnerable to damage by international maritime activities.*

Special Area in the context of Sustainable Development. In 2008, the Caribbean Sea Commission was established to promote and oversee the sustainable use of the Caribbean Sea.

Cardinal fish in Caribbean coral reefs © Ricardo Haroun

The heavy reliance of most of the Caribbean economies on their coastal areas and the marine environment to achieve their sustainable development goals was stressed by the UN General Assembly, who also pointed out that the Caribbean region is the most tourism dependent region in the world relative to its size (UNGA, A/RES/67/205 2012). Seven of the 10 countries most dependent on tourism are in the Caribbean (WTTC Caribbean, 2011). In 2014, the Caribbean Region was the first ranked regarding the total contribution of travel and tourism to GDP (USD 51.9 billion, 14.6% of GDP) and is forecasted to rise by 3.3% to USD 73.6 billion (15.4% of GDP) in 2025 (WTTC Caribbean, 2015).

Over 12,000 species have been reported by the Census of Marine Life in the Wider Caribbean Region, including 118 marine invasive species. The Wider Caribbean Region shows a considerable spatial and seasonal heterogeneity in productivity with interactions of open-ocean, coastal and ocean processes and riverine inflows. High productivity is found in coastal habitats such as coral reefs, mangrove forests and seagrass beds, at ocean fronts and upwelling, as well as continental shelf influenced by river outflow.

Globally, coral reef fauna in the Caribbean Islands has the most taxonomic variety: Approximately 7% of the world's coral reef resources are located in the Wider Caribbean, particularly in the Greater Antilles and The Bahamas, as found by the Global International Waters Assessment (GIWA) of the Caribbean Islands region (UNEP-GIWA, 2004). However, 29% of the reef areas in the Wider Caribbean are considered under high risk due to an array of causes, the main threats being posed by human activities, such as population growth and unsustainable development of tourism, overfishing and coastal pollution (Jackson et al. 2014), but lately also by invasive species, in particular lionfish, and increasingly ocean warming and associated bleaching events (Eakin et al. 2010).

Numerous anthropogenic factors impact Caribbean marine biodiversity and ecosystem resilience, such as the introduction of invasive alien species, destruction or fragmentation of habitats, unregulated development, unsustainable fisheries and pollution. In this regard, the Caribbean Large Marine Ecosystem project identified three transboundary problems: unsustainable fisheries, habitat degradation and pollution (UNDP/GEF CLME Project, 2011), and since 2015 a Strategic Action Programme for the CLME+ project (including also the North Brazil Shelf LME) has been working to establish clear priorities for action to resolve these key transboundary problem.

Tourism and water sports in MPAs, British Virgin Islands © Stewart McPherson

Regional agreements

The Caribbean region benefits from an UNEP administered **Regional Seas programme**, the Caribbean Environment Programme (CEP), which encompasses the Wider Caribbean Region, defined as "the marine environment of the Gulf of Mexico, the Caribbean Sea and the areas of the Atlantic Ocean adjacent thereto south of 30 degrees north latitude and within 200 nautical miles of the Atlantic coasts of the Contracting Parties[36].

36 The Contracting Parties to the Cartagena Convention are Antigua and Barbuda, Bahamas, Barbados, Belize, Colombia, Costa Rica, Cuba, Dominica, the Dominican Republic, France, Grenada, Guatemala, Guyana, Jamaica, Mexico, the Netherlands, Panama, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, Trinidad and Tobago, United Kingdom, the United States, and Venezuela. The Contracting Parties of the SPAW Protocol are Barbados, Belize, Colombia, Cuba, the Dominican Republic, France, Guyana, the Netherlands, Panama, Saint Lucia, St. Vincent and the Grenadines, Trinidad and Tobago, the United States, and Venezuela.

Under this programme the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region or **Cartagena Convention**, was adopted in 1983 and entered into force in 1986.

The Convention is supplemented by three Protocols concerning the following points:

1. Oil Spills Protocol: Co-operation in Combating Oil Spills in the Wider Caribbean Region; adopted in 1983 and entered into force in 1986.
2. SPAW Protocol: Specially Protected Areas and Wildlife to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region; adopted in 1990 and entered into force ten years later in 2000.
3. LBS Protocol: Pollution from Land-Based Sources (LBS) and Activities to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region; adopted in 1999 and entered into force in 2010.

International Cooperation & Regional Fisheries Bodies

Through the EU, the Caribbean Overseas entities are members of the Western Central Atlantic Fishery Commission (WECAFC), established in 1973 by a FAO Council Resolution37 aiming at strengthening the implementation of international fisheries instruments. In addition, Anguilla, Montserrat and Turks and Caicos Islands are also parties to the Caribbean Regional Fisheries Mechanism (CRFM).

37 Resolution 4/61 of the FAO Council under Article VI (1) of the FAO Constitution

The SPAW protected areas

Under the SPAW Protocol, the Contracting Parties commit to protect and preserve – in a sustainable way – threatened or endangered species and areas of special value within the Convention Area by regulating and, when necessary, prohibiting activities that would have adverse effects on those areas and species. Furthermore, the Contracting Parties agreed to enact certain national measures for the protection of threatened and endangered flora and fauna.

The SPAW Protocol calls for Contracting Parties to establish Protected Areas tosustain the natural resources of the Wider Caribbean Region and to encourage the ecologically-sound and appropriate use, understanding, and enjoyment of these areas. Protected Areas are intended to conserve, maintain, and restore:

(a) Representative types of coastal and marine ecosystems of adequate size to ensure their long-term viability and to maintain biological and genetic diversity;

(b) Habitats and their associated ecosystems critical to the survival and recovery of endangered, threatened or endemic species of flora or fauna;

(c) The productivity of ecosystems and natural resources that provide economic or social benefits and upon which the welfare of local inhabitants is dependent;

(d) Areas of special biological, ecological, educational, scientific, historic, cultural, recreational, archaeological, aesthetic, or economic value [...]

For more information see the databases on protected areas listed under the SPAW Protocol: **http://spaw-palisting.org/**

EU Overseas coastal and marine protected areas in the Caribbean region

In the Caribbean region, almost 150,000 km^2 (21.7 %) of the marine area under national jurisdiction of EU Overseas entities is under some degree of protection but only 0.5 % of the area under protection excludes all extractive activities.

Loggerhead turtle, Caribbean © Jean-Philippe Marechal

	EU Overseas waters area km²	Coastal and marine protected areas (MPAs)			No-take zones (NTZs)			Marine sanctuaries (km²)
		Number	Area (km²)	% of waters area	Number	Area (km²)	% of waters area	
Guadeloupe (FR)	90,570	6	1366	1.5*	9	70.5	0.08	Agoa* marine mammals, entire EEZ
Martinique (FR)	47,340	4	47,340	100*	3	5.4	0.01	
Saint Barthélemy (FR)	4,280	1	12	0.3*	2	2.2	0.05	
Saint Martin (FR)	1,066	1	29	2.7*	1	29	2.7	
*Total French Caribbean entities**	*143,256*	*13*	*143,256*	*100*	*15*	*107.1*	*0.1*	*143,256**
Aruba (NL)	25,199	1	0.7	0.003	0	0	0	No
Bonaire (NL)	13,218	4	27	0.2	2	1.6	0.01	Yarari**, marine mammals & sharks, entire EEZ
Saba (NL) ***	9,644	2	2,693	28	1	4.3	0.04	
Curaçao (NL)	30,427	4	11.5	0.04	0	0	0	No
Sint Eustatius (NL)	2,281	1	27.5	1.2	2	4.9	0.2	No
Sint Maarten (NL)	499	2	31.3	6.3	1	11.2	2.2	Sharks, entire EEZ
Total Dutch Caribbean entities	*81,268*	*14*	*2,791*	*3.4*	*6*	*22*	*0.03*	*23,361*
Anguilla (UK)	92,178	7	79.2	0.09	0	0	0	No
British Virgin Islands (UK)	80,117	15	62.6	0.08	1	41.1	0.06	Marine mammals & sharks, entire EEZ
Cayman Islands (UK)	119,134	40	110	0.09	11	33.4	0.03	Sharks, entire EEZ
Montserrat (UK)	7,586	0	0	0	0	0	0	No
Turks & Caicos Islands (UK)	153,533	20	679	0.4	18	453.6	0.3	No
Total UK Caribbean territories	*452,548*	*82*	*932*	*0.2*	*30*	*528*	*0. 1*	*199,251*
Total Caribbean Overseas region	**677,072**	**109**	**146,979**	**21.7**	**50**	**657**	**0.1**	**365,868 (54%)**

Table 2: EU Overseas coastal and protected areas in the Caribbean Region, including Ramsar sites under protection. A list of individual protected area designations of this region can be found in Annex 2.

* All waters under French sovereignty and jurisdiction in the French Antilles, including the territorial waters and the EEZs surrounding Martinique, St Barthélemy, St Martin as well as Guadeloupe and its dependencies are part of Agoa, a marine mammal sanctuary covering 143,256 km², listed as protected area under the SPAW Protocol of the Cartagena Convention. In addition to the Agoa sanctuary, each of the four French Caribbean Overseas entities also designated individual MPAs in their national waters.
** The Yarari Sanctuary for marine mammals and sharks was established in the territorial waters and the EEZ of Saba (including Saba Bank) and Bonaire (September 2015).
*** Includes MPA Saba Bank National Park (2,680 km²), a submerged offshore atoll southwest of Saba, which falls within the EEZ of Saba and St Eustatius.

Dutch Caribbean Overseas: the largest contiguous MPA in the Caribbean European Overseas

Six marine parks and 8 Ramsar sites with a marine connection located in the Dutch Caribbean Overseas are linked under the Dutch Caribbean Nature Alliance (DCNA). St. Eustatius National Marine Park comprises two actively managed reserves, where fishing and anchoring are prohibited. Curaçao designated an area of its coastal waters as an 'Underwater Park' without any specific conservation measures but other legislation applies to all its coastal waters, including the Curaçao Underwater Park, which prohibits breaking off coral and spearfishing. Whereas the Dutch Caribbean Coastguard tries to enforce the ban on spearfishing, there is no enforcement of the prohibition on breaking off corals. Curaçao has recently committed to SPAW to re-establish the Curaçao Underwater Park, this time with specific regulations and a funded management organization that can enforce the regulations. Five areas including 30% of coastline are to be designated as no-fishing zones (from shore to 150 m off the coast). Three Ramsar sites also cover coastal reef areas, approximately up to the 200 m seashore line, which is about the distance from shore to the 60 m depth isobaths38. Five additional Ramsar sites with a marine component have been proposed as Ramsar sites[39].

38 Ramsar sites Muizenberg, an intermittent shallow lake, and De Slagbaai, a saline lagoon isolated from the sea, were not included for lack of marine connection.

39 Five Ramsar sites were proposed for Curaçao: Spanish Water (4.29 km²); Klein Curaçao (2.55 km²); Jan Thiel Lagoon (3,57 km²); Fuik to Punt Kanon (12.45km²); Sint Jorisbaai (7.39 km²).

International & Regional Designations in Dutch Caribbean Overseas

8 Ramsar Wetland sites (with marine connection)

Aruba	Het Spaans Lagoen	0.7 km²
Bonaire[46]	Klein Bonaire Island and adjacent area	6 km²
	Het Lac	7 km²
	Het Pekelmeer	4 km²
Curaçao[44]	Northwest Curaçao	3.6 km²
	Rif Sint Marie	1.3 km²
	Malpais/Sint Michiel	0.6 km²
St Maarten	Mullet Pond	0.3 km²

5 marine sites under SPAW Protocol

Bonaire	Bonaire National Marine Park	27 km²
Saba	Saba Bank National Park	2680 km²
	Saba National Marine Park	13 km²
St Eustatius	St. Eustatius National Marine Park	1 km²
St Maarten	Man of War Shoal National Marine Park	31 km²

2 tentative World Heritage Sites (see text)

Staghorn coral on Bonaire's reef © Erik Meesters

The Bonaire National Marine Park protects the entire coastline surrounding Bonaire, Klein Bonaire and Lac Bay. It comprises two marine reserves and two no-take zones at the western coast of the island as well as three Ramsar sites[40] and is on the tentative list of World Heritage Sites. The Saba National Marine Park has several no-take zones within marine reserves on the west coast of the island. The Saba Bank National Marine Park encompasses a seasonal no-fishing area to protect a Red Hind grouper Spawning Aggregation Area. Saba Island is listed as tentative World Heritage Site. As of February 2017, Aruba's only Ramsar site is included in the National Park Arikok.

Five of the six marine parks, Bonaire National Marine Park, Saba Bank National Park, Saba National Marine Park, St. Maarten's Man of War Shoal National Marine Park and St. Eustatius National Marine Park, are also recognized as protected areas under the Protocol Concerning Specially Protected Areas and Wildlife (SPAW). Thanks to the support of the European BEST initiative[41], analysis and consultations and legislation completion are conducted for the establishment of Aruba's first multi-use marine park.

Baby beach, Aruba © Carole Martinez

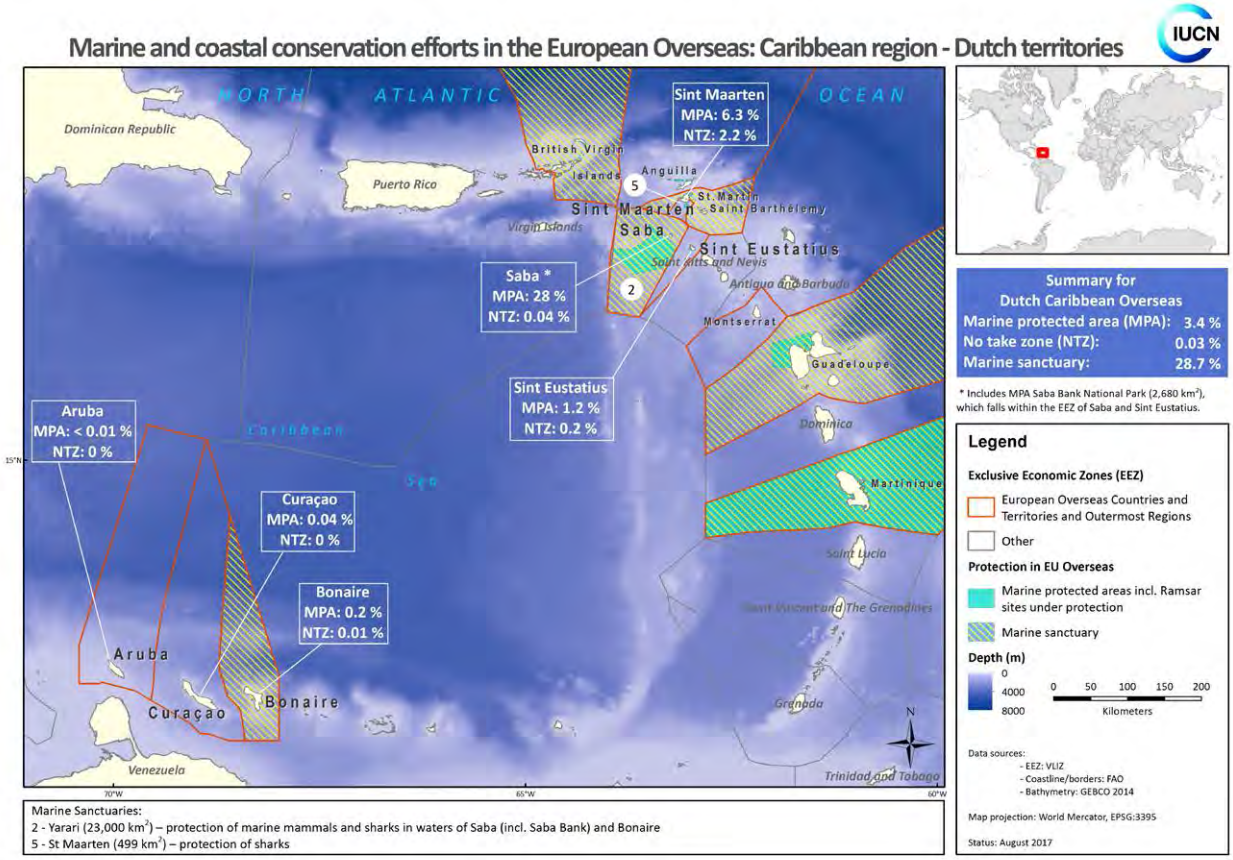
Saba Bank National Marine Park is currently the only offshore MPA that restricts access and extractive uses in the Caribbean EU Overseas. Harbouring the largest submerged atoll (2,200 km²) in the Caribbean Sea and the third largest of its kind in the world, this MPA encompasses a total area of 2,680 km² or 3.3% of the Dutch Caribbean Overseas waters, with 20% located in the territorial waters of Saba, 1% in the territorial waters of St-Eustatius and the rest in the EEZ of the Caribbean Netherlands. In 2012 the International Maritime Organization (IMO) granted the Saba Bank PSSA status (Particularly Sensitive Sea Area) with accompanying measures of No-Anchoring Area (NAA) and Area To Be Avoided (ATBA), based on its biodiversity and importance to local fisheries and its location with-

40 Ramsar sites De Slagbaai and Het Gotomeer, two shallow saline lagoons, were not included for lack of marine connection.

41 As part of the European BEST Initiative, the European Commission financed the BEST 2.0 grant programme, which provides grants (up to 400,000 €) to conservation projects in the OCTs.

in busy shipping lanes. This enabled the Netherlands to legally prohibit international shipping from passing over the Saba Bank or anchoring there, which were causing damage to the biodiversity and fisheries. Although Saba Bank is the largest contiguous MPA in the EU Caribbean Overseas and of the Kingdom of the Netherlands, it covers only 0.4% of all waters belonging to the EU ORs and OCTs Caribbean.

Another comprehensive initiative to marine protection in the Caribbean is the **Blue Halo Initiative** - a collaboration between the Waitt Institute and partner governments - elaborating and implementing science-based, community-driven and balanced solutions for sustainable ocean management. Mapping of marine resources will provide the basis for zoning maps and fisheries management regulations, which shall include establishment of no-take areas to restore fish population and



Map 4: EU Overseas marine and coastal conservation efforts in the Dutch entities of the Caribbean region (Source: IUCN, 2017)

Saba National Marine Park © Jean-Philippe Maréchal

habitats and ultimately, to benefit coastal communities. The initiative will also work out a 5-year implementation plan, scientific monitoring program and a long-term financing strategy for the area. The governments of two EU Overseas entities, Curaçao and Montserrat, have entered into the Blue Halo Initiative so far.

UK Caribbean Overseas: notable efforts regarding ecological networks but still less than 1% of the waters under national jurisdiction

The waters of the **UK Caribbean Overseas entities** harbour 82 MPAs, mostly small coastal areas around Anguilla, the Cayman Islands, Turks and Caicos and the British Virgin Islands.

International & Regional Designations in UK Caribbean Overseas

3 Ramsar Wetland sites (with marine connection)

British Virgin Islands	Western Salt Ponds of Anegada	10.7 km²
Cayman Islands	Booby Pond and Rookery (Little Cayman)	0.8 km²
Turks & Caicos Islands	North, Middle and East Caicos	544 km²

The **Cayman Islands** Marine Parks were established in 1986 and presently encompass 40 small MPAs, including 11 NTZs. Following public consultations, the Cayman Islands Department for Environment presented a first proposal for an enhanced system of Marine Parks to the local population in 2012. The refined Marine Parks enhancement proposal, approved by the Conservation Council in February 2016 and awaiting the final decision by the Cabinet, foresees an increased and improved MPA coverage of up to 40-50%, including larger park sizes for more effective ecosystem-based protection, as well as transferring current Marine Parks into true no-take Marine Reserves[42]. In addition, the Cayman government has been working to conserve marine mammals and sharks as well as their habitats through the Cayman Islands Sharks and Cetaceans Project. George Town Harbor at Grand Cayman was also recently added as a *Mission Blue Hope Spot*. With the aim to engage the public more in marine and terrestrial protection, the Department of Environment (DoE) launched a mobile application in November 2016, which allows the public and officials to enter sightings of important species and report possible conservation law violation in order to assist local enforcement officers in policing marine parks (OCTA Communication, Nov 2016).

In order to protect the fragile coral reefs and seagrass beds of **Anguilla**, the Government established a network of five marine parks (Shoal Bay-Island Harbour, Little Bay, Sandy Island, Prickly Pear East and West, and Dog Island) in the northwest of the island in 1993. A heritage site surrounding the wreck of a Spanish Galleon was also established in the Junk's Hole area. The network was recently expanded by a further Marine Park known as the Sombrero Island Nature Reserve, which was also nominated as Anguilla's first Ramsar site in 2016[43]. A new management plan with simplified zoning for Anguilla's Marine Parks as well as associated fisheries and shallow water habitats is currently revised by the Department of Fisheries and Marine Resources (DFMR) to better reflect the multiple use approach of the areas. In addition to the 7 listed Marine Parks, another site (Rendezvous Bay) was suggested as reef and seagrass species reserve (*personal communication April 2016, Department of Fisheries and Marine Resources, Anguilla*).

Hawksbill turtle hatchling at Merry Wing Bay, Anguilla © Stuart Wynne

The **British Virgin Islands** demonstrate ambitions to designate 40 additional MPAs in their existing MPA network of currently 14 MPAs (plus one Ramsar site), as outlined in a 10-year protected areas system plan (2007-2017). 'The British Virgin Islands Marine Protected Area System Plan' was developed in conjunction with a comprehensive assessment of the existing network of MPAs. The outcome of this comprehensive assessment formed the basis for making the existing network also ecologically representative. This plan was approved by the Government in 2008 to be implemented until 2017 but the designation of areas is still outstanding as the Government wanted a phased approach to site declarations. There are currently two proposals for declaration of MPAs, which are awaiting official decision by the government following the closed public consultations[44]. The areas under consideration for the first proposal would encompass a total surface of 143 km² and include 9 different protected

42 Enhanced Marine Parks Proposal 2015 Consultation Report, prepared by the Department of Environment of the Cayman Islands can be found at: http://www.doe.ky/marine/marine-parks-review/

43 Anguilla's successful Ramsar project

44 BVI National Parks Trust public consultation on addition of marine park or other MPA: http://www.bvi.gov.vg/protected-areas-virgin-islands

area categories from strict nature reserve to management area. In March 2016, highlighting the importance of the protected areas for tourism and the environment, the Government announced their intention to add three more MPAs (totalling 0.68 km^2): Bar Bay habitat management area, Great Thatch protected area, Smugglers Cove and Belmont Estate. Meanwhile, the Government asked the BVI National Trust to begin another public awareness campaign to gain more public understanding, support and buy-in for these new protected areas, which is currently ongoing (*personal communication BVI National Park Trust, June 2017*).

Mangroves on Anegada in the British Virgin Islands © Stewart McPherson

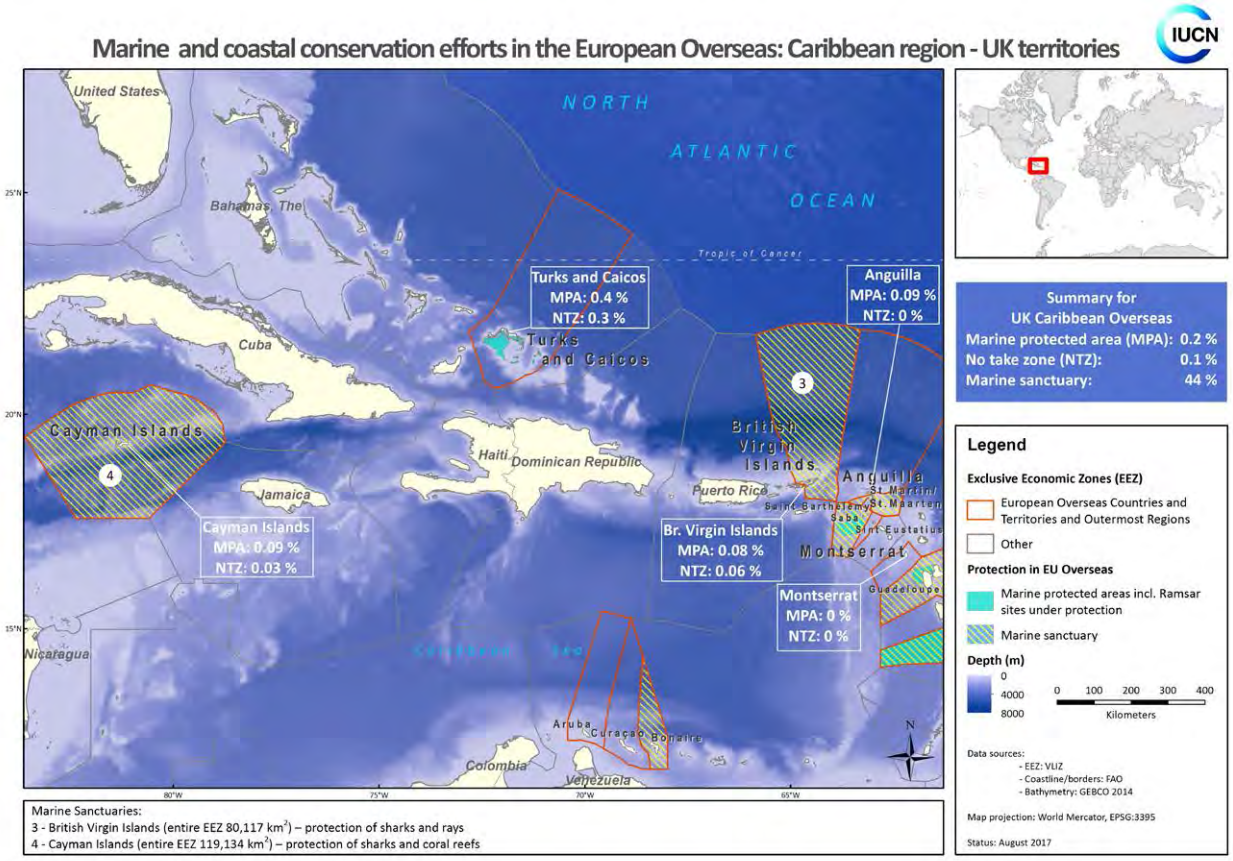
The British Virgin Islands are the only EU Overseas involved in the Caribbean Challenge Initiative aiming at protecting and sustainably managing 20% of the Caribbean marine and coastal ecosystem by 2020. In 2016, the BVI Government also signed the Hamilton Declaration, a non-binding political statement, committing to protect and regulate the Sargasso Sea, an area beyond national jurisdiction in the Wider Northern Atlantic encompassing 4.1 million km^2 of floating seaweeds.

Over 70% of the MPAs in the UK Caribbean Overseas are located in the **Turks and Caicos Islands (TCI)**, who is currently expanding the boundaries of the 20 existing MPAs in their waters to create a more ecological coherent network of protected waters. Consultations on the new boundaries are concluded and the proposed amendments are at approval stage. Turks and Caicos Islands are also listed as tentative World Heritage Site. There have been consultations on creating a shark sanctuary.

Tern & pelican on the coasts of Turks and Caicos Islands © Eric F. Salamanca

The marine environment of **Montserrat**, the smallest of the UK Caribbean Overseas entities, has been significantly changed during the eruptions of *Soufrière Hills* volcano since 1995, resulting in over 50% of reef loss, particularly in the Southwest of the island. Following the eruptions, a maritime exclusion zone was established for safety reasons. As part of the Blue Halo Initiative the Waitt Institute launched an ecological assessment for the marine areas in 2015. Preliminary results of the underwater habitats and species mapping revealed that many fish had initially migrated to deeper waters due to the destruction of inshore reef by lava and cover with volcanic ash. However, silt covered maritime exclusion zone may also provide a hotspot for some species. The results of this assessment will inform policy makers and future maritime spatial planning. The Blue Halo Initiative is also looking into establishing marine protected areas in cooperation with local fishermen (*personal communication April 2016, Montserrat Government*). In 2013, Coral Cay Conservation set up a "*ridge to reef*" project on the island with a holistic approach in partnership with the Ministry of Agriculture, Trade, Land, Housing and Environment and the RSPB in order to help monitor birds, reptiles, amphibians and invasive plants, and carry out surveys of marine life. The project is recruiting marine and terrestrial project volunteers that help with scientific research, creation of environmental management plans and training and education of locals.

Despite numerous small MPAs, less than 1% of the **UK Caribbean Overseas Territories' waters are currently under protection and a wider cooperative network approach between the UK** Overseas Territories and neighbouring countries is yet to be established.



Map 5: EU Overseas marine and coastal conservation efforts in the UK Overseas Countries and Territories of the Caribbean region (Source: IUCN, 2017)

French Overseas in the Caribbean: a growing number of marine conservation efforts to be further articulated

The MPA strategy of the **French Antilles** is defined by the French MPA agency[45] (*AAMP - Agence des aires marines protégées*) in close collaboration with the French Caribbean entities. Between 2009 and 2013 the French MPA agency conducted regional strategic analyses in Martinique and Guadeloupe to support further establishment of MPAs in these ORs, particularly in **Martinique** with a marine park, which was officially created in March 2017 as a multiple-use MPA. This third marine park in the French ORs and second largest after Mayotte covers the entire EEZ, including coastal benthic habitats for natural heritage conservation and sustainable development objectives. In addition to the marine park, there is a national and a regional natural reserve with coastal protection.

45 Now part of the French agency for biodiversity (*AFB - Agence Française pour la Biodiversité*)

International & Regional Designations in French Caribbean Overseas

3 Ramsar Wetland sites (with marine connection)

Guadeloupe	Grand-Cul-de-Sac Marin	295 km²
Martinique	Etang des Salines	2.1 km²
Saint Martin	Zones humides et marines de Saint-Martin	30 km²

5 marine sites under SPAW Protocol

French Antilles	Agoa Sanctuary	143,256 km²
Guadeloupe	National Park of Guadeloupe	1344 km²
	Petite-Terre National Reserve	9 km²
Saint Martin	Réserve Naturelle Nationale de Saint-Martin	31 km²
	Etangs Lagunaires de Saint-Martin	2 km²

1 Man and Biosphere (MaB)

Guadeloupe	Archipel de la Guadeloupe	150 km² (marine)

A number of the 48 small islands around the main island are designated nature reserves[46], biotopes[47] or maritime public domains (under *Conservatoire du Littoral*). Throughout the EEZ of Martinique marine turtles are protected. Four marine conservation projects have been under discussion for Martinique: while a public survey on extending the National Nature Reserve of Presqu'Ile de la Caravelle is currently underway, plans to extend the National Nature Reserves of Saint-Anne and establishing another mangrove nature reserve of over 30 km^2 in the Bay of Génipa were not further pursued due to a lack of consensus. Martinique is also working to be listed as a Man and Biosphere reserve[48].

Porte d'enfer, Guadeloupe © Carole Martinez

Within the waters of the **French Antilles**, Martinique and **Guadeloupe** protect coastal and offshore pelagic ecosystems. Covering an area of 1,308 km^2 northwest of Guadeloupe, the adjacent maritime areas of the Guadeloupe National Park were listed under the SPAW Protocol. The Grand Cul-de-Sac Marin lagoon, located within these adjacent maritime areas, was designated as Ramsar site in 1993. The lagoon includes the Grand Cul-de-Sac Marin Nature Reserve, a group of protected no-take zones that are part of the core zone of the Guadeloupe National Park. The Guadeloupe National Park and the Grand Cul-de-Sac Marine Nature Reserve achieved international recognition as UNESCO Man and Biosphere Reserve.

Coastal conservation efforts in the French Antilles © Romain Renoux

The only natural national reserve in **Saint Barthélemy** protects 5% of the territorial waters or 0.3% of the waters under national jurisdiction. In **Saint Martin** the fully protected no-take MPA, representing less than 3% of waters under its national jurisdiction, also includes a Ramsar wetland site.

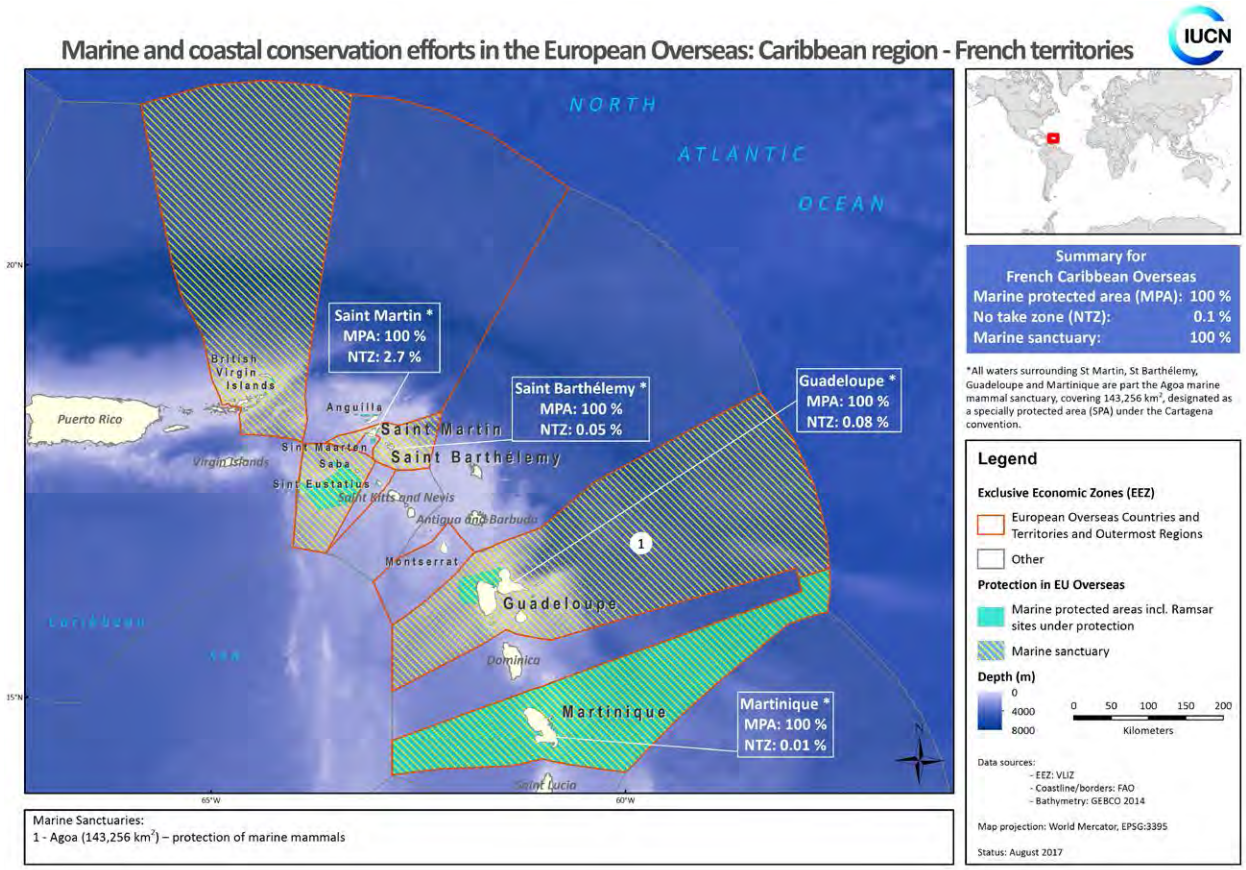
The French Biodiversity Law from 2016 includes a new action plan aiming at protecting 75% of the coral reefs by 2021. In April 2017, an order listed 16 species of corals in the waters of Guadeloupe, Martinique and St Martin as protected.

Staghorn coral (*Acropora cervicornis*) © Kathleen McNary Wood

46 Réserve naturelle nationale de Presqu'île de la Caravelle (1976), Réserve naturelle nationale de Îlets du Sainte Anne (1995)

47 Protection by order through regional Direction of Environment (*arrêté préfectoral de Protection de Biotope - APB*, 2003; *arrêté ministériel*, 2007)

48 A project to support the nomination as UNESCO MaB reserve was announced in July 2017.



Map 6: EU Overseas marine and coastal conservation efforts in the French Overseas entities of the Caribbean region (Source: IUCN, 2017)

EU Overseas conservation efforts in the Caribbean: connectivity and complementarity to be strengthened

Most MPAs across the Caribbean EU Overseas are located in coastal waters. The designation of five large marine mammal and shark sanctuaries within the Caribbean is based on these observations. The establishment of offshore and large combined coastal-offshore MPAs in the Caribbean, such as Saba Bank and Martinique's EEZ-wide marine park, is definitely a notable step to significantly improve the spatial conservation throughout the Caribbean waters and better take connectivity between ecosystems into account. Nevertheless, connectivity between coastal and marine ecosystems should be better analysed at the regional level in order to foster links and cooperation between existing and future protected areas listed under the SPAW Protocol, to strengthen the regional network of protected areas and complementarity of the different protected areas as well as other effective conservation measures.

To improve the efforts towards connectivity and complementarity, the European BEST Initiative is supporting both territorial and regional marine projects in the Caribbean region[49] that foster cooperation and experience sharing on endangered species protection[50], conservation and restoration of critical coral reef ecosystems[51], wetland conservation[52], creating marine protected areas[53] as well as invasive alien species eradication and control[54] - measures that necessarily require cooperation and coordination of efforts.

49 Factsheets for all projects in the Caribbean region funded under the European BEST Initiative can be found on the BEST website and the BEST 2.0 portal. Projects include:

50 Endangered species protection: Saving sea turtles of Anguilla.

51 Conservation and restoration of coral reefs: Conservation, management and monitoring of East Caicos KBA's corals and coast, restoration ecosystem services and coral reef quality (RESCQ), rehabilitation of threatened coral communities (Curaçao).

52 Wetland conservation and management: MANG project (French Antilles, French Guiana, Mayotte)

53 Marine protected area creation: Marine Park Aruba,

54 Lionfish eradication and control measures: Lionfish mapping to improve management (Cayman Islands), elaborating lionfish control strategies for St Barthélemy.

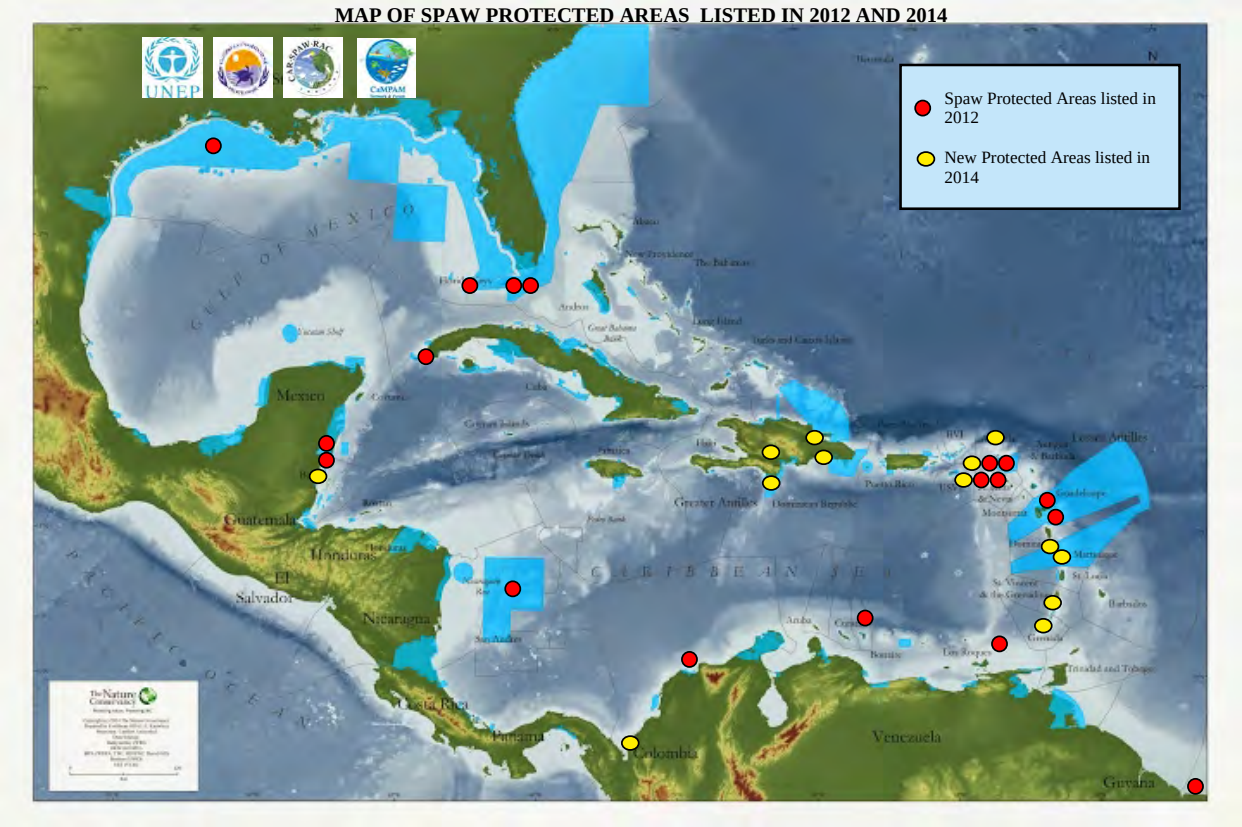
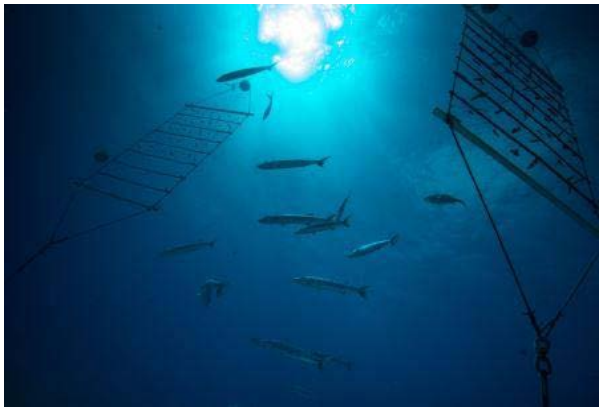


Figure 12: Map of SPAW protected areas (source: SPAW RAC, 2014)



Coral ladders with fragments for reef restoration in Sint Maarten visited by schools of barracudas, BEST RESCQ project © Erik Meesters

Marine mammal and shark sanctuaries

The Wider Caribbean region is a special habitat for feeding, reproduction and migration of at least 32 recorded marine mammal species, which have significant ecological, cultural and economic value to the countries and territories in this region.

Caribbean marine sanctuaries - part of an international marine mammal protected areas network

There are currently two marine mammal sanctuaries covering a quarter of all EU Caribbean Overseas waters. Both belong to the first international Marine Mammal Protected Areas Network formed by partners of the Sisters Sanctuary Program[55], protecting the endangered Humpback Whale along its migration route from the northeast coast of the US all the way down to the French Antilles at the Caribbean's south-eastern edge: the Agoa marine mammal sanctuary (143,256 km^2), encompassing the combined EEZ of the French Antilles (Guadeloupe, Martinique, St. Martin and St. Barthélemy), and the Caribbean Netherlands' Yaraari Marine Mammal & Shark Sanctuary (23,000 km^2), covering the EEZs of the Dutch Caribbean territories Saba and Bonaire.

55 The Marine Mammal Protected Area Network was formed by partners of the Sisters Sanctuary Program

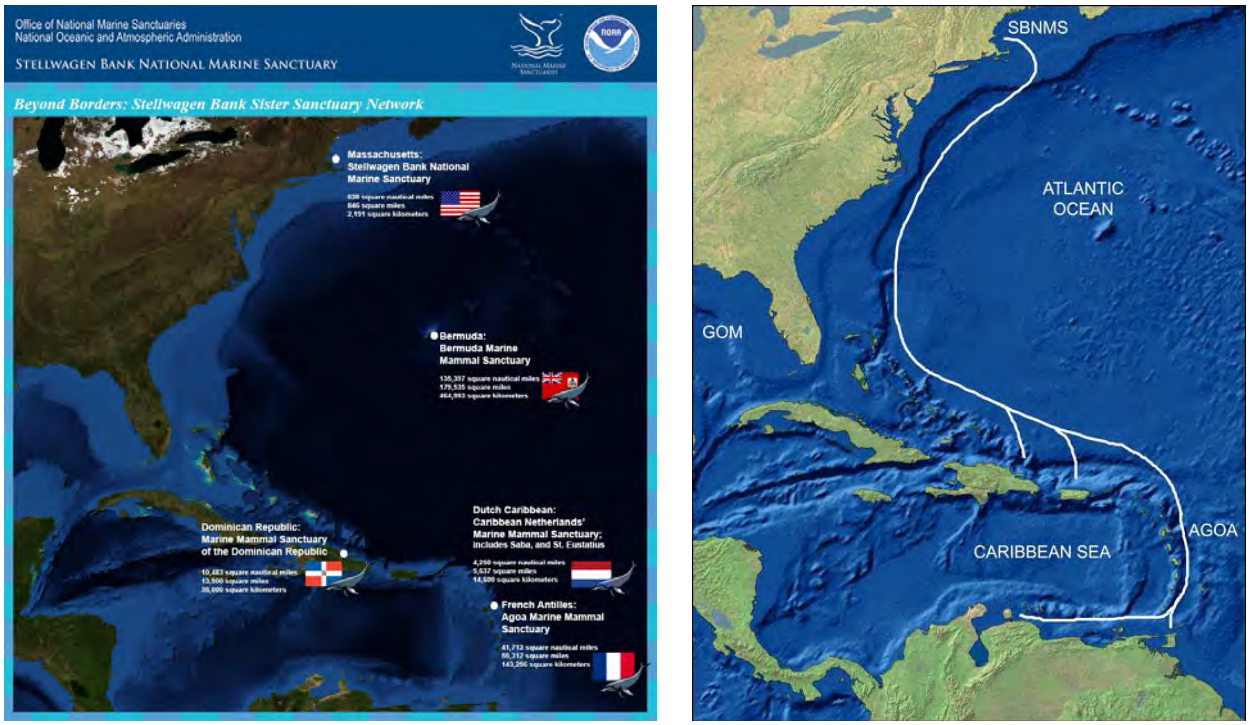


Figure 13: (a) Map of the Marine Mammal Protected Area Network along the migration route of the endangered Humpback Whale in the Wider Caribbean area, encompassing three Marine Mammal Sanctuaries in EU Overseas waters of Bermuda (UK), the Dutch Caribbean and the French Antilles. Source: Carib Tails
(b) Migration route of the North Atlantic Humpback whale. Source: NOAA, Office of National Marine Sanctuaries

The AGOA sanctuary set out five action principles in its declaration:

1. Restrict negative interactions between human activities (direct or indirect, potential or known) and marine mammals and find innovative ways of limiting the impact these activities have.
2. Enhance knowledge of marine mammal populations and their habitats and of potential or known human induced pressures and threats facing these species.
3. Disseminate knowledge (information, awareness raising, education) and promote the AGOA sanctuary, marine mammals and the marine environment in general.
4. Implement the resources required to monitor the sanctuary within the framework of pooling State resources.
5. Cooperate with the other States in the Caribbean and particularly with the Parties to the Cartagena Convention and its Protocol on Specially Protected Areas and Wildlife (SPAW) as well as States sharing marine mammal populations, to foster the introduction of conservation and management measures that are coherent with those of the AGOA sanctuary.

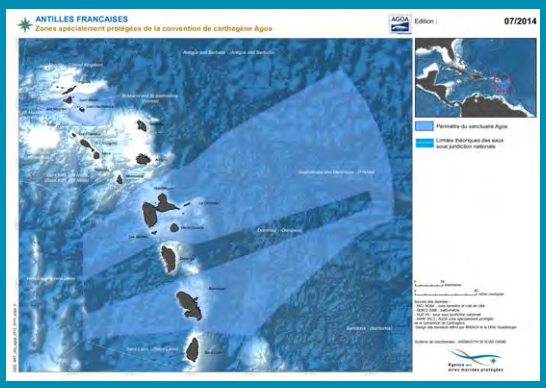


Figure 14: Map of the AGOA marine mammal sanctuary, covering all territorial waters and exclusive economic zones (EEZs) surrounding Martinique, St. Barthélemy, St Martin, Guadeloupe and its dependencies. Source: Agence des aires marines protégées (AAMP).

In 2010 the French Government declared the designation of the **Agoa[56] marine mammal sanctuary** at the SPAW Conference of Parties to ensure the protection of both, marine mammals and their habitats in waters under French sovereignty from the direct or indirect, potential or proven, adverse impacts of human activities.

Officially declared in 2012 at the SPAW Conference[57] of Parties the Agoa marine mammal sanctuary in the French Antilles encompasses all territorial waters and the EEZ, which covers 21% of the EU Caribbean Overseas waters. A first 5-year management plan[58] was endorsed the same year. The management body and board were set up two years after in 2014. According to the French law the Agoa sanctuary is an MPA, which was created for the implementation of international and regional instruments[59].

Humpback whales in Agoa marine mammal sanctuary © AAMP

Instead of new regulations, the Agoa marine mammal sanctuary management plan developed eight management orientations that are implemented through annual programmes. In addition, the management board can prepare proposals for government authorities concerning the supervision or regulation of activities that negatively impact marine mammals. The governance body of Agoa is composed of 53 members, representing the diversity of the islands of Guadeloupe, Martinique, Saint-Martin and Saint-Barthelemy and their sea stakeholders: local and national authorities, professional fishermen, leisure users, tourism businesses, environmental protection societies (NGOs), experts and government services. While primarily dedicated to local governance the protection of marine mammals goes beyond national borders taking into account the great mobility of these species. Agoa established an open approach, fostering necessary regional and international cooperation with existing and future sanctuaries in Caribbean waters. Agoa is the first designated Specially Protected Area and Wildlife Protected Area and to date, the second largest French marine protected area after the Coral Sea Natural Park in New Caledonia.

In September 2015 the Dutch State Secretary declared the establishment of the **Yarari marine mammal & shark sanctuary**, named after the Taino Indian word *Yarari'* for a 'fine place'. This sanctuary encompasses the EEZs around Saba and Bonaire islands. In addition to Humpback Whales (*Megaptera novaeangliae*, LC) more than twenty other species of whales and dolphins live in the area, including Orcas (*Orcinus orca,* VU) and Sperm Whales (*Physeter macrocephalus*, DD). The presence of sharks, besides being a great attraction for divers, is key for keeping healthy and resilient coral reefs and fish populations. The declaration does not impose additional regulatory restraints on fisheries, but allows the Executive Council to implement measures when necessary. By joining the marine mammal protected areas network established by the Sisters Sanctuary Program[60], the Yarari sanctuary contributes to international and regional marine conservation efforts and closes the migration route of Humpback and other whales, which often migrate thousands of kilometres from cold northern waters in summer to the tropical Caribbean Sea in winter.

Transboundary and ecosystem-based marine mammal conservation efforts

Transboundary and regional cooperation is thus necessary for effective protection and constitutes a pillar of the Action Plan for the Conservation of Marine Mammals (MMAP) in the Wider Caribbean developed in 2008 under the SPAW Protocol and is defined both as a long-term objective and a priority action[61].

56 The name refers to "Mai Agoa", the goddess or spirit of the water in Amerindian legends.

57 SPAW COP7, Decisions of the meetings, 23rd October 2012, Punta Cana, Dominica,

58 Plan de gestion du sanctuaire Agoa 2012-2017

59 Arrêté du 3 juin 2011 portant identification des catégories d'aires marines protégées entrant dans le champ de compétence de l'Agence des aires marines protégées, JORF n°0155 du 6 juillet 2011 page 11719 art.1.

60 The "Beyond Borders" North Atlantic Humpback Whale Sister Sanctuary Network includes the Marine Mammal Sanctuaries of Stellwagen Bank National along the coast of Massachusetts (2,180 km^2), Bermuda (464,993 km^2), the Dominican Republic (32,879 km^2), Yarari (23,000 km^2, EEZs of Bonaire and Saba) and Agoa (143,256 km^2, combined EEZs of the French Antilles).

61 The MMAP includes the following priority action: By mutual agreement among the Contracting Parties involved, design and declare marine protected areas and other management regimes, that maintain ecological connections (e.g. sister sanctuaries that promote the protection of transboundary assets) with user and stakeholder involvement and participation, (Action Plan for the Conservation of Marine Mammals, 2008; 2.4 Protected Areas and Other Management Regimes for Population Recovery).

In addition, a LIFEWEB project "Broad-scale Marine Spatial Planning (MSP) of Marine Mammal Corridors and Protected Areas in Wider Caribbean and Southeast & Northeast Pacific" was launched by the Cartagena convention and the SPAW RAC in 2010. The project's objective was to assist the countries in developing and applying cross-sectorial ecosystem approaches for management of areas and protection of marine mammals in both regions. Activities included mapping of critical marine mammal habitats and regional-scale migration routes, as well as socio-economic information on human activities. The mapping works constituted the first comprehensive attempt in the Wider Caribbean to spatially delineate habitat suitability for 25 marine mammal species and threats by human activities with key associated socio-economic aspects. It also provided crucial information for the application of MSP (MarViva, 2014)[62]. Critical areas, focal areas and scenarios, recommendations were identified thanks to this regional project, which brought together both Caribbean independent countries and EU Overseas.

Acknowledging that important areas have been declared as marine mammal sanctuaries in the region, the conclusions of the scenario report (MarViva, 2014) advocate for going further with stricter conservation categories (IUCN Categories I, II). A network of new sites was defined as a priority to ensure habitat protection that would complement the existing protected area system by addressing potential use-habitat conflicts and adding areas where high concentration of marine mammals is known in the region.

Complementary sharks and rays conservation efforts

In addition to marine mammals, several Caribbean islands established **shark and ray sanctuaries**. In May 2014, after 11 years of marine mammal protection in its fisheries waters (VI Fishery Regulations, 2003; Sec. 29), the British Virgin Islands created a shark and rays sanctuary in its entire EEZ (over 80,000 km^2), which is home to at least 23 species of sharks. After Honduras and The Bahamas, which declared shark sanctuaries in 2011, BVI was the third Caribbean territory to fulfil on its commitment during the Caribbean Challenge Initiative[63] on regional protection for sharks and thereby strengthen its marine ecosystems, including reefs for a healthier ocean. In June 2016, the governments of the Cayman Islands and Sint Maarten closed their entire EEZ, combined almost 200,000 km^2, to commercial shark and ray fishing. Curaçao announced it would work on the establishment of a shark sanctuary in its waters (PEW press release, 15 June 2016) and discussions for establishing a shark sanctuary in Turks and Caicos Islands are ongoing. In March 2017, the international SPAW Protocol listed five shark and three ray species for protection (CEP-UNEP announcement of milestones).

Protection of reef shark populations in Caribbean shark sanctuaries © Stuart Wynne

Together, the five shark and marine mammal sanctuaries cover more than half of the Caribbean waters.

High Seas MPAs

There are currently no High Seas MPAs in the Caribbean region.

Brown boobies, Anguilla © Stewart McPherson

62 Report on the LifeWeb-Spain UNEP-CEP Meeting: UNEP(DEPI)/CAR WG.36/INF.8, 2014.

63 Caribbean Challenge Initiative is a coalition of governments from 9 island nations and territories, companies and partners committed to conserve at least 20% of the nearshore and coastal environments by 2020.

Territories

Greenland

Saint Pierre and Miquelon

ARCTIC AND SUB-ARCTIC REGION

Greenland © Florian Ledoux

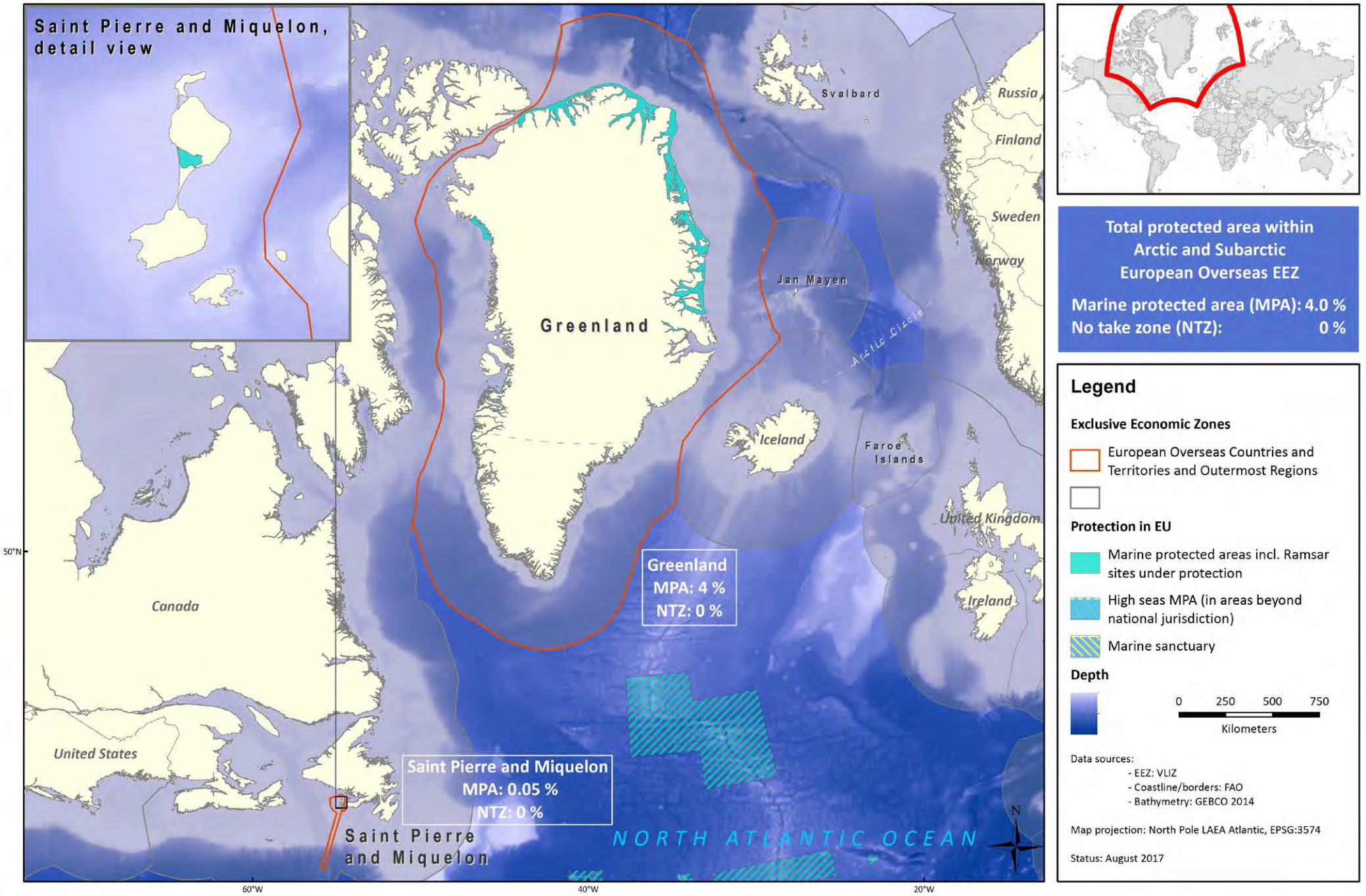
Local nature guard, Sermiligaaq, Greenland © Elmer Topp-Jorgensen

Polar bear in the Arctic © Florian Ledoux

Orca, St Pierre & Miquelon © Joël Detcheverry

Greenland © Daniel Mitchell

Marine and coastal conservation efforts in the European Overseas: Arctic and Subarctic Region



Map 7: EU Overseas marine and coastal conservation efforts in the Arctic and subarctic region (Source: IUCN, 2017)

1.3. ARCTIC AND SUBARCTIC REGION

Regional overview

International Recognitions of Arctic and Sub-arctic EU Overseas' Marine Biodiversity

2 Ecologically or Biologically Significant Marine Areas (EBSAs) in Areas Beyond National Jurisdiction

Multi-year Ice of the Central Arctic Ocean

The Marginal Ice Zone and the Seasonal Ice-Cover Over the Deep Arctic Ocean

4 Large Marine Ecosystems (LMEs)

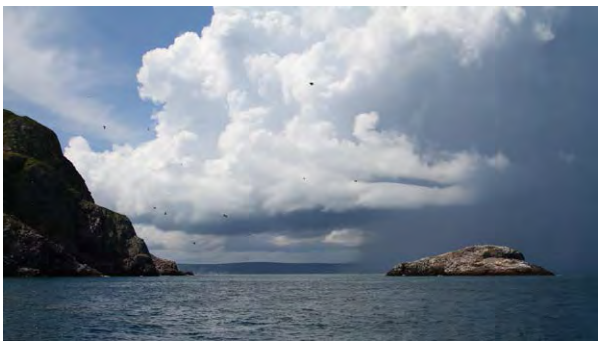
Newfoundland-Labrador Shelf **(incl. St Pierre & Miquelon, LME 9)**

Canadian Eastern Arctic - West Greenland **(LME 18)**

Greenland Sea **(LME 19)**

Canadian High Arctic - North Greenland **(LME 66)**

The Arctic and subarctic region currently hosts 18 large marine ecosystems (LMEs), four of which include EU Overseas waters[64]: Canadian Eastern Arctic - West Greenland (LME 18), Canadian High Arctic – North Greenland (LME 66) and the Greenland Sea (LME 19) along Greenland's West and East coast, respectively, characterised by a subarctic climate and seasonal ice cover; and the Newfoundland-Labrador Shelf (LME 9) off the eastern coast of Canada, including Saint Pierre and Miquelon. Intensive fishing and climate change are the main drivers for changes in all four LMEs.



Colombier, Saint Pierre and Miquelon © Joël Detcheverry

Situated in the subarctic and Arctic region are Greenland (under Denmark) - the largest island in the world, 75% covered by a permanent ice sheet - and Saint Pierre and Miquelon (France), an archipelago of three main islands and several islets in the north-western Atlantic Ocean off the Eastern coast of Canada, which are both scarcely populated. Fishing as the main industry is the most important human activity in this region.

Greenland's ice cover represents about 80% of all of the ice outside of Antarctica. Large glaciers and fjords transport the melting ice from the ice sheet to the Arctic Ocean. The Ilulissat Icefjord of over 400 km^2 on the west coast was declared a UNESCO World Heritage Site[65] in 2004 for its huge ice sheet and the fast moving glacial ice-stream calving into a fjord and benefits from an extensive management plan and monitoring programme for its protection[66]. A recent scientific assessment of the Arctic Ocean identified 7 marine sites for potential nomination on the World Heritage List, two of which within the EEZ of Greenland (Disko Bay and Store Hellefiskebanke; The Scoresby Sound Polynya) and another two that include the northern waters of Greenland (Remnant Arctic Multi-Year Sea Ice and the Northeast Water Polynya Ecoregion; Northern Baf-

64 The boundaries of the Arctic LMEs were revised in 2012 in a consultative process including agencies of Arctic Council Member States and other work groups (report on the revision, 2013).

65 Kujataa (Greenland) was inscribed to the World Heritage List in 2017 as a cultural site (for its unique farming traditions) and is therefore not mentioned here.

66 Global assessment of values, threats, protection and management as part of the IUCN World Heritage Outlook rated the conservation outlook of Ilulissat Icefjord WHS good with some concerns.

fin Bay Ecoregion). In addition to proposing these sites for the WHS Tentative List, in which the Arctic is currently underrepresented, the report also recommends enhanced protection and a wider evaluation of marine conservation values in the Arctic, including the High Seas (IUCN, 2017b).

Iceberg near Nuuk, Greenland © Claire-Sophie Azam

Characterized by seasonal extremes in solar irradiance, ice cover, associated atmosphere exchanges, Arctic marine ecosystems differ from other marine ecosystems on the planet. Despite inhospitable conditions, the Arctic Ocean is a region of high biological productivity and an abundance of marine life, which is economically important not only for fisheries. However, the Arctic Ocean is also highly sensitive to environmental changes. Main threats to the biodiversity and its low number of endemic species come from global warming, whose impacts are being primarily documented in Greenland with a tremendous decrease of ice cover (both sea-ice and land ice) over the last decades. Such decrease is notably responsible for smaller distribution areas of a number of animal species, including already threatened and/or endemic sea-ice specialist species.

The increasing and cumulative pressure on the Arctic marine ecosystems from climate change and ocean acidification to long-range pollution, invasive alien species and increased human activities are more and more acknowledged as a challenge to the health and sustained viability of Arctic marine ecosystems. The trans-boundary nature of those stressors intensifies the need for international and regional cooperation for action. The European Commission Joint Communication to the European Parliament and the Council "An integrated European Union policy for the Arctic" stresses this critical need for cooperation stating that "The preservation of biodiversity and the viability of ecosystems in the Arctic will remain a global challenge". The EU Arctic policy proposes three priority areas: (1) Climate Change and Safeguarding the Arctic Environment, (2) Sustainable Development in and around the Arctic, and (3) International Cooperation on Arctic Issues. However, the cascading effect of interconnected changes across highly dynamic geophysical, ecological and socio-economic systems are neither fully understood nor addressed.

Regional agreements

Unlike for the Austral Ocean surrounding the Antarctic, neither a treaty nor regional sea convention exist for the Arctic Ocean. However, a dedicated **Arctic Council** was established in 1996 as a voluntary, high-level intergovernmental forum bringing together the eight Arctic countries[67] to promote cooperation, coordination and interaction among the Arctic States with the involvement of Arctic inhabitants, including Arctic indigenous peoples on common Arctic issues, in particular issues of sustainable development and environmental protection in the Arctic.

In 2002, the Arctic Council agreed to develop the first Arctic Marine Strategic Plan for the protection of the Arctic marine environment, which was published in 2004. Ten years later, taking into account the speed and spectrum of Arctic changes, the Working Group for the **Protection of the Arctic Marine Environment (PAME)** in cooperation with the Arctic Council members, its subsidiary bodies and observers, developed a new marine strategy that includes both short-term and long-term challenges and opportunities, through 40 Strategic Actions comprised under four Strategic Goals (see box).

In addition, PAME defined a *Framework for a Pan-Arctic Network of Marine Protected Areas* (MPAs) with a common vision for international cooperation in MPA network development and management: "*An ecologically connected, representative and effectively-managed network of protected and specially managed areas that protects and promotes the resilience of the biological diversity, ecological processes and cultural heritage of the Arctic marine environment, and the social and economic benefits they provide to present and future generations*" (PAME, 2015b). Besides a set of jointly agreed common principles, goals and objectives for the protection of the Arctic Ocean this report also defines near-term actions (2015-2017) and long-term actions (2015-2020). These have proven useful for the MPA related work of PAME.

67 Canada, Denmark (for Greenland and the Faeroes), Finland, Iceland, Norway, Russia, Sweden and the USA (for Alaska)

The four goals of the Arctic Marine Strategic Plan 2015-2025 (extracted from PAME, 2015a):

Goal 1: Improve knowledge of the Arctic marine environment, and continue to monitor and assess current and future impacts on Arctic marine ecosystems.

Goal 2: Conserve and protect ecosystem function and marine biodiversity to enhance resilience and the provision of ecosystem services.

Goal 3: Promote safe and sustainable use of the marine environment, taking into account cumulative environmental impacts.

Goal 4: Enhance the economic, social and cultural well-being of Arctic inhabitants, including Arctic indigenous peoples and strengthen their capacity to adapt to changes in the Arctic marine environment.

Extract of strategic action 7.2.4 (PAME, 2015a):

Encourage the Arctic states to implement appropriate measures, – or to pursue such measures at relevant international organisations to protect Arctic marine Areas of Heightened Ecological and Cultural Significance. Focus should be on species and ecosystems particularly at risk from climate change and cumulative impacts, including areas of refuge for ice-associated species that are, or are expected to become particularly important to Arctic marine biodiversity under future climate conditions.

In 2016, 4.7% of the Arctic marine area (860,000 km^2) was considered protected, which is four times more than in 1980 but - according to a recent CAFF/PAME report – still *"falls short"* of Aichi Biodiversity Target 11 of protecting at least 10% of coastal and marine areas (CAFF/PAME, 2017). The difficulty to access data makes it quite challenging to obtain any regional overview, analysis and understanding of progresses.

Within the Arctic EU Overseas, most of the marine protected areas are part of the Northeast Greenland National Park, which still lacks a management plan and comprehensive monitoring and is open to almost any mining exploration program (*personal communication 2017, GREA - Groupe de Recherches en Écologie Arctique).*

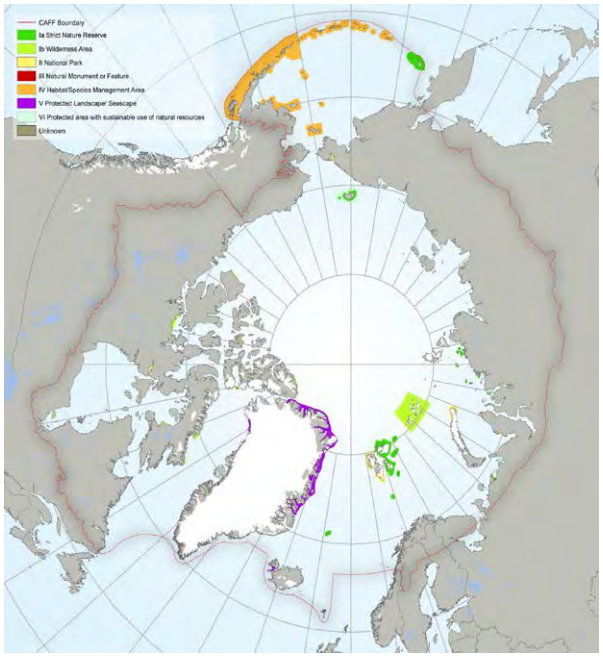


Figure 15: Map of marine protected areas in the Arctic classed after their IUCN category, 2016 (CAFF/PAME, 2017)

One part of the Greenland marine domain is also covered by the OSPAR convention (see chapter on North Atlantic). According to the OSPAR 2017 Intermediate Assessments, the OSPAR MPA network covered only 1.9% of the Arctic OSPAR maritime area, none of which in EU Overseas waters. The assessment highlights remaining substantial gaps in ecological coherence of the OSPAR MPA network within the Arctic waters.

International Cooperation & Regional Fisheries Bodies

Both, Greenland and Saint Pierre and Miquelon, are parties to the North Atlantic Salmon Conservation Organization (NASCO), an international organisation established by an inter-governmental Convention in 1984 for the conservation, restoration, enhancement and rational management of the Atlantic salmon stocks through international cooperation and best available scientific information. Greenland participates in the North Atlantic Fisheries Organization (NAFO) and advises on optimal management and conservation of fisheries resources, such as shrimp and Greenland halibut. Greenland along with other states committed to sustainable and responsible use of all living marine resources including marine mammals through the regional cooperation North Atlantic Marine Mammal Commission (NAMMCO). The NAMMCO Agreement, signed in 1992, focuses on consolidating and advancing scientific knowledge of the North Atlantic marine ecosystem as a whole, and understanding better the role of marine mammals in this system. As part of a NAMMCO scientific working group, the Joint Committee for Narwhal and Beluga (JCNB), Greenland and Canada provide biological and management advice for narwhal and beluga whale populations in the realms of their waters. Via Denmark Greenland - where traditional whale hunting occurs - is

represented in the International Whaling Commission (IWC), which aims to ensure proper and effective whale stock conservation and management through the establishment of a system of international regulations. Greenland (through Denmark) is a contracting party to the North East Atlantic Fisheries Commission (NEAFC), which entered in force in 1982. As member of several expert groups in the International Council for Exploration of the Sea (ICES) Greenland informs policy makers of commercially exploited marine species.

Greenland © Michael Køie Poulsen

lishing marine protected areas in the Arctic, these areas being an important element in the effort to preserve biodiversity"[68]. None of the EU Overseas Arctic MPAs are no-take, as extraction of minerals is allowed in all its waters.

Sperm whale in Nuuk fjord, Greenland © Helle Jørgensbye, Marine Photobank

With almost 1 million km² the Northeast Greenland National Park is currently the largest and most northerly national park in the world and includes over 88,000 km² of marine protected area (almost 10% of the park), extending from the coastline to the territorial waters. Towards the Arctic Ocean and the Greenland Sea the border runs three nautical miles off the baseline, i.e. the line connecting the extreme points of the coast. Established in 1974 as the first national park of the Kingdom of Denmark and extended westwards in 1988, it still remains Greenland's only national park. Greenland has no strictly offshore MPA. Ten coastal areas are designated Ramsar Wetlands, whose marine part covers 1,375 km².

	EU Overseas waters area km²	Coastal and marine protected areas (MPAs)			No-take zones (NTZs)			Marine mammal /shark sanctuary km²
		Number	Areas (km²)	% of waters area	Number	Area (km²)	% of waters area	
Saint Pierre and Miquelon (FR)	12,423	1	6	0.05	0	0	0	No
Greenland (DK)	2,353,703	15	95,005	4.0	0	0	0	No
Total Arctic and Subarctic region	**2,366,126**	**16**	**95,011**	**4.0**	**0**	**0**	**0**	**No**

Table 3: EU Overseas coastal and marine protected areas in the Arctic and subarctic region, including Ramsar sites under protection, marine World Heritage Sites (WHS) and Man and Biosphere Reserves. A list of individual protected area designations of this region can be found in Annex 3.

EU Overseas coastal and marine protected areas in the Arctic and subarctic region

EU Overseas MPAs in the Arctic and subarctic region are predominantly located at Greenland's coasts and cover an area of 95,011 km² or 4% of the combined EU OCT Economic Exclusive Zone of this region - quite far behind the CBD Aichi target of 10%. The development of a dedicated integrated EU Policy for the Arctic, adopted in 2016, was an important step that should be followed up for the other marine regions where the EU Overseas are located. In a 2016 Joint Communication, the European Commission recommends that *"The EU should also work with partners to promote a high level of biodiversity protection with a view to halting the loss of biodiversity and achieving the global biodiversity 2020 targets. The EU should promote estab-*

68 European Commission, Joint communication to the European parliament and the Council, An integrated European Union policy for the Arctic; JOIN (2016) 21 final; p.7.

The European BEST initiative has supported two marine conservation projects in Greenland addressing the conservation of benthic habitats in West Greenland as well as biodiversity and sustainable use of marine resources creating multiple benefits for local communities in Greenland (PISUNA project)[69].

International & Regional Designations in Arctic and Sub-arctic EU Overseas (all in Greenland)

10 Ramsar Wetland sites (with marine connection)

Name (% marine)	Marine area
Kitsissunnguit /Grønne Ejland (88%)	60.8 km²
Ikkattoq and adjacent archipelago(50%)	224.4 km²
Qinnquata Marra and Kuussuaq (28%)	18.1 km²
Naternaq (Lersletten) (16%)	294.4 km²
Aqajarua (Mudderbug) (20%)	44.7 km²
Eqalummiut Nunaat & Nassuttuup Nunaa (5%)	289.8 km²
Kitsissut Avalliit (Ydre Kitsissut) (96%)	42.9 km²
Heden (Jameson Land) (5%)	126.2 km²
Hochstetter Forland (7%)	129.4 km²
Kilen (28%)	143.6 km²
	1,374.3 km²

1 Natural World Heritage Site (with marine connection)*

Ilulissat Icefjord (9.5%)	384 km²

1 Man and Biosphere Reserve (MaB)

North-East Greenland (9.1%)	88,237 km²

* Kujataa (Greenland) was listed as cultural to the World Heritage site in 2017 (see footnote 71).

In Saint Pierre and Miquelon, the Miquelon Langlade Isthmus became a property of the Conservatoire du Littoral aiming to protect both dunes and the lagoon. The area is managed by the Municipality of Miquelon-Langlade on the basis of a management plan adopted in 2011. Presently, there are 13 sites protected as seabird breeding areas in coastal regions, which may increase to 40 upon revision of the Executive Order for protection and hunting of birds. An application as a Ramsar wetland was submitted for the Grand Barachois lagoon.

The European BEST Initiative has supported marine conservation efforts in Saint Pierre and Miquelon which identified marine areas on Grand Columbier Island used by several seabird populations of international importance for breeding for breeding and defined relevant management measures to help maintain a sufficient food supply for these bird populations.

Four inter-related goals of the Pan-Arctic MPA network (extracted from PAME, 2015b):

To **strengthen ecological resilience** to direct human pressures and to climate change impacts, to promote the long-term protection of marine biodiversity, ecosystem function and special natural and cultural features in the Arctic.

To **support integrated stewardship, conservation and management** of living Arctic marine resources and species and their habitats, and the cultural and socio-economic values and ecosystem services they provide.

To **enhance public awareness** and appreciation of the Arctic marine environment and rich maritime history and culture.

To **foster coordination and collaboration** among Arctic states to achieve more effective MPA planning and management in the Arctic.

Figure 16: Map of EBSAs and marine "areas of heightened ecological and cultural significance" (Source: CAFF/PAME, 2017)

Over 20 years after the Arctic Council began discussing an Arctic MPA network, the swift establishment of a pan-Arctic MPA network is ever more urgently needed to see regional progress. The implementation of the goals defined for a pan-Arctic framework on MPAs will require further efforts, both at the national and regional level. The "Areas of heightened ecological and cultural significance" will be very useful for guiding these efforts

69 Find more information on the factsheets for the BEST projects: Benthic ecosystem conservation and PISUNA.

as only 5% of the areas identified by the Arctic Council in 2013[70] are under protection (CAFF/PAME, 2017).

Icesheets floating in the Arctic © Florian Ledoux

Like the 2014 OSPAR Status Report, the OSPAR 2017 Intermediate Assessments finds that "*the OSPAR MPA network cannot yet be considered ecologically coherent. Although the OSPAR MPA network is well distributed in the Greater North Sea and Celtic Seas, substantial gaps remain in Arctic Waters and the Wider Atlantic*" (OSPAR, 2017). More MPAs were already recommended in 2014 *"to take adequate account of OSPAR's commitment to marine conservation*" (OSPAR, 2015) but in 2016, protection of Arctic waters in the OSPAR marine area is still very low at 1.9% (OSPAR, 2017).

Marine mammal and shark sanctuaries

There are no marine mammal sanctuaries in the EU Overseas Arctic and subarctic region.

Walrus in the Arctic © Florian Ledoux

High Seas MPAs

Arctic landscape © Florian Ledoux

Two Arctic High Seas EBSAs with multi-year and seasonal ice cover were identified by the Convention on Biological Diversity (CBD) in the Central Arctic Ocean[71] and the Deep Arctic Ocean[72] but at present there is no High Seas MPA in this region.

Whales gathering Arctic waters © Florian Ledoux

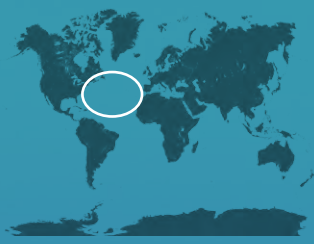
70 Identification of Arctic marine areas of heightened ecological and cultural significance: Arctic Marine Shipping Assessment (AMSA) IIC; AMAP/CAFF/SDWG; 2013.

71 Multi-year Ice of the Central Arctic Ocean and The Marginal Ice Zone and the Seasonal Ice-Cover Over the Deep Arctic Ocean EBSA

72 Marginal Ice Zone and the Seasonal Ice-Cover Over the Deep Arctic Ocean EBSA

Sunset light on Ilha da cabras natural reserve,Terceira Island, Azores © Carole Martinez

Territories



Bermuda and Sargasso Sea

Azores

Madeira

Canary Islands

NORTH ATLANTIC REGION

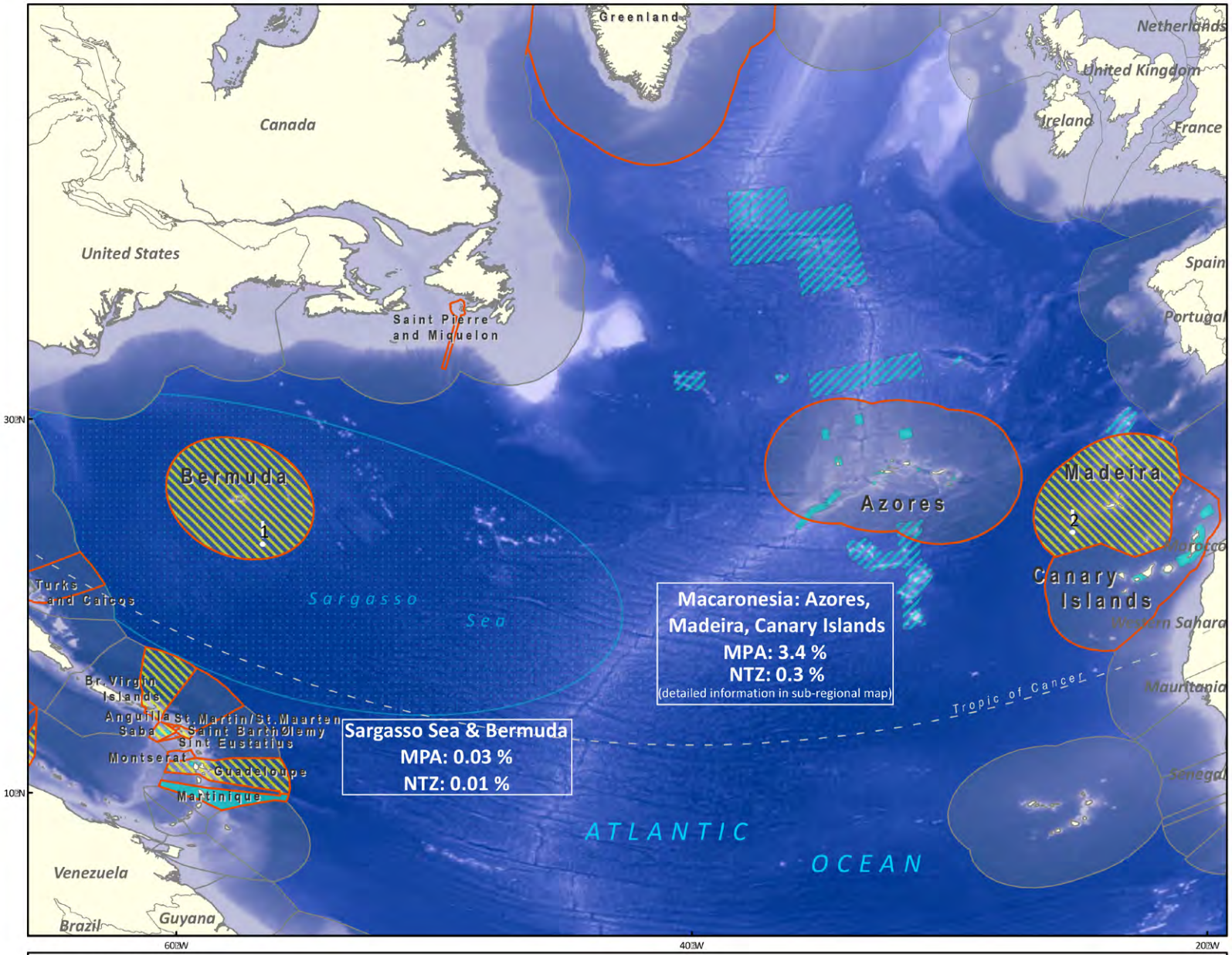
Blue anglefish and wrasse, coast of Bermuda © Alison Copeland

Sargassum mats © Sylvia Earle

Whale watching tourism in the Canary Islands © Ricardo Haroun

Humpback whale in the North Atlantic © Joël Detcheverry

Marine and coastal conservation efforts in the European Overseas: North Atlantic region



Marine Sanctuaries:
1 - Bermuda Marine Mammal Sanctuary (EEZ, 450,347 km^2) - protection of marine mammals
2 - Madeiran Marine Mammal Sanctuary (EEZ, 453,139 km^2) - protection of marine mammals

Summary for North Atlantic European Overseas	
Marine protected area (MPA):	2.7 %
No take zone (NTZ):	0.2 %
Marine sanctuary:	39 %
High seas MPA:	575,535 km^2

Legend

Exclusive Economic Zones (EEZ)

- European Overseas Countries and Territories and Outermost Regions
- Other

Protection in EU Overseas

- Marine protected areas incl. Ramsar sites under protection
- High seas MPA (in areas beyond national jurisdiction)
- Marine sanctuary
- Sargasso Sea Geographical Area of Collaboration (international waters)

Depth (m)

0
3000
6000

0 500 1000
Kilometers

Data sources:
- EEZ: VLIZ
- Coastline/borders: FAO
- Bathymetry: GEBCO 2014

Map projection: North Pole LAEA Atlantic, EPSG:3574

Status: August 2017

Map 8: EU Overseas marine and coastal conservation efforts in the North Atlantic Region (Source: IUCN, 2017)
(The area of the 2 MPAs extending beyond the Azorean EEZ into ABNJ was counted as High Seas MPA)

1.4. NORTH ATLANTIC REGION

Regional overview

International Recognitions of North Atlantic EU Overseas' Marine Biodiversity

1 EBSA: The Sargasso Sea

1 Mission Blue Hope Spot: Sargasso Sea

1 Biodiversity Hotspot: Mediterranean Basin **(incl. Macaronesia)**

1 PSSA: Canary Islands

1 LME: Canary Current **(LME 27)**

The North Atlantic Ocean extends from the Arctic to the Equator and harbours two very distinct EU Overseas sub-regions: the Sargasso Sea in the West, which harbours Bermuda, and further east off the coast of Africa and Europa Macaronesia with the Azores, Madeira and the Canary Islands, all of which will be presented in separate sub-chapters to better address sub-regional differences.

Albarnaz lighthouse at the north coast of Flores island, Azores © Luisa Madruga

Regional agreements

An independent UNEP administered **Regional Seas programme** is dedicated to the North-East Atlantic region.

The **OSPAR Convention** for the Protection of the marine Environment of the North-East Atlantic entered into force on 25 March 1998. The Convention partially covers the EU Overseas waters located in two of the five OSPAR sub-regions: in the Arctic waters, constituting approximately 40% of the OSPAR maritime area, one part of the Greenland marine domain is protected under the OSPAR Convention (see chapter 0); and in the Wider Atlantic sub-region, the Azores Archipelago benefits from the OSPAR MPA network. According to the OSPAR 2017 Intermediate Assessments, the highest MPA coverage remains within coastal waters: 16.7% for the entire OSPAR maritime area and 8.3% for the Wider Atlantic OSPAR region, which includes the OSPAR MPAs in the Azores' offshore waters and 5 large High Seas OSPAR MPAs on the outer limits of Portugal's extended continental shelf. OSPAR MPA nominations beyond territorial waters in recent years certainly helped to increase offshore coverage up to 8.9%; yet, in 2016 only 2.3% of the Exclusive Economic Zones (EEZs) of all OSPAR countries are protected (OSPAR, 2017).

Figure 17: Geographical scope of the OSPAR Convention including the Azorean EEZ (region V: Wider Atlantic) and the waters east of Greenland (region I: Arctic Waters) (Source: OSPAR).

Key developments on the MPA network came within OSPAR with the 2003 Bremen Statement adopted by the second Ministerial meeting of the OSPAR Commission. The Statement included the commitment to *'Working with HELCOM (Helsinki Convention) and the European Community, identify the first set of Marine Protected Areas (MPAs) by 2006, establish remaining gaps and complete by 2010 a joint network of well-managed MPAs that, together with the Natura 2000 network, is ecologically coherent'* (OSPAR, 2003a). In addition, the OSPAR Commission adopted a document detailing the guidelines for selecting and managing an OSPAR Network of MPAs (OSPAR, 2003b). The Bremen Statement and these guidelines established the basis for the OSPAR MPA network and its priority objectives that are largely ecological but do not include social or economic aspects.

International Cooperation & Regional Fisheries Bodies

The North Atlantic region is also covered by a number of Regional Fisheries Bodies (RFB), as further detailed in the sub-regional sections, including the International Commission for the Conservation of Atlantic Tunas (ICCAT, Article 1), the North Atlantic Marine Mammal Commission (NAMMCO), the North Atlantic Salmon Conservation Organization (NASCO), the Northwest Atlantic Fisheries Organization (NAFO), the North East Atlantic Fisheries Commission (NEAFC).

EU Overseas coastal and marine protected areas in the North Atlantic region

	EU Overseas waters area km²	**Coastal and marine protected areas (MPAs)**			**No-take zones (NTZs)**			**Marine mammal /shark sanctuary km²**
		#	Area (km²)	% of waters area	#	Area (km²)	% of waters area	
Bermuda (UK) and the Sargasso Sea*	450,347	32	150	0.03	30	14.7	<0.01	450,347**
Macaronesian region (ES, PT)	1,867,748	98	62,623	3.4	16	5,403	0.3	453,139**
Total North Atlantic region* **	**2,318,095**	**130**	**62,773**	**2.7**	**46**	**5,418**	**0.02**	**903,486 (39%)**
MPAs in ABNJ in the North Atlantic***	-	10	**575,535**					

Table 4: EU Overseas coastal and marine protected areas in the North Atlantic region, including Ramsar sites under protection, marine World Heritage Sites (WHS) and Man and Biosphere Reserves and marine protected areas beyond national jurisdiction (ABNJ). A list of individual protected area designations of this region can be found in Annex 4.

* Sargasso Sea covers large areas beyond national jurisdiction but also includes waters of Bermuda
** Marine mammals, entire EEZ of Bermuda and Madeira
*** 2 MPAs extend beyond the Azorean EEZ in areas beyond national jurisdiction (ABNJ). Rainbow hydrothermal vent field (MPA beyond the Azorean EEZ on the extended continental shelf) was assigned to Portugal in terms of number and area coverage but counted here as MPA in ABNJ.

Although the OSPAR 2017 Intermediate Assessments stressed the fact that the "OSPAR MPA network cannot yet be considered ecologically coherent", a case study from 2008 acknowledges it as '*an example of a trans-boundary MPA network and highlights the opportunities and challenges associated with a large-scale network which encompasses several jurisdictions and overlaps the Natura 2000 network*' (IEEP, 2008).

Every year the OSPAR Commission updates the status of the OSPAR MPA network. Additionally, meetings of the MPA, Species and Habitats group (MASH working group) provide important guidance for the implementation of the network, with regard to its ecological coherence.

Marine mammal and shark sanctuaries

There are two marine mammal sanctuaries covering almost 20% of the European Overseas waters in the North Atlantic region: the Bermuda Marine Mammal Sanctuary as part of the marine mammal protected areas network (MAMPAN) established by the Sister Sanctuary Program, and the marine mammal sanctuary covering the EEZ of Madeira in the Macaronesian region.

Humpback whale in the North Atlantic © Joël Detcheverry

Rough sea at the western coast of Flores island, Azores © Luisa Madruga

High Seas MPAs

In September 2010 OSPAR ministers from 15 European nations took an unprecedented step and established the **world's first network of MPAs on the High Seas** with the declaration of six new MPAs situated in areas beyond national jurisdiction in the OSPAR Wider Atlantic region. With the addition of a seventh MPA in 2012, the High Seas MPAs of the OSPAR Convention cover 464,539 km^2, which represents 7.3% of the OSPAR Wider Atlantic region, the majority of the entire MPA coverage of this region (8.3%)[73]. By far, the North Atlantic is leading for off-shore and High Seas MPAs designation. The OSPAR MPA coverage of waters under Portuguese jurisdiction (including the Azores) represents 0.04% of the entire OSPAR maritime area[74].

Monk seal mother with calves © Rosa Pires

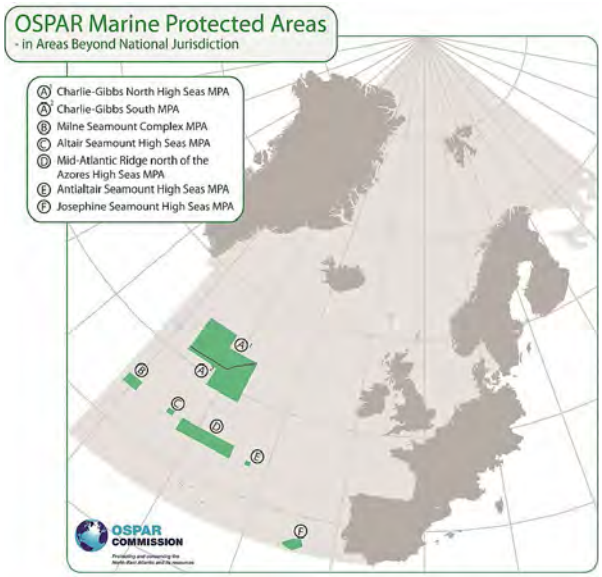


Figure 18: Map of the High Seas MPAs designated by OSPAR. (Source: OSPAR Commission)

No specific MPA strategy has been developed for ORs and OCTs in the Macaronesia and Sargasso Sea regions. The initiative for the Azorean with the Azores Marine Park proposal to the Azores environment agency in 2010 constitute in this respect a critical step for a coherent network of MPAs managed by one responsible authority, with homogenized legal management guidelines and implementation strategies.

Corvo island, Azores © Luisa Madruga

73 Information on the 7 OSPAR High Seas MPAs was taken from the OSPAR MPA database. The Rainbow hydrothermal vent field, another OSPAR MPA outside the Azorean EEZ, was assigned to Portugal in terms of number and area coverage (see chapter 1.4.2).

74 Area calculations (taken from Key Figures of the MPA OSPAR network) only consider the marine areas adjacent to mainland Portugal and around the Azores archipelago within the OSPAR maritime area, however there are other MPAs in the Azores region that are not part of the OSPAR MPA network.

Territories

Bermuda and Sargasso Sea

SARGASSO SEA REGION

Sargasso Sea © Philippe Rouja

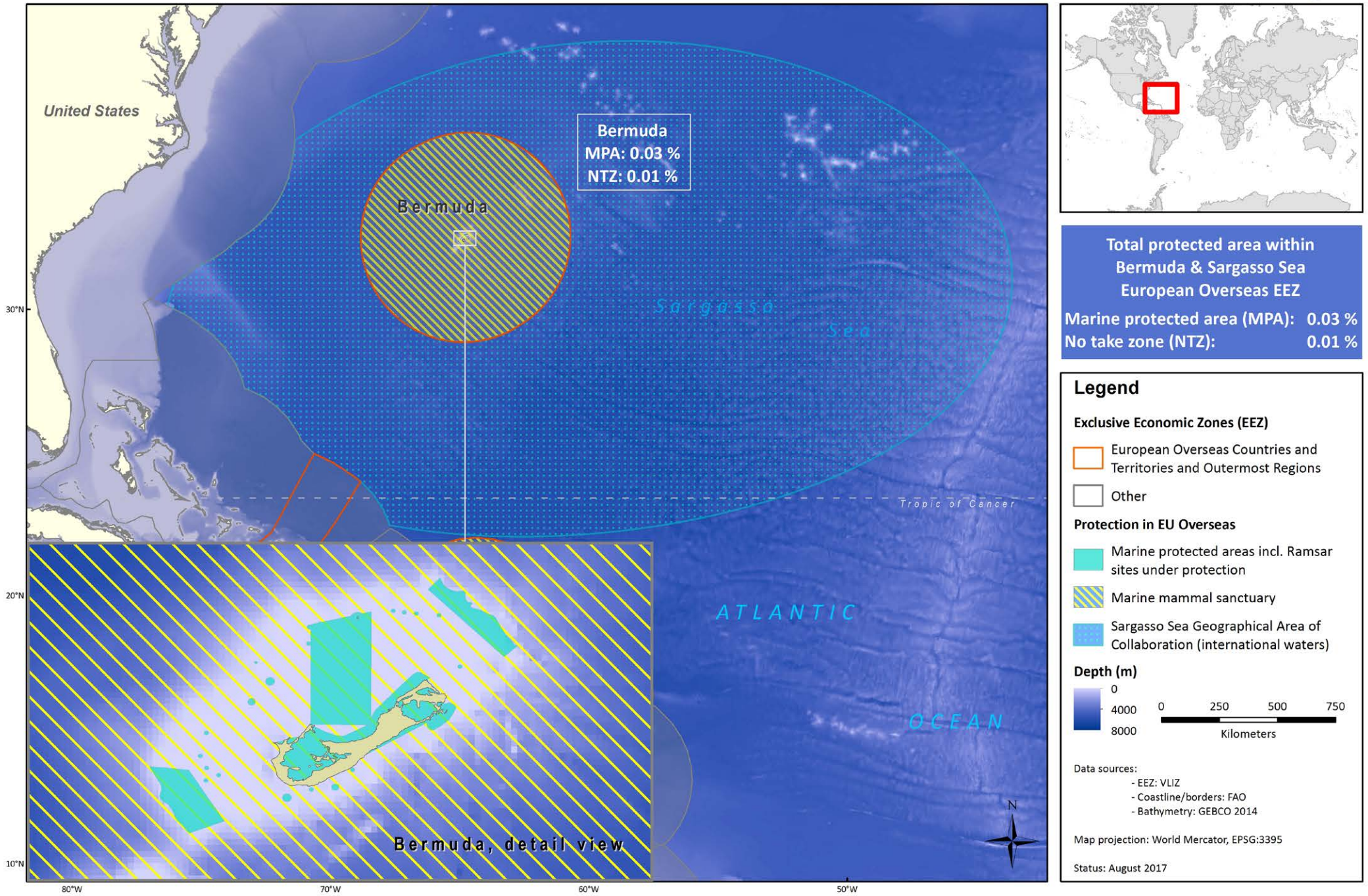
Bermuda coastline © Alison Copeland

Sargassum fish perfectly camouflaged in Sargassum seaweed (Histrio histrio, anglerfish or frog fish) © Jean-Pierre Rouja, LookBermuda.com

North Rock MPA, Bermuda © Alison Copeland

Sargassum mats © Sylvia Earle

Marine and coastal conservation efforts in the European Overseas: Bermuda & Sargasso Sea



Map 9: EU Overseas marine and coastal conservation efforts in the Sargasso Sea region (Source: IUCN, 2017)

1.4.1. SARGASSO SEA REGION

Regional overview

International Recognitions of Marine Biodiversity of the Sargasso Sea

1 Ecologically or Biologically Significant Marine Area (EBSA)

Sargasso Sea **(in ABNJ)**

1 Mission Blue Hope Spot

Sargasso Sea

The Sargasso Sea is a unique, four million square kilometres open-ocean ecosystem located in the North Atlantic Ocean. Often called 'The Golden Rainforest of the Atlantic Ocean' the Sargasso Sea is named after two species of Sargassum weed (*Sargassum fluitans,* NE; *Sargassum natans,* NE), found in mats and windrows floating within the subtropical North Atlantic gyre (Laffoley *et al.* 2011).

Identified as a Mission Blue *Hope Spot* the Sargasso Sea is the only 'Sea' in the world without a coastline, bounded on all sides by major ocean currents that trap water for estimated periods of up to fifty years and concentrate Sargassum, the algae for which the Sea is known. This clockwise gyre ecosystem is variable with the movement of ocean currents surrounding Bermuda (Laffoley *et al*. 2011), the only country whose EEZ falls within the boundaries of the Sargasso Sea at its western fringe.

Depths reaching over 4500 m and large seamounts produce physical and oceanographic structures that provide a unique environment for a large diversity of specialized, fragile and endemic species. The Sargasso Sea is the only breeding location for European and American eels and part of the migration route of many marine species. The Sargasso Sea plays a significant role in global ocean processes of oxygen production and carbon sequestration. However the currents also create conditions for concentrating pollutants. The Sargasso Sea was recognized as an ecologically and biologically significant marine area (EBSA) within the Wider Caribbean and Western Mid-Atlantic region for its diverse pelagic communities dependant on the floating Sargassum algae, its iconic and threatened migrating pelagic species, its mid-water communities and its specialised benthic communities that live on the seamounts. This fundamentally important part of the ocean meets all 7 EBSA criteria under the Convention on Biological Diversity (CBD). The Sargasso Sea was also featured among the hot spots in the High Seas identified for future recognition as World Heritage Sites (WHS).

Sargassum washed ashore © Bertrand Bhikarry, Marine Photobank

Regional agreements

SARGASSO SEA COMMISSION

This part of the Atlantic is not covered by any regional sea conventions. The Sargasso Sea is adjacent to areas covered by two UN Environment Programmes, which adopted Regional Seas Agreements: the Abidjan Convention for Co-operation in the Protection and Development of the Marine Coastal Environment of the West and Central African Region, and the Cartagena Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region. The Sargasso Sea Commission (previously Secretariat of the Sargasso Sea Alliance) pursues collaboration with both programs.

Regional Fisheries Bodies

The region falls under the area of the International Commission for the Conservation of Atlantic Tunas (ICCAT) and for the portion of the Sargasso Sea above 35°N, the North-Atlantic Fisheries Organization (NAFO).

EU Overseas coastal and marine protected areas in Bermuda and the Sargasso Sea

Hungry Bay Mangrove Swamp Ramsar Site, Bermuda © Stewart McPherson

	EU Overseas waters area km²	Coastal and marine protected areas (MPAs)			No-take zones (NTZs)			Marine mammal sanctuaries (km²)
		Number	Areas (km²)	% of waters area	Number	Area (km²)	% of waters area	
Bermuda (UK)*	450,347	32	150	0.03	30	14.7	<0.01	Marine mammals, entire EEZ

Table 5: EU Overseas coastal and marine protected areas within the Sargasso Sea region, including Ramsar sites under protection. A list of individual protected area designations of Bermuda can be found in Annex 4.

* The protection of the Sargasso Sea is the aim of the Hamilton Declaration (March 2014), however EEZ and Territorial waters of Bermuda are excluded from the declaration zone.

While notable efforts and leadership for High Seas conservation of the Sargasso Sea region have been seen, less than 1% of Bermuda's waters are protected with the majority of sites established as dive sites, primarily around ship wrecks, and listed as no-take zones under the Fisheries Act[75]. Over 90% of the MPA coverage results from two coral reef preserves in the north and south of Bermuda's coastal waters, which prohibits any removal or damage of the reef but not fishing. In addition to the network of 32 marine protected areas encompassing reef preserves, dive sites and seasonally closed sites, there are 7 Ramsar sites of small freshwater and tidal swamps, lagoons, marshes and ponds (amounting to <1km²) with little to no connection to the open sea.

International & Regional Designations in EU Overseas of the Sargasso Sea region

7 Ramsar Wetland sites (little to no marine connection)

Somerset Long Bay Pond	0.01 km²
Hungry Bay Mangrove Swamp	0.02 km²
Pembroke Marsh East	0.08 km²
Warwick Pond	0.02 km²
Paget Marsh	0.11 km²
Spittal Pond	0.11 km²
Lover's Lake Nature Reserve	0.02 km²

While falling within the boundaries of the Sargasso Sea, the EEZ and territorial waters of Bermuda were excluded from the Hamilton Declaration, which facilitates voluntary collaboration for the protection of the Sargasso Sea (see section High Seas MPA for more information). However, the initially proposed fully protected marine reserve would encompass the waters beyond 50 nm until 200 nm of Bermuda's EEZ within the Sargasso Sea.

A report by the Government of Bermuda looking into the protection of Bermuda's EEZ (Government of Bermuda, 2014) recommended an independent economic feasibility study, which is unfortunately on hold due to budget restraints (*personal communication 2016, Bermuda Department of Environment and Natural Resources*). "A Strategy for the Sustainable Use of Bermuda's Living Marine Resources" went through a public consultation process in 2010 and is to be implemented over a 15 year period. This strategy includes the development of a zoning plan for the entire Bermuda platform, the Banks and its EEZ waters. However, a zoning/marine spatial planning project was put on hold (*personal communication May 2017, Bermuda Department of Environment and Natural Resources*).

75 Bermuda Fisheries (Protected Areas) Order 2000.

Thalassia sea grass bed, Bermuda © Alison Copeland

Contributing to the territorial marine conservation efforts in waters under national jurisdiction, the European BEST Initiative is supporting conservation of the mesophotic coral ecosystems in Bermuda facing lionfish invasion[76].

Marine mammal and shark sanctuaries

In 2012, the Bermuda Government signed an agreement with NOAA's Office of National Marine Sanctuaries (ONMS) and Stellwagen Bank National Marine Sanctuary to cooperate on scientific and educational programs and pursue collaborative management efforts leading to establishment of a marine mammal protected areas network. A marine mammal sanctuary was formally designated in Bermuda's EEZ including its territorial waters in 2012 as part of the Sister Sanctuary Program, which helps to protect the endangered North Atlantic Humpback Whale population along their migratory routes between the northern feeding and nursery grounds and the Caribbean breeding grounds further south (for more information and map see chapter 0).

Humpback whale in the Sargasso Sea © Andrew Stevenson.

76 Find more information for this BEST project on the project factsheet.

High Seas MPAs

In March 2014, the governments of Bermuda, the Azores, Monaco, the United Kingdom and the United States signed the Hamilton Declaration, a non-binding political statement, committing to protect and exercise a stewardship role over the Sargasso Sea, a unique area of over 4.1 million km^2 of floating seaweeds. The declaration area does not include Bermuda's surrounding EEZ and territorial waters. The agreement seeks protection for the Sargasso Sea using international bodies that regulate areas beyond national jurisdiction, such as the International Maritime Organization, regional fisheries authorities (i.e. ICCAT and NAFO) and the Convention on Migratory Species. In 2016, the British Virgin Islands, The Bahamas and Canada signed the Declaration, and in January 2017 the Cayman Islands – the 4th European Overseas government - bringing the total number of signatory governments to nine. The Sargasso Sea Commission, established following three years of work by the Sargasso Sea Alliance and signing of the Hamilton Declaration, has no management authority but will "exercise a stewardship role for the Sargasso Sea and keep its health, productivity and resilience under continual review." It is a stand-alone legal entity established by Bermudian and US law.

Sargassum seaweed floating in the Sargasso Sea © Sylvia Earle

While the Sargasso Sea Area of Collaboration (see **Figure 19**) is not an MPA, the Northwest Atlantic Fisheries Organization (NAFO) closed the Corner Rise and New England Seamount areas to bottom fishing. A Sargasso Sea Stewardship Agenda - the first for a High Seas area – is currently being discussed. The Commission is collaborating with the Convention on Migratory Species for a possible instrument to protect eels in their migration and with NASA to put all their satellite observation into a single portal and overlay it with other species data.

With the Sargasso Sea lacking a regional organisation responsible for its conservation the international

Sargasso Sea Commission is a milestone towards protecting such an iconic High Seas ecosystem, using existing legal international frameworks.

The Sargasso Sea was showcased in a 2016 UNESCO report on World Heritage in the High Seas as one of the five sites for its potential Outstanding Universal Value. The report concludes that applying protection for areas beyond national jurisdiction is feasible using the current World Heritage Convention (UNESCO, 2016).

Floating sargassum habitat © Don Kincaid

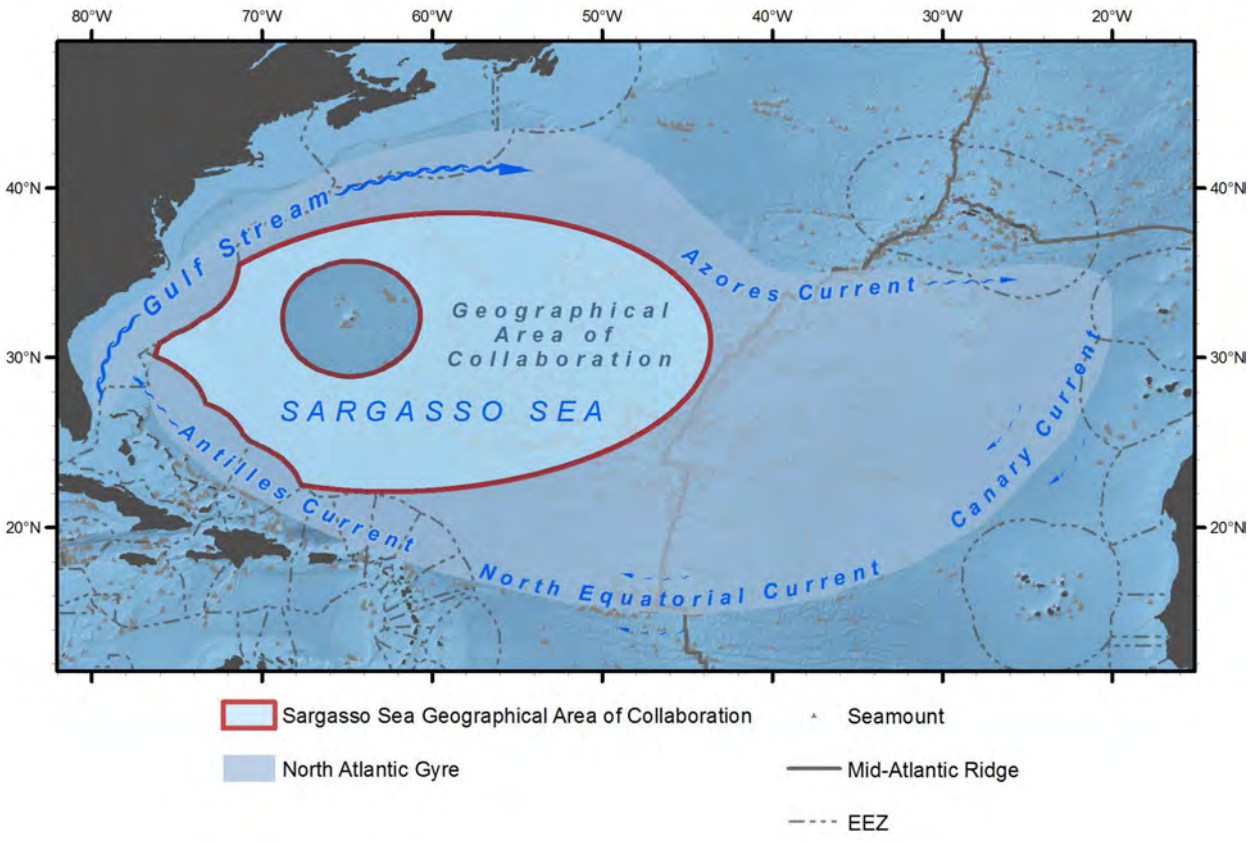
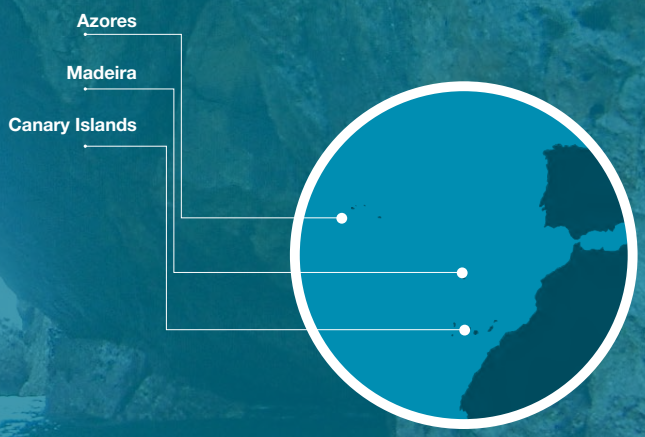


Figure 19: Map of the Sargasso Sea Area of Collaboration. (Source: Marine Geospatial Ecology Lab,Duke University)



MACARONESIAN REGION

Sea Caves at Flores Island, Azores © Luisa Madruga

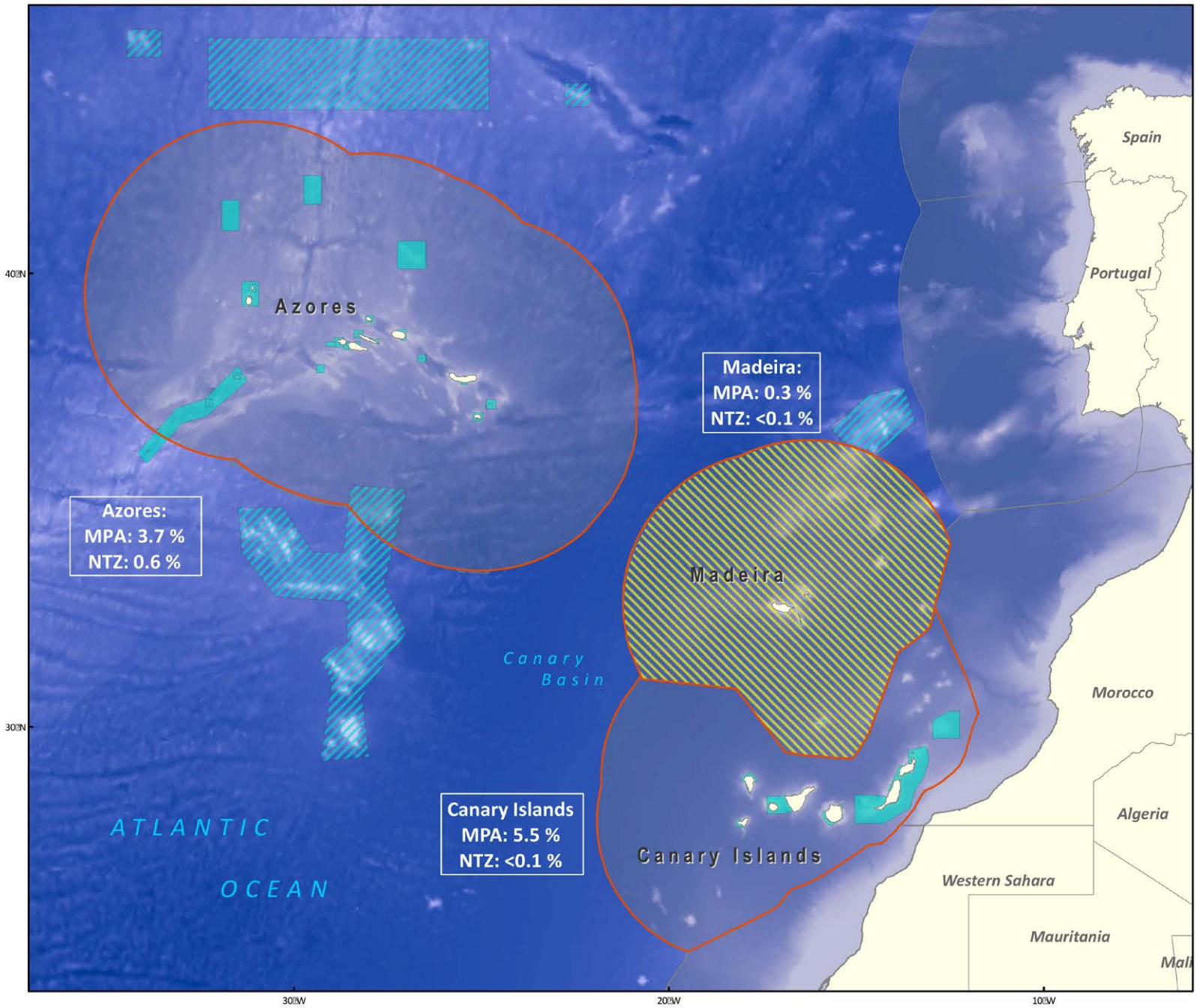
Angel shark in the Canary Islands © Carlos Suarez

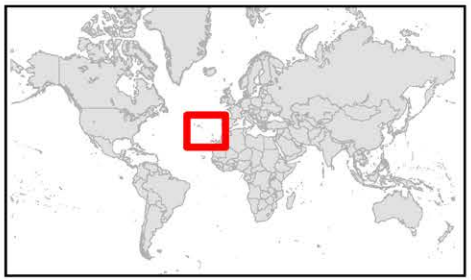
Madeira Coast © Tiago Aguiar, UnSplash

Monk seal in the waters of Madeira © Filipe Viveiros

Dolphin watching, Terceira Island, Azores © Carole Martinez

Marine and coastal conservation efforts in the European Overseas: Macaronesia region





Summary for Macaronesia European Overseas	
Marine protected area (MPA):	3.4 %
No take zone (NTZ):	0.3 %
Marine sanctuary:	24.3 %
High seas MPA:	230,551 km^2

Legend

Exclusive Economic Zones (EEZ)

- European Overseas Countries and Territories and Outermost Regions
- Other

Protection in EU Overseas

- Marine protected areas incl. Ramsar sites under protection
- High seas MPA (in areas beyond national jurisdiction)
- Marine mammal sanctuary

Depth (m)

0
3500
7000

0 250 500
Kilometers

Data sources:
- EEZ: VLIZ
- Coastline/borders: FAO
- Bathymetry: GEBCO 2014

Map projection: World Mercator, EPSG:3395

Status: August 2017

Map 10: EU Overseas marine and coastal conservation efforts in the Macaronesian region.
(*The area of the 2 MPAs extending beyond the Azorean EEZ into ABNJ was counted as High Seas MPA.) (Source: IUCN, 2017)

1.4.2. MACARONESIAN REGION

Regional overview

International Recognitions of Marine Biodiversity in the Macaronesian EU Overseas region

1 Biodiversity Hotspot

Mediterranean Basin **(incl. Macaronesia)**

1 Particularly Sensitive Sea Area (PSSA)

Canary Islands

1 Large Marine Ecosystem (LME)

Canary Current **(LME 27)**

Located in the Central East Atlantic Ocean, the Macaronesian region[77] encompasses three volcanic archipelagos that are part of the EU: the Azores, Madeira (both Portugal) and the Canary Islands (Spain). Their geological origin is reflected both in the landscape and the seascape, with volcanic fields and calderas, jagged mountains, eroded coastlines and impressive cliffs that, in many cases, continuous vertiginously towards deep waters. The biogeographical position and a gentle climate have shaped an ideal environment for a particularly rich area of species and habitats in the marine realms. In this sense, the surrounding seas are abundant in wildlife from different biogeographical origins: North Atlantic, Mediterranean and Tropical, creating unique marine habitats both in shallow and sub-littoral ecosystems. The three Macaronesian archipelagos harbour many cold-water coral reefs, which are usually found below 1000 metres and are part of the belt of cold-water coral reefs stretching from Norway to West Africa. Their waters are home to five of seven turtle species and considered one of the most important European hotspots for marine mammals, with over a third of the world's known cetacean species (Arbelo, 2007).

77 The Macaronesian bioregion also includes the archipelago Cape Verde, an independent republic off the coast of West Africa.

Bottlenose Dolphin, Canary Islands © Ricardo Haroun

Many marine animals, such as tuna, large whales, beaked whales, dolphins, monk seals (at present only in Madeira Archipelago) or seabirds, seek food in specific coastal areas of the region. Some of these animals are highly migratory species that reach the islands during part of their life span, either to reproduce or to rest before continuing their large sea journeys. The three EU Overseas Macaronesian archipelagos are included in the Mediterranean Basin biodiversity hotspot.

The Canary Current large marine ecosystem (LME 27) includes a major upwelling area of the world off the West coast of Africa, bordering also the Canary Islands. Defined as a class I, highly productive ecosystem due to its massive nutrient-rich upwelling, the over 1.1 million km^2 large Canary Current LME has been identified as a unique ecosystem of global significance. The Canary Islands were also recognized by the International Maritime Organization (IMO) as one of the 16 Particularly Sensitive Sea Areas (PSSAs) worldwide[78] and have also been considered for nomination as *Mission Blue Hope Spot*.

78 Particularly Sensitive Sea Areas (PSSAs) need special protection through action by the International Maritime Organization (IMO) because of its significance for recognized ecological or socio-economic or scientific reasons and which may be vulnerable to damage by international maritime activities.

The Azores, formed by 9 islands, comprise an extensive system of hundreds of active submarine mounts, volcanoes and hydrothermal vents, extending from the Mid-Atlantic Ridge, which foster a rich and unique marine ecosystem of diverse subaquatic life, including more than 160 coral species. Madeira's waters are just as exceptionally rich in biodiversity and also home to the critically endangered Mediterranean monk seal *(Monachus monachus, CR)*.

Fajã Grande, Flores island, Azores© Luisa Madruga

Macaronesia is the only EU Overseas region benefitting from the European **Natura 2000 network** and thus of the assessment of European marine conservation efforts (EEA, 2015). According to EEA, while favourable habitat assessments (33.3 %) were reported for Macaronesia, it was also the region with the lowest Natura 2000 marine site coverage (0.8% of all European waters in 2012).

In 2005, the EU fisheries ministers agreed to ban trawling on the sea bed around Madeira, the Azores and Canary Islands to save their unique cold-water coral reefs from destruction, as well as the use of gillnets and other entangling fishing nets at depths greater than 200 metres in these areas[79].

Regional Fisheries Bodies

The Macaronesian region is part of the convention area of the International Commission for the Conservation of Atlantic Tunas (ICCAT) and North-East Atlantic Fisheries Commission (NEAFC).

Natura 2000 network

A cornerstone for Europe's MPAs is the Natura 2000 network established under the Birds Directive and the Habitats Directive. The Natura 2000 network was established in 1992 as an EU wide ecological network of protected areas, which aims to protect rare and threatened species, including a number of vulnerable marine species and habitats, by means of legal recognition and protection. While covering many strictly protected nature reserves, both terrestrial and marine, the Natura 2000 network does not exclude all human activities but rather encourages an approach of people working with nature. This is in accordance with the ultimate objective of the Habitat Directive to ensure that these species and habitats achieve or maintain 'favourable conservation status'.

Following a site selection process based on scientific criteria of threatened natural habitats Member States adopt a list of **Sites of Community Importance (SCIs)**, which must be designated as **Special Areas of Conservation (SACs)** within six years. Similarly, Member States designate **Special Protection Areas (SPAs)** to protect (migratory) bird species and their habitats. SCIs/SACs can partially or fully overlap with SPAs and/or other protected area designations, such as national marine reserves.

While the Natura 2000 network contributes significantly to the EU seas MPA coverage, marine site designations have been focused on near-shore and coastal habitats, mainly due to a lack of knowledge about species and habitats in offshore waters.

Natura 2000 is only applicable to the three Macaronesian archipelagos but not to any other European Outermost Regions or Overseas Countries and Territories.

Regional agreements

Two Regional Seas agreements exist for the Macaronesia region: the **OSPAR Convention** and the **Natura 2000 network**.

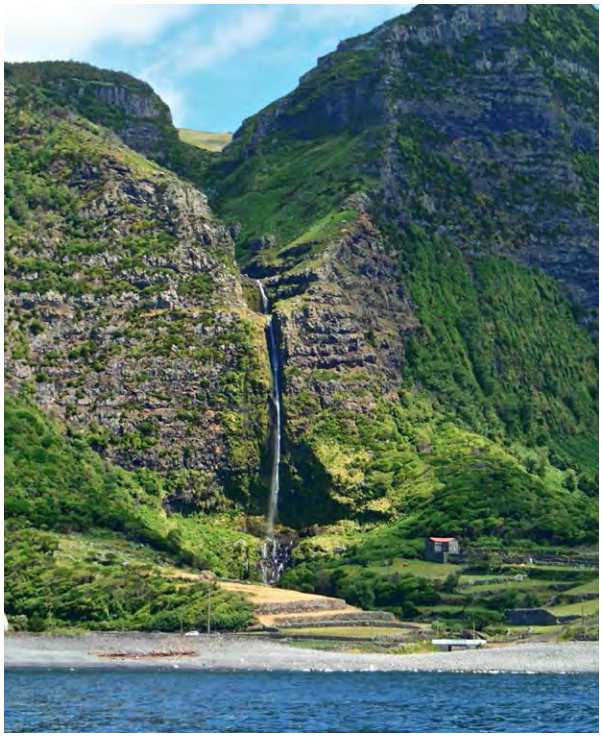
The **OSPAR Convention** for the Protection of the Marine Environment of the North-East Atlantic applies to the Azores waters within the Wider Atlantic region (OSPAR region V) and associated High Seas designated MPAs under the OSPAR MPA network (see chapter 1.4).

EU Overseas coastal and marine protected areas in the Macaronesian region

In Macaronesia, over **62,000 km² or 3.4%** of the coasts and waters under national jurisdiction are under some degree of protection. Most of these 98 protected areas in the Macaronesian region are along the coasts, and

79 Council Regulation (EC) No 1568/2005 of 20 September 2005 amending Regulation (EC) No 850/98 as regards the protection of deep-water coral reefs from the effects of fishing in certain areas of the Atlantic Ocean

many are part of larger terrestrial protected areas. The European Commission's State of Nature Report 2007-2012 found around 50% of assessed coastal habitats in the marine Macaronesian region in a 'favourable' conservation status, whereas the majority of "mainland" EU coasts were reported as 'unfavourable'[80]. Available data shows 5,403 km^2 of no-take zones in Macaronesia, predominantly (97%) in the Azores.



Poço do Bacalhau waterfall in Fajã Grande, Flores island, Azores© Luisa Madruga

International & Regional Designations

3 Ramsar Wetland sites (with marine connection)

Azores	'Fajãs' of Caldeira and Cubres Lagoons	0.87 km^2
	Ilhéus das Formigas e Recife Dollabarat	0.07 km^2
Canary Islands	Saladar de Jandía	1.27 km^2

11 Man and Biosphere Reserves

Azores	Fajãs de São Jorge (737 km^2 marine)	981 km^2
	Corvo Island (partly coastal)	258 km^2
	Graciosa Island (partly coastal)	122 km^2
	Flores Island (44 km^2 marine)	59 km^2
Canary Islands	La Palma (98.7 km^2 marine, 51.3% part of marine reserve)	807 km^2
	Lanzarote (380 km^2 marine)	1226 km^2
	Gran Canaria (349 km^2 marine)	1005 km^2
	La Gomera (473 km^2 marine)	845 km^2
	Fuerteventura (partly coastal)	3543 km^2
	Isla de El Hierro (9 km^2 marine)	296 km^2
Madeira	Santana Madeira (56.7 km^2 marine, 17 km^{2}marine reserve)	152 km^2

	EU Overseas waters area km^2	Coastal and marine protected areas (MPAs)			No-take zones (NTZs)			Marine mammal / shark sanctuaries km^2
		Number	Area km^2	% of waters area	Number	Area km^2	% of waters area	
Canary Islands (ES)	464,800	46	25,749*	5.5	3	21	0.005	Proposed
Madeira (PT)	453,139	7	1,435	0.3	4	158	0.03	Marine mammals, entire EEZ
Azores (PT)**	949,809	45	35,440	3.7	9	5,224	0.6	No
Total Macaronesian region	**1,867,748**	**98**	**62,623**	**3.4**	**16**	**5,403**	**0.3**	453,139 (24%)
MPAs in ABNJ (Macaronesian region)**		**7**	**230,551**					No

Table 6: EU Overseas coastal and marine protected areas in the Macaronesia region, including Ramsar sites under protection and Man and Biosphere Reserves with marine or coastal parts. A list of individual protected area designations of this region can be found in Annex 4.

*The total size of MPAs for the Canary Islands was calculated based on available GIS data, taking into account the partial overlap of areas protected under various designations.

** 2 MPAs extend beyond the Azorean EEZ in areas beyond national jurisdiction (ABNJ). Rainbow hydrothermal vent field (MPA beyond the Azorean EEZ on the extended continental shelf) was assigned to Portugal in terms of number and area coverage but counted here as MPA in ABNJ.

80 *The State of Nature in the EU* report (2007-2012) reported 70% of coastal habitats in an 'unfavorable' conservation status and in 4 of 9 regions no coastal habitats resulted in 'favourable' assessment.

In 2016, the Natura 2000 network expanded to cover more than 28,000 km² marine sites of the Macaronesian waters, a doubling from 2012, largely attributable to the declaration of 13 new protected areas in the Canary Islands since then. A fifth of all MPAs in the Macaronesian region are included in the Natura 2000 network, almost all MPAs of the Canary Islands and Madeira; however over 80% of the MPAs – located in the Azorean waters - are not covered by Natura 2000.

Whale watching briefing, Terceira Island, Azores © Carole Martinez

The Spanish Fisheries Department designated three Marine Reserves of Fisheries Interest in the **Canary Islands**, which were recently transferred to the Spanish Department of Environment: In 1995 "La Graciosa and the Islets" was created, covering 700 km² in the north of Lanzarote Island and in the following year "Punta de La Restinga – Mar de Las Calmas" encompassing 7.5 km² in the southeast of El Hierro Island, both of which are managed by a Committee formed between the National and Regional Governments. "Isla de La Palma", directly managed by the Spanish National Government, was established in 2001 in the southwest of La Palma Island covering an area of 37.2 km². These three reserves have been designated to secure the sustainability of the artisanal fisheries activities in those islands.

Las Palmas, Gran Canaria © Hector Argüello Canals, Unsplash

Formigas islets, Santa Maria, Azores © Paulo H. Silva

In July 2014, the Spanish Government, in compliance with the European Union Bird Directive declared 39 additional Special Protection Areas (SPAs) in Spanish marine and coastal waters to protect diverse marine bird populations, increasing Spain's MPA coverage from less than 1% to over 8%. Eleven of the marine SPAs are located close to the **Canary Islands'** coasts, covering almost 9600 km². The larger four MPAs are located mainly offshore, whereas the remaining 7 cover specific lengths of coastline with important nesting populations of birds. In addition, two marine Sites of Community Importance (SCIs) were recently adopted under the EU Habitat Directive: 'Espacio Marino del oriente y sur de Lanzarote-Fuerteventura' and 'Banco de la Concepción', two offshore sites adding almost 16,000 km² of protected areas. The designation of these two large offshore sites is the result of the 6-year project *INDEMARES*[81], which was supported by a large EU LIFE grant (with close to € 15.5 million probably the most expensive marine project ever to be funded by the LIFE programme) and led by the Spanish Government, OCEANA and SEO/BirdLife. The project aimed at improving the protection and sustainable use of biodiversity in Spanish seas, including in the waters of Canaries Islands, through inventorying and assessing the establishment of 10 new areas as Natura 2000 sites. Although some of the 13 newly declared marine sites in the Canary Islands overlap with existing protected areas, their designation more than tripled the MPA coverage for the Spanish archipelago.

81 *INDEMARES: Inventory and designation of marine Natura 2000 areas in the Spanish sea*

A large MPA (132,999 km²) was proposed on the Madeira-Tore geological complex, between **Madeira** and mainland Portugal, covering the submarine banks Tore, Ashton, Ormonde and Gettysburg (Gorringe), Josephine, HirondelleII, Lion, Unicorn, Seine and Dragon. Recognition by OSPAR will be sought; the component within the Portuguese EEZ will be designated as an SCI within the Natura 2000 network. In 2017, Madeira applied for Natural World Heritage Site of the Selvagens Islands and their surrounding waters.

The **Azores** designated 17 marine Natura2000 Special Areas of Conservation (SACs) and 2 Sites of Community Importance (SCIs) and created a network of off-shore MPAs – the Azores Marine Park – and Natural Parks, in which local SACs/SICs and local MPAs were integrated following IUCN classification and objectives. There are a number of off-shore MPAs, mainly located on the continental shelf, outside the Azorean EEZ but under Portuguese jurisdiction, including the hydrothermal vent fields (Lucky Strike, Rainbow and Menez Gwen), the underwater seamounts (Sedlo and Banco D. João de Castro) and the outcropping rocks of Formigas Bank.

Natural sea pools at Santa Cruz, Flores island, Azores © Luisa Madruga

Four additional **offshore MPAs** were designated in 2016: Princess Alice Bank (370 km²), Condor Bank (242 km²), Meteor Submarine Archipelago (123,238 km²) and an MPA southwest of the **Azores** (11,030 km²), which are part of the Azores Marine Park[82]. Meteor and the MPA southwest of the Azores extend beyond the limits of the Azorean EEZ and over 80% fall into areas beyond national jurisdiction (see Figure 34, Annex 4 and section on High Seas MPAs).

Supporting regional and transatlantic cooperation the European BEST Initiative funded a project analysing the frondose vegetation in Canaries, Azores and Guadeloupe to help guide conservation and restoration of these ecosystems, currently declining worldwide[83].

Quebrada da Rocha Alta, south coast of Flores island, Azores © Luisa Madruga

Marine mammal and shark sanctuaries

In 1986 a marine mammal sanctuary was declared within the entire EEZ of Madeira, covering almost a quarter of the Macaronesian waters. The waters around Desertas Island, Madeira (up to 100 m deep) are part of the nature reserve and a sanctuary for the endangered Mediterranean monk seal (*Monachus monachus, EN*). A proposed whale sanctuary along the strait between the Canary Islands and the African coast was denied by the Spanish Senate in 2015. However, the discussions could be revived after the current political changes. A Macaronesian corridor was delimited in late 2000s (Western African Talks on Cetacean and Their Habitats, WATCH 2009) but the respective conservation areas have still not been declared to date (Hoyt, 2011).

82 Decreto Legislativo Regional n.º 13/2016/A, Diário da República n.º 137/2016, Série I de 2016-07-19

83 Find more information on the project factsheet.

Sperm whale (Physeter macrocephalus), Macaronesia © Birgitta Muck

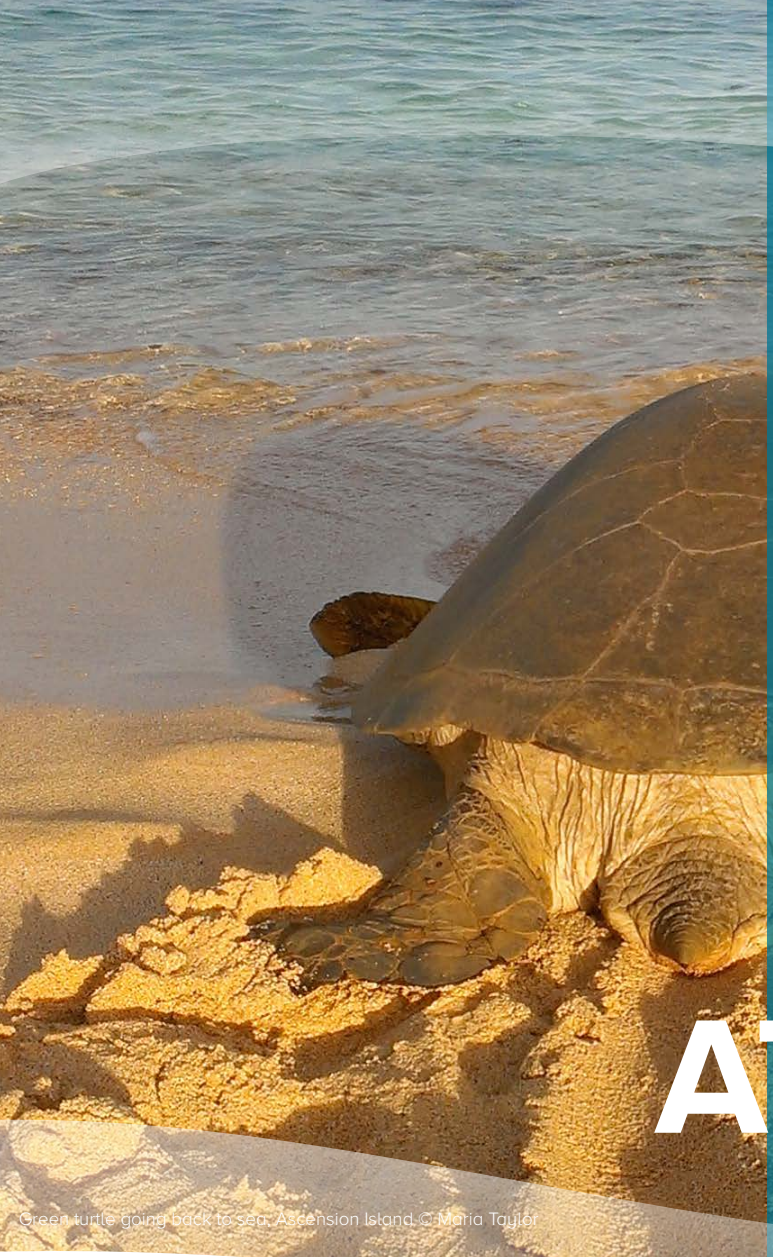
High Seas MPAs

In the Macaronesian region, the Azores paved the way with the designation of seven offshore and High Seas MPAs in 2010 and 2016: **Mid-Atlantic Ridge (MAR) north of the Azores**, **Altair Seamount**, **Antialtair**, **Josephine Seamount Complex**, **Rainbow hydrothermal vent field**, **Meteor**, **MPA southwest of the Azores**. Meteor and the MPA southwest of the Azores are partially inside the Azorean EEZ and extend into areas beyond national jurisdiction (ABNJ) yet mostly outside the OSPAR regional scope (see Figure 34, Annex 4). They are however, part of the Azores Marine Park as well as the other High Seas MPAs with the exception of the Josephine Seamount Complex, which is located between Madeira and Portugal.

Ponta da Fajã, Flores island, Azores © Luisa Madruga

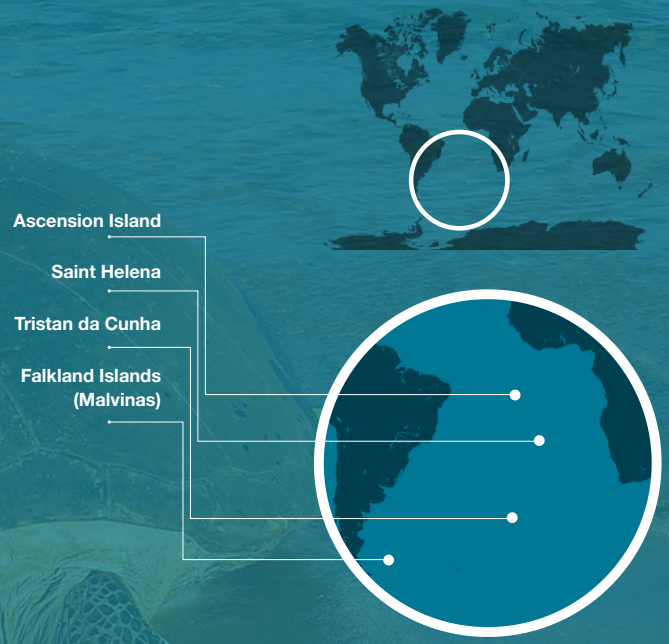
All seven High Seas MPAs are subject of a Portuguese submission to the UN Commission on the Limits of the Continental Shelf (UN CLCS) in 2009 on the outer limits of its extended continental shelf (**PT-ES/05-05-2009**). Portugal expressed the intention to assume the responsibility to take measures for the protection of the sea floor and sub-sea floor of these High Seas MPAs. Upon invitation by Portugal, the OSPAR Commission agreed to collectively assume the responsibility to take measures accordingly for the protection of the superjacent water column (the 'High Seas') in four of these MPAs (Mid-Atlantic Ridge (MAR) north of the Azores, Altair Seamount, Antialtair Seamount, Josephine Seamount Complex). Portugal formally nominated the Rainbow Hydrothermal Vent Field as an MPA to the OSPAR Network of MPAs OSPAR Commission. While being situated in ABNJ, the OSPAR Commission eventually assigned this MPA to Portugal, which "*recognised its obligations under UNCLOS Article 192 to protect and preserve the marine environment, as well as the precautionary principle, and assumed responsibility for protecting the seabed and the sub-soil even prior to the final conclusion of the UN CLCS. It has to be noted that this MPA encompasses only the seabed with no scientific case to extend the MPA to the water column.*" (**OSPAR, 2015**; p. 18) The water column of the Rainbow hydrothermal vent field remains unprotected (**OSPAR, 2015**).

Southern Selvagens Islands from space, Madeira © NASA Earth Observatory



Green turtle going back to sea, Ascension Island © Maria Taylor

Territories



SOUTH ATLANTIC REGION

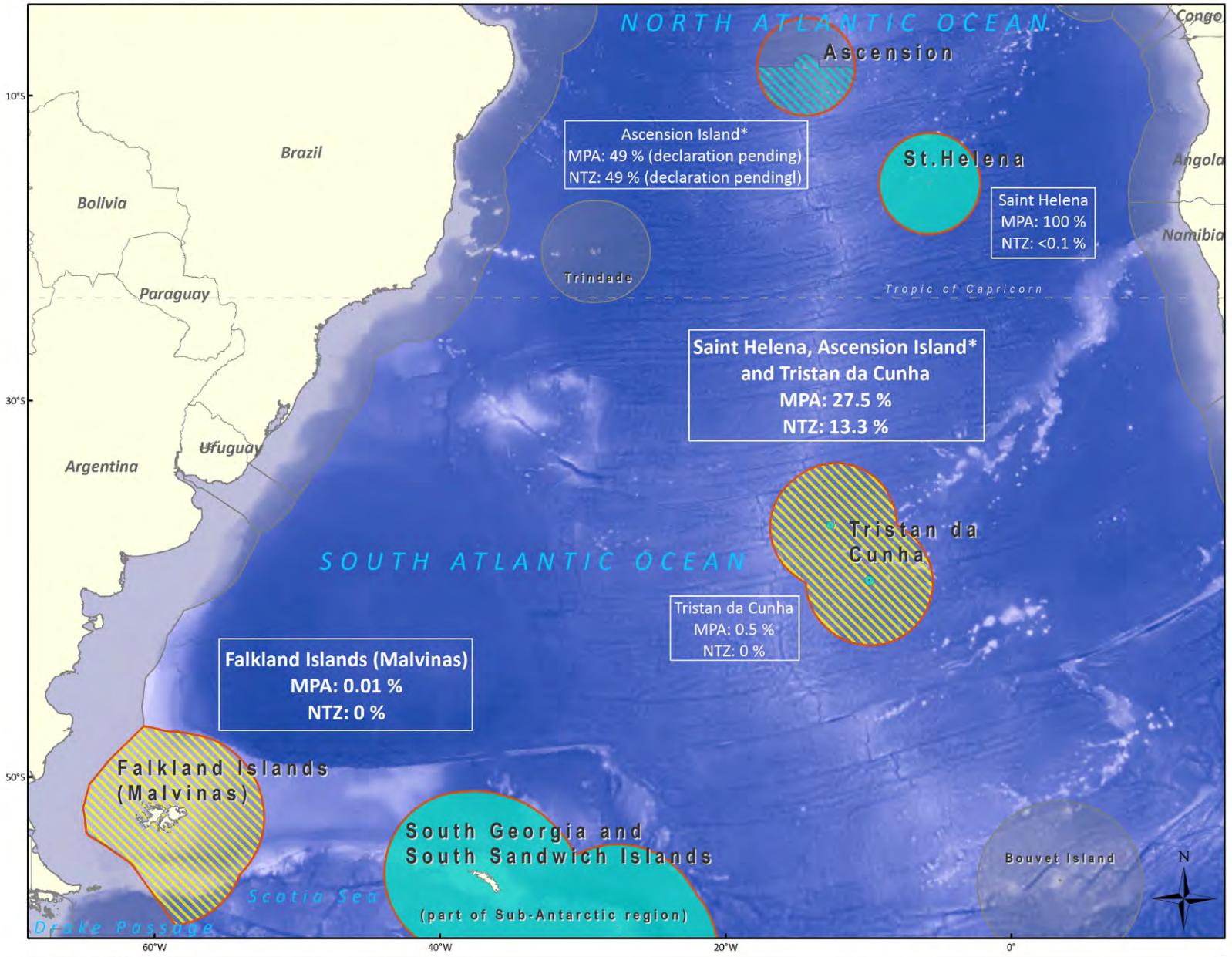
Giant kelp, Falkland Islands © Shallow Marine Surveys Group (SMSG)

Pantropical spotted dolphin in St Helena's waters © Emma Bennett

Breeding Albatross © Clare Stringer

Fur seal, Falkland Islands © Maria Taylor

Marine and coastal conservation efforts in the European Overseas: South Atlantic region



Summary for South Atlantic European Overseas	
Marine protected area (MPA):	21.6 %
No take zone (NTZ):	10.5 %
Marine sanctuary:	57.3 %

*Formal MPA declaration still pending. Currently fully closed area is provisional and boundaries may change in future.

Legend

Exclusive Economic Zones (EEZ)

- European Overseas Countries and Territories and Outermost Regions
- Other

Protection in EU Overseas

- Marine protected areas incl. Ramsar sites under protection
- Closed area - official declaration pending
- Marine sanctuary

Depth (m)

0
4000
8000

0 500 1000 1500
Kilometers

Data sources:
- EEZ: VLIZ
- Coastline/borders: FAO
- Bathymetry: GEBCO 2014

Map projection: World Mercator, EPSG:3395

Status: August 2017

Marine Sanctuaries:
Tristan da Cunha Cetacean Sanctuary (EEZ, 751,586 km^2) – protection of all cetacean species
Falkland Islands (Islas Malvinas) Marine Mammal Sanctuary (EEZ, 452,069 km^2) – protection of all marine mammals on land and all waters (internal and territorial)

Map 11: EU Overseas marine and coastal conservation efforts in the South Atlantic region (Source: IUCN, 2017)

1.5. SOUTH ATLANTIC REGION

Regional overview

International Recognitions of South Atlantic EU Overseas' Marine Biodiversity

1 Ecologically or Biologically Significant Marine Area (EBSA)

Subtropical Convergence Zone (STCZ) **- surrounding Tristan da Cunha (in ABNJ)**

1 Mission Blue Hope Spot

Ascension Island

1 Large Marine Ecosystem (LME)

Patagonian Shelf **(incl. Falklands, LME 14)**

Located in the southern Atlantic Ocean the islands of Ascension and St Helena, and the archipelagos of the Falkland Islands (Malvinas) and Tristan da Cunha (UK), are separated from one another by several thousand kilometres and differ greatly in climate, fauna and flora. Their remoteness has resulted in a biodiversity characterized by a high level of endemic species.

Nesting green turtle, Ascension Island © Simon Vacher, Redfern

The smallest of the islands, Ascension, is unusual for having a high-abundance but low-diversity sub-tropical ecosystem. **Ascension Island** has been acknowledged as a Mission Blue *Hope Spot* - well-known for the Atlantic Ocean's second largest nesting population of Green Turtles (*Chelonia mydas,* EN) and has protected the globally endangered species since the mid-20th century. Both, Ascension Island and Saint Helena have well preserved diverse marine ecosystems.

Nearly 780 marine species have so far been recorded for **St Helena**, of which at least 50 are endemic - and more recently discovered species yet to be described (Brown, 2014). Of the 173 recorded fish species around Ascension Island 11 appear to be endemic to the island and further 16 only found in the waters around St Helena and Ascension Island (Wirtz et al. 2014). St Helena's offshore waters, extending to an average depth of 4000 m, are home to a number of large species, such as humpback whales (*Megaptera novaeangliae*, LC), whale sharks (*Rhincodon typus*, EN) and occasionally sperm whales (*Physeter macrocephalus*, VU), several dolphin and 9 shark species as well as commercially important tuna populations.

Bottlenose dolphins, St Helena © Emma Bennett

The **Tristan da Cunha Islands** comprise four islands (Tristan da Cunha, Inaccessible, Nightingale and Gough Island), of which only the largest (Tristan da Cunha) is permanently inhabited. Gough Island and Inaccessible Island are listed as UNESCO World Heritage Site (WHS) since 2004[84]. In 2008, Gough and

84 The original WHS from 1995 for Gough Island and its territorial waters (up to 3 nm) was expanded in 2004 to include Inaccessible Island and its territorial waters (up to 12 nm) http://whc.unesco.org/en/list/740 and a global assessment of values, threats, protection and management as part of the IUCN World Heritage Outlook rated the conservation outlook of this site of significant concern.

Inaccessible Islands and their territorial waters were also designated Ramsar Wetlands of International Importance. Tristan's islands provide breeding grounds to Southern Elephant Seals (*Mirounga leonine*, LC), almost all of the world's Northern Rockhopper Penguins *(Eudyptes moseleyi,* EN*)* and 80% of the Subantarctic fur seal (*Arctocephalus tropicalis*, LC) population and its surrounding waters are home to large whale and dolphin populations.

Tristan, Ramsar site and World Heritage Site, as seen from space © NASA

The marine areas of the **Falkland Islands** are very rich and support large populations of higher predators (birds and mammals) of the food chain, which are poorly studied. There is a recognized need for research and baseline data on the Falklands' vast and important marine environment in order to guide marine protection measures. The Falkland Islands are part of the Patagonian Shelf large marine ecosystem (LME 14), one of the world most productive and complex marine ecosystems.

Gypsy Cove, Falkland Islands © Maria Taylor

Regional agreements

There is neither a UNEP Regional Seas programme nor a regional sea convention for the South Atlantic. However the region is part of several **Regional Fisheries Management Organisations Bodies**, namely the International Commission for the Conservation of Atlantic Tunas (ICCAT), the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) as well as the Agreement on the Conservation of Albatrosses and Petrels (ACAP), ratified through the UK for the Falkland Islands (2004) and Tristan da Cunha (2006).

Squirel fish, Ascension Island © Shallow Marine Survey Group (SMSG)

EU Overseas coastal and marine protected areas in the South Atlantic region

	EU Overseas waters area km²	Coastal and marine protected areas (MPAs)			No-take zones (NTZs)			Marine sanctuaries
		#	Area km²	% of waters area	#	Area km²	% of waters area	km²
Falkland Islands (UK)	452,069	2	48.6	0.01	0	0	0	Marine mammals, entire EEZ
Saint Helena, Tristan da Cunha, Ascension Islands (UK)	1,649,236	3	453,787	27.5	5	220,000	14.3	Marine mammals in all Tristan da Cunha's waters
*Ascension Island**	*447,426*	*0*	*0*	*0*	*1*	*220,000**	*52*	*No***
Saint Helena	*450,224*	*1*	*450,224*	*100*	*4*	*0.2*	*<0.1*	*No****
Tristan da Cunha	*751,586*	*2*	*3,487*	*0.5*	*0*	*0*	*0*	*Marine mammals, all waters*
Total South Atlantic region	**2,101,305**	**5**	**453,836**	**21.6**	**5**	**220,000**	**10.5**	**1,203,655**

Table 7: EU Overseas coastal and marine protected areas South Atlantic region, including Ramsar sites under protection and marine World Heritage Sites (WHS). A list of individual protected area designations of this region can be found in Annex 5.

* Formal declaration as MPA still pending but southern half of Ascension Island's economic fisheries zone (EFZ) is currently closed for commercial fishing.

** 16 shark and 2 cetacean species protected through the entire EFZ of Ascension Island.

*** While not declared as a marine sanctuary all cetacean species (some were historically harvested by locals for food) and 10 species of sharks and rays through the entire EFZ of St Helena.

Over 21% of the South Atlantic European Overseas waters are currently protected, the majority as a result of **St Helena** designating its surrounding 200 nm maritime zone as an MPA with sustainable use of natural resources (IUCN Cat. VI), where damaging fishing methods such as bottom-trawling, gill-nets and purse-seining are now banned[86]. This MPA resulted from work of a Darwin-funded project (2012-2014)[87] that mapped St Helena's marine biodiversity and developed the marine management plan (MMP) for this MPA. Best practice guidelines for marine tourism based activities as well as for local and traditional shoreline fishing were developed and made available, ensuring compliance with the new MPA regulations (*personal communication, St. Helena government, March 2017*).

The UK government also committed to designate two additional large MPAs in the South Atlantic: At least 220,000 km² around **Ascension Island** – half of its waters – will be designated as a fully-protected marine reserve, permanently closed to commercial fishing by 2019, making it the largest no-take zone (NTZ) in the Atlantic Ocean (UK Government press release, 15 September 2016). While formal declaration may still be pending, a first closure limited all recreational fishing activity to the territorial waters (within 12 nm) until end of 2015 by suspending fishing throughout its Exclusive Fisheries Zone (EFZ), which allowed decision makers to discuss different marine management strategies. As of December 2015, commercial fishing was reopened in 50% of the waters with monitoring and bans on shark finning, by-catch and illegal fishing enforced (Ascension Island Government). The currently closed area (220,000 km²) encompasses the entire southern half of the EFZ and an inner ring of 50 nm surrounding the Island. Scientific research is underway to inform the final decision on the location of the MPA prior to formal designation (*personal communication, May 2017, Ascension Island Government*).

International & Regional Designations in the South Atlantic EU Overseas

4 Ramsar Wetland sites (with marine connection)

Falkland Islands	Sea Lion Island	27.4 km²
	Bertha's Beach	21.2 km²
Tristan da Cunha	Gough Island	2298 km²
	Inaccessible Island	1265 km²

1 Natural World Heritage Site (with marine connection)

Tristan da Cunha	Gough and Inaccessible Islands WHS	3900 km²

85 Ascension Island, St Helena and Tristan da Cunha are currently in the process of proclaiming their exclusive fisheries zones (EFZs) as exclusive economic zones (EEZs)

86 More information on St Helena's MPA: http://www.sainthelena.gov.sh/st-helenas-marine-protected-area-2/

87 *Mapping St Helena's Marine Biodiversity to Create a Marine Management Plan* (http://www.darwininitiative.org.uk/project/19031/

Fish aggregations in Ascension Island © Dan Laffoley

By 2020, 754,000 km^2 of extremely rich waters around the remote islands of **Tristan da Cunha** will be safeguarded via a protection regime, led by the 270-person Tristan community. The UK government will commit £20 million over four years to monitor, manage and enforce the newly announced protected areas (including the Pitcairn marine reserve in the Pacific) from unsustainable and illegal fishing (UK Government press release, 15 September 2016). The four other existing MPAs in this region are designated Ramsar sites. Gough Island and Inaccessible Island, 2 large Ramsar sites around Tristan da Cunha, were also declared World Heritage Site (WHS) and a Conservation Ordinance from 2006[88] protects the territorial waters of the WHS and all breeding colonies of the Northern Rockhopper Penguin *(Eudyptes moseleyi,* EN*)* of the main island Tristan. While all native species are strictly protected, Tristan residents are permitted to restricted harvesting within the WHS and controlled commercial fishing activities within Tristan da Cunha's EFZ. There are no strict NTZ but 4 no-fishing areas (3,269 km^2), which allow lobster fishing.

Northern Rockhopper Penguins, Tristan da Cunha ©Trevor Glass

88 Ordinance for the conservation of native organisms and natural habitats of Tristan da Cunha (2006) http://www.tristandc.com/wildordinance.php

Apart from two Ramsar sites the **Falkland Islands** have no officially declared MPAs or NTZs but declared a number of temporal spawning closure areas. The Falkland Islands have recently undertaken a case-study, which examined current fishing closures areas to see whether they could deliver wider conservation goals as protected areas recognized by IUCN. A combination of permanent and temporal closures were assessed against international protected area criteria; aspects such as whether these existing fisheries management closures had explicitly stated nature conservation objectives were examined. Three areas were identified for further consideration as proposed marine management areas. The first was the Inshore Fishing Regulation area (up to 3nm from shore), which has never been subject to large-scale commercial fishing. Second was a three mile fishing exclusion area circling Beauchéne Island. The final area was seasonal Patagonian toothfish *(Dissostichus eleginoides, NE)* fishing closure over the Burdwood Bank in the south of the Falklands Outer Conservation Zone (FOCZ), protecting spawning Patagonian toothfish (*Dissostichus eleginoides*, NE), which are important for commercial fishing. This case study showed that, with some small changes such as specifically stating nature conservation objectives, Falkland Islands Government could use these pre-existing permanent and temporary closures as sites for marine management and deliver wider conservation benefits. Local stakeholder consultations are currently underway to discuss the implications of potentially designating current fishing closures as permanently protected areas. Local stakeholder consultations and dialogue are currently underway to explore options around progressing following the findings from this fishing closure area case-study.

Fur seal mother with calves © Clare Stringer

Ascension Island Government in Partnership with SAERI (South Atlantic Environmental Research Institute) and the Shallow Marine Surveys Group (SMSG) carried out a 2 year project called Ascension Island Marine Sustainability (AIMS), funded by the Darwin ini-

tiative, to examine marine sustainability around Ascension. The project delivered three work packages that addressed biodiversity knowledge gaps and greatly improved near shore and offshore fisheries ecology understanding. The follow-on Darwin funded project Ascension Island Ocean Sanctuary project (ASIOS) will integrate all marine data into a GIS platform as a basis for a future marine spatial planning and conduct additional research to allow for evidence based proposals for MPAs. The Ascension Island Government is currently establishing their fisheries management regime as part of this process.

The European BEST initiative supports marine conservation in the region through funding of an ecological assessment of Ascension Island's shallow-water seamounts as candidate MPAs as well as the development of a site-based conservation approach for sei whales (*Balaenoptera borealis,* EN), in the Falkland Islands' waters[89].

Marine mammal and shark sanctuaries

Sei whale passing by the coast of the Falkland Islands © Alan Henry

There are two marine mammal sanctuaries, covering more than half of the South Atlantic EU Overseas waters. The Falkland Islands enacted a Marine Mammals Ordinance in 1992, prohibiting the killing or taking of marine mammals on land or in the internal waters, territorial sea or fishery waters of the Falkland Islands. The government of Tristan da Cunha, a former whaling station, declared all national waters (to the EFZ limit) a Cetacean Sanctuary in 2001 with legal protection under the Tristan da Cunha Fishery Limits Ordinance of 1983 (amended last in 1997) in order to ban hunting or causing harm to any species of cetacean. The establishment of a South Atlantic Whale Sanctuary has been proposed and discussed since 1998. A revised proposal for such a sanctuary including a management plan was submitted to the International Whaling Commission (IWC) in 2016[90] but has not been adopted yet.

Shark in the South Atlantic © Judith Brown

While not formally declared as marine sanctuary, the St Helena Environmental Protection Ordinance (EPO) from 2016 protects all cetacean species (some were historically harvested by locals for food) and 10 species of sharks and rays through the entire EFZ. The Marine Management Plan includes policies on tourists interacting with whale sharks and cetaceans, as well as a policy on underwater blasting to protect cetacean populations. Throughout the EFZ of Ascension Island 16 shark and 2 cetacean species are protected by the Wildlife Protection Ordinance from 2014.

Rescue of a stranded turtle, Ascension Island © Maria Taylor

High Seas MPAs

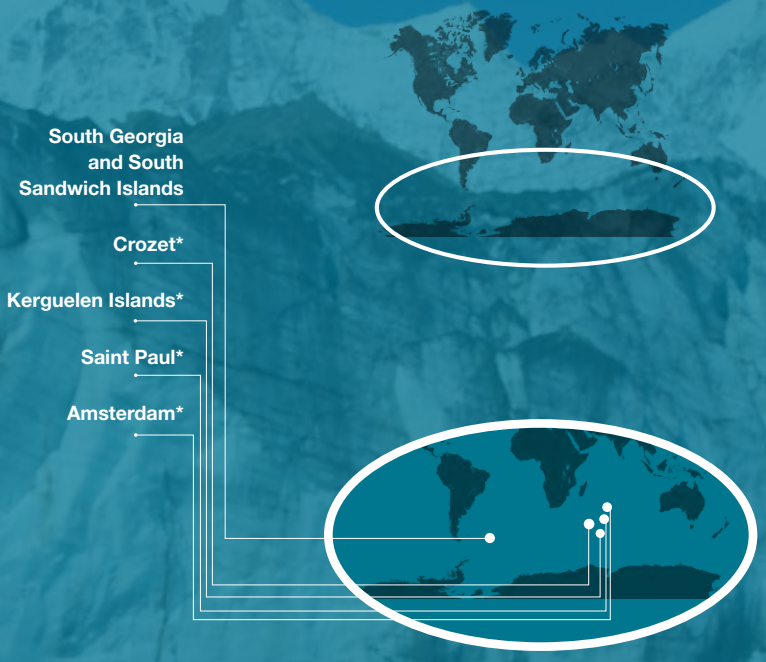
There are no existing or planned High Seas MPAs in the South Atlantic region.

89 More information on the BEST projects in the South Atlantic region on the projects' factsheets: Sei whales (Falklands) & shallow-water seamounts as candidate MPAs (Ascension).

90 THE SOUTH ATLANTIC: A SANCTUARY FOR WHALES Presented by the Governments of Argentina, Brazil, Gabon, South Africa and Uruguay to the 66th Annual Meeting of the International Whaling Commission Portoroz, Slovenia, October 2016, IWC/66/08.

King penguin in South Georgia © Judith Brown

Territories



* Part of Territory of the French Southern and Antarctic Lands (TAAF)

ANTARCTIC AND SUB-ANTARCTIC REGION

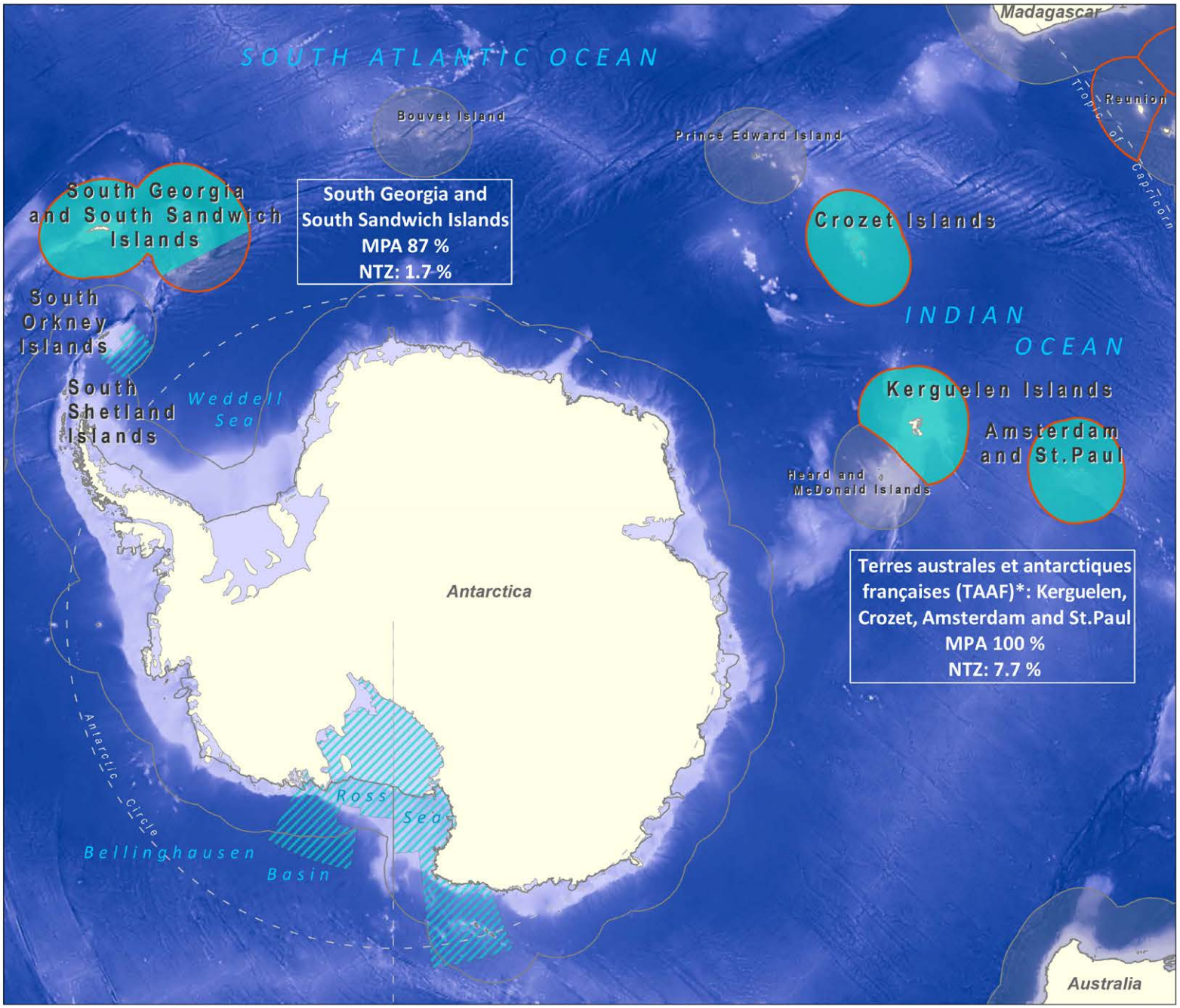
Albatross chicks in Bird Bay, Kerguelen, French Southern Lands © Fabrice Le Bouard – TAAF

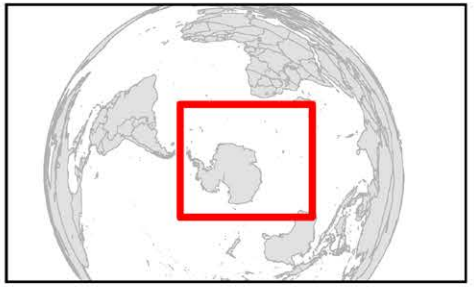
Coastline of Amsterdam Island, French Southern Lands © Bruno Marie

Elephant seals and penguins, Crozet © Stéphanie Legerón

Antarctic ice plates © Bruno Marie

Marine and coastal conservation efforts in the European Overseas: Antarctic and Sub-Antarctic Region





Summary for Antarctic and Sub-Antarctic European Overseas

Marine protected area (MPA):	94.5 %
No take zone (NTZ):	5.1 %
High-seas MPA:	2,184,027 km^2

* Early 2017 TAAF reserve extended their protection zone further to cover all of its EEZ but it is not yet recognized as MPA by the French MPA strategy.

Legend

Exclusive Economic Zones (EEZ)

- European Overseas Countries and Territories and Outermost Regions
- Other

Protection in EU Overseas

- Marine protected areas incl. Ramsar sites under protection
- High seas MPA (in areas beyond national jurisdiction)
- Marine sanctuary

Depth (m)

0
3000
6000

0 500 1000 1500
Kilometers

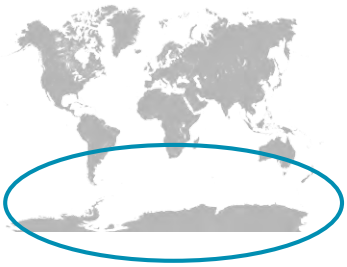
Data sources:
- EEZ: VLIZ
- Coastline/borders: FAO
- Bathymetry: GEBCO 2014

Map projection: World Mercator, EPSG:3395

Status: August 2017

Map 12: EU Overseas marine and coastal conservation efforts in the Antarctic and Subantarctic region (Source: IUCN, 2017)

1.6. ANTARCTIC AND SUBANTARCTIC REGION



Regional overview

International Recognition of Antarctic and Subantarctic EU Overseas' Marine Biodiversity

2 Ecologically or Biologically Significant Marine Areas (EBSAs)

Prince Edward Islands, Del Cano Rise and Crozet Islands

- northern part of Crozet

The Agulhas **- northern part of Crozet**

1 LME: Antarctic **(LME 61)**

The EU Overseas Antarctic/Subantarctic region includes parts of French Southern and Antarctic Territories (French acronym *TAAF – Terres Australes et Antarctiques Françaises*), encompassing the islands of St Paul and Amsterdam, the Crozet archipelago and the Kerguelen Islands, the British South Georgia and the South Sandwich Islands (SGSSI) and the British Antarctic Territories (BAT), including South Shetland Islands and South Orkney Islands, which comprises the region south of 60°S latitude covered by the Antarctic Treaty[91] (see below). With over 4.6 million km² of marine territory this European Overseas region is the second largest after the Pacific region.

Characterized by extreme prevailing climate conditions, with few human inhabitants, the Antarctic and Subantarctic region has a diverse and highly abundant marine biodiversity with one fifth of the recorded species of the Southern Ocean, and benthic organism diversity comparable to Galapagos. The area hosts higher proportions of endemic species compared to the Arctic. Species with sophisticated adaptation have evolved under these extreme conditions.

TAAF and SGSSI in the Southern Ocean are home to large seabird populations, reaching over 30 million pairs for South Georgia and the South Sandwich Islands and up to 60 tonnes/km² on the Crozet archipelago (part of TAAF), also nicknamed the "25 million birds island". The marine environment around South Georgia and South Sandwich Islands is exceptional for its species diversity, abundance and biomass, with at least 100 recorded fish species only in the waters surrounding South Georgia. However, it is still poorly studied.

King penguin nesting beaches in Crozet, French Southern Lands © TAAF, photo by Nelly Gravier

The once heavily exploited whale populations in the Subantarctic region are slowly growing again. However, several remain threatened, including the Blue Whale (*Balaenoptera musculus*, EN) and the Humpback Whale (*Megaptera novaeangliae,* LC). The Polar and Sub-polar region also face substantial threats from exploitation of natural resources through over-

91 According to the Convention of the Antarctic Treaty nothing shall "...(a) constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in the Antarctic Treaty area or create any rights of sovereignty in the Antarctic Treaty area;" (CCAMLR Basic Documents)

fishing and colonization by invasive species. Their ecosystems are the most affected by climate change, with a number of significant direct impacts on biodiversity already documented in both hemispheres.

Group of orcas in the Southern Ocean © Paul Tixier

A large marine ecosystem (LME 61) was described for the Antarctic region and is defined by the Antarctic Convergence or the Antarctic Polar Front, which flows around the Antarctica, providing a boundary between the cold, northward-flowing Antarctic waters and the relatively warmer waters of the Subantarctic further North. The Antarctic LME is characterized by a permanent ice-cap, holding around 70% of the Earth's fresh water, and extreme weather conditions, which together with limited light penetration defines biological productivity and gave rise to species with sophisticated adaptation mechanisms. Nutrients released by upwelling and cold water currents stimulate plankton blooms. The area between the French Crozet Islands, Prince Edward Islands and Del Cano Rise was also recognised as EBSA.

Regional agreements

Secretariat of the Antarctic Treaty
Secrétariat du Traité sur l'Antarctique
Секретариат Договора об Антарктике
Secretaría del Tratado Antártico

Antarctica and its surrounding waters south of 60°S latitude have a special international status that is regulated under the Antarctic Treaty System. The Antarctic Treaty was adopted in 1959 and entered into force in 1961 "*Recognizing that it is in the interest of all mankind that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord*". The Antarctic Treaty constituted a precedent, an example of sovereignties deciding in concert to prevent conflict and to make a continent and its waters a nuclear-free area for the sake of peace. Further to this major milestone, other international environmental laws and subsequent regional instruments were adopted: the Agreed Measures for the conservation of the Antarctic Fauna and Flora (1964), the Convention on the Conservation of Antarctic Seals (1972), the Convention on Conservation of Antarctic Marine Living Resources (CCAMLR, adopted in 1980, entered into force in 1982), the Antarctic Treaty Protocol on Environmental Protection (1998). All these agreements form the Antarctic Treaty System.

CCAMLR

Article II of the **CAMLR Convention (CCAMLR)** establishes the foundation for the precautionary and the ecosystem approaches at the core of CCAMLR's decisions regarding marine living resources. The CCAMLR represents an international commission with 25 members[92], each with a designated Scientific Committee representative, and 11 additional countries that acceded to it. The commission agrees on conservation measures for using marine living resources in the Antarctic, based on the best available science.

The spatial protection of marine areas is defined in both, the Protocol of Environmental Protection with the possibility to create Antarctic Specially Protected Area (ASPA) or Antarctic Specially Managed Area (ASMA), and the CAMLR Convention. Article IX.2(f) and 2(g) of the CAMLR Convention indicates indeed that conservation measures, formulated on the basis of the best scientific evidence available, may designate the opening and closing of areas, regions or sub-regions for the purposes of scientific study or conservation, including special areas for protection and scientific study. In 2011, a dedicated conservation measure was adopted to provide a framework for the establishment of CCAMLR MPAs[93].

The CCAMLR Scientific Committee advised that the whole Convention Area should be equivalent to an IUCN Category IV MPA (habitat and species management area) and that areas within the Convention Area require further special consideration in a representative system of MPAs[94].

Regional Fisheries Bodies

BAT and SGSSI are also parties to the Agreement on the Conservation of Albatrosses and Petrels (ACAP), ratified by the UK in 2004. Parts of the region fall into

92 Among the 25 members are the EU, France, the UK, Spain

93 General framework for the establishment of CCAMLR Marine Protected Areas; Conservation Measure 91-04; CCAMLR-XXX, 2011.

94 Report of the 24th meeting of the Scientific Committee of the CCAMLR: CAMLR-XXIV, paragraph 3.54; 2005:

the Southern Indian Ocean Deep Sea Fishers Association area.

Objectives of the CCAMLR MPAs (extract from conservation measure 91-04):

(i) the protection of representative examples of marine ecosystems, biodiversity and habitats at an appropriate scale to maintain their viability and integrity in the long term;

(ii) the protection of key ecosystem processes, habitats and species, including populations and life-history stages;

(iii) the establishment of scientific reference areas for monitoring natural variability and long-term change or for monitoring the effects of harvesting and other human activities on Antarctic marine living resources and on the ecosystems of which they form part;

(iv) the protection of areas vulnerable to impact by human activities, including unique, rare or highly biodiverse habitats and features;

(v) the protection of features critical to the function of local ecosystems;

(vi) the protection of areas to maintain resilience or the ability to adapt to the effects of climate change.

Taking into account ocean connectivity, formal cooperative arrangements between the South Pacific Regional Fisheries Management Organisation (SPRFMO) and the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) were signed in April 2016.

International & Regional Designations in the EU Overseas Antarctic and Subantarctic region

1 Ramsar Wetland site (with marine connection)

French Southern Lands (TAAF)	Réserve Naturelle Nationale des Terres Australes Françaises/ Iles d'Amsterdam, Crozet, Kerguelen, Saint Paul	15,639 km² (marine)

Over 2.7 million km² of the EU Overseas waters in the Antarctic and Subantarctic region are protected – almost 100%, only the area south of 60° around the South Georgia and the South Sandwich Islands (falling under the Antarctic Treaty) are not covered by marine protection measures. The region encompasses 14% of all EU Overseas waters combined and 42% of the combined MPA coverage in the EU ORs and OCTs.

When created in 2006, the French Southern and Antarctic Lands (TAAF) National Nature Reserve encompassed around 52% of the territorial waters - up to 12 nautical miles from the shore line (15,700 km²). In December 2016, the reserve was extended to cover more than 670,000 km² or 40% of its waters – larger than France mainland – with over 120,000 km² as a fully protected no-take zone[95]. In order to ensure the protection of the entire trophic network, in March 2017, TAAF extended the protection zone of the nature reserve to the limit of its EEZ. With over 1.66 million km² the TAAF Reserve currently presents one of the world's largest protected areas and the largest National Nature Reserve of France, bringing French Overseas ma-

EU Overseas coastal and marine protected areas in the Antarctic and Subantarctic region

	European Overseas waters area km²	Coastal and marine protected areas (MPAs)			No-take zones (NTZs)			Marine mammal/ shark sanctuaries km²
		#	Area km²	% of waters area	#	Area km²	% of waters area	
French Southern and Antarctic Territories (TAAF district, FR) *Saint Paul & Amsterdam Island, Crozet, Kerguelen Islands*	1,662,970	3	1,662,766	100	5	127,919	7.7	No*
South Georgia and the South Sandwich Islands (UK)	1,230,298	1	1,070,000	87	11	20,431	1.7	No
Antarctic and Subantarctic region	**2,893,064**	**3**	**2,732,766**	94.5	**16**	**148,350**	**5.1**	**No****
Total for ABNJ in the Antarctic and Subantarctic region		2	2,184,027	-	2	1,214,000	-	No

Table 8: EU Overseas coastal and marine protected areas in the Antarctic and Subantarctic region, including Ramsar sites under protection. A list of individual protected area designations of this region can be found in Annex 6.

* While not officially declared marine mammal sanctuary all marine mammals in the TAAF national natural reserve are protected by a ministerial decree (1995).

** The International Whaling Commission designated the Southern Ocean around Antarctica as Whale Sanctuary in 1994.

95 TAAF communication on the reserve extension to 672,000 km² by interdepartmental decree in December 2016 and the extension of its protection zone to the EEZ limits by prefectoral order in March 2017.

rine protection level up to 33%. In 2016, France submitted a UNESCO World Heritage Site application for the islands of St Paul and Amsterdam, the Crozet archipelago and the Kerguelen Islands and their territorial waters up to 12 nm, comprising the limits of the TAAF national nature reserve from 2006.

Saint Paul, French Southern Lands © Bruno Marie

This vast region is also home to the 3rd largest protected area in the European Overseas: the sustainably managed multiple-use MPA (IUCN Category VI) of South Georgia, established in 2012, protects more than 1 million km² of the EEZ of SGSSI north of 60° S and includes 11 NTZs, covering 20,431 km² (2% of MPA) of shallow sea up to 200m. The area south of 60°S - not part of the MPA – is also a *de facto* NTZ, in which fishing licenses are not issued. All fishing in SGSSI waters is regulated and managed in accordance with the CCAMLR system, as well as stricter management regulations which are imposed by the Government of SGSSI.

As part of an ongoing programme on sustainable management of the Territory, the South Georgia and South Sandwich Islands Marine Protected Area (MPA) was revised in 2013 to additionally include a ban on bottom fishing deeper than 2,250 m, additional benthic closed areas in the depths fished for toothfish, a seasonal closure of the Antarctic krill fishery, and a pelagic closed area around the South Sandwich Islands (SGSSI MPA Management Plan, 2013). In addition, an ongoing project (2016-2018) on managing Antarctic krill fisheries is currently identifying more candidate marine areas for protection. Although an initial shallow marine survey was conducted around South Georgia in 2012, further research is needed to better conserve its extremely rich marine biodiversity

In this regard the, European BEST Initiative has supported projects[96] on the identification of important marine areas for macaroni penguins (*Eudyptes chrysolophus*, VU) in the UK and French OCTs as well as the development of baseline surveys on right whales in South Georgia waters in order to a) better inform the SGSSI MPA management when assessing whether MPA boundaries and fishery closure timings are appropriate for the southern right whale (*Eubalaena australis, LC)* feeding ground, and b) provide CCAMLR valuable information for spatial krill fishery management plans and ecosystem models.

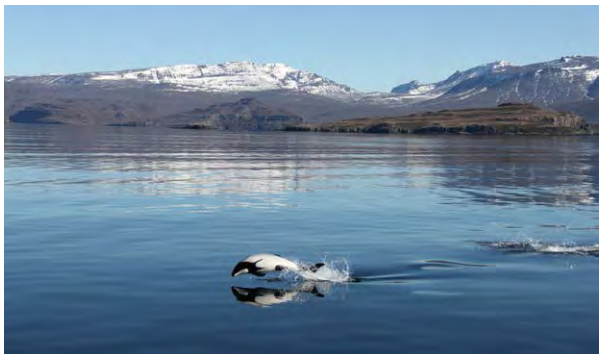
Southern right a around South Georgia © Emma Carroll

Since 2005 CCAMLR has pursued studies for setting up a network of MPAs in the Southern Ocean, resulting in the establishment of the first entirely High Seas MPA in 2009, covering 94,000 km² around the South Orkney Islands and the redefinition of the key areas both within and beyond national jurisdiction in 2011. To further advance this work, the TAAF administration initiated the scientific eco-regionalisation programme PERF (*Programme d'Eco-Régionalisation Français*) in partnership with the French Biodiversity Agency (formerly the French MPA Agency, *AAMP*), the French National Research Agency (CNRS) and the Natural History Museum (MNHN) in order to identify priority sites to be proposed as future MPAs beyond the territorial waters. This programme aims to support the establishment of a network of MPAs as well as provide more information on natural heritage, species distribution and human activities contributing thus to the development of the CCAMLR MPA network. The finalisation of PERF was identified as a priority in the French MPA strategy for the Antarctic and Subantarctic region[97].

Marine mammal and shark sanctuaries

96 More information on the BEST project factsheets: macaroni penguins & right whales.

97 Stratégie nationale pour la création et la gestion des aires marines protégées, Ministère de l'Écologie, du Développement durable, des Transports et du Logement, Agence des Aires marines Protégées, Mars 2012.



Commerson's or panda dolphin in the waters of Kerguelen Islands, French Southern Lands © Thibaut Thellier, TAAF

While a marine mammal sanctuary has not been officially declared, all marine mammals in the TAAF national natural reserve are fully protected by a ministerial decree from 1995. Further to a French proposal, the International Whaling Commission (IWC) adopted a resolution designating a Southern Whale Sanctuary in 1993[98], contiguous to the Indian Ocean Sanctuary (see chapter 0), both prohibiting commercial whaling. However, they do not create national sanctuaries.

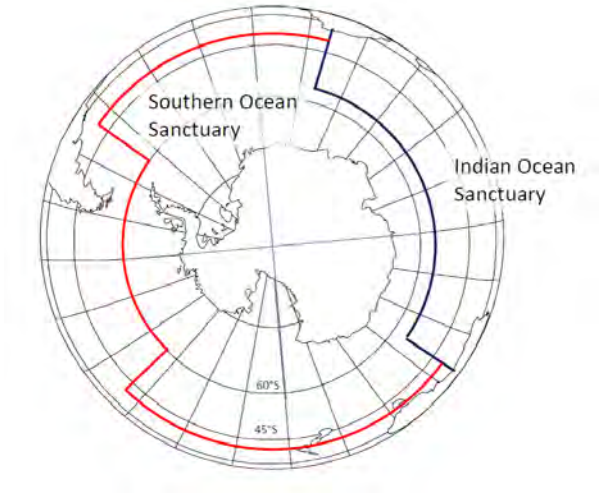


Figure 20: Boundaries of the Southern and Indian Ocean Sanctuary (Source: De la Mare et al., 2015).

High Seas MPAs

The Antarctic region launched negotiations that led to the creation of the first high seas MPA (South Orkney Shelf) as a conservation measure[99] in 2009; 20 years after a former conservation measure closed all finfish fisheries around the South Orkney Islands in 1989. With an area of 94,000 km^2 this MPA covers a large part of the Southern Ocean around the British Antarctic Territory (BAT), over 600 km north-east of the tip of the Antarctic Peninsula. It was the first MPA designated under the CCAMLR and has been officially presented as the first step towards a network of MPAs in the Convention Area[100]. End of 2016, CCAMLR agreed to establish a 2.09 million km^2 area of the Ross Sea with special protection from human activities and a 1.12 million km^2 no-take area (54% fully protected)[101]. The Ross Sea MPA shall be officially enforced in December 2017 for a 35-year period[102].

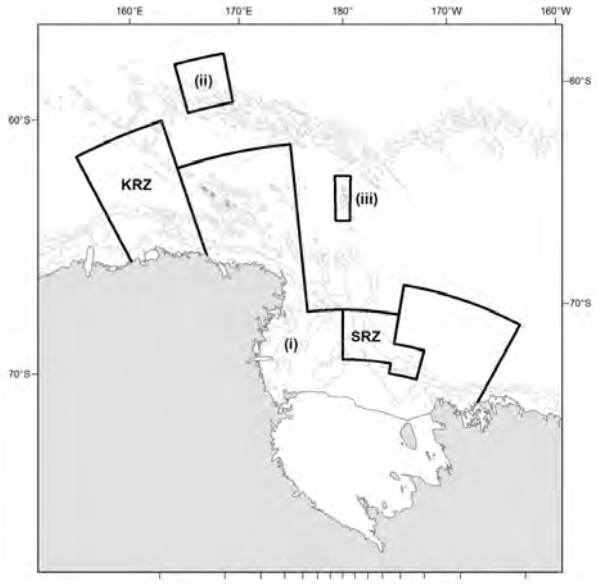


Figure 21: Ross Sea Region MPA in the Antarctic with the General Protection Zone, composed of areas (i), (ii), and (iii), the Special Research Zone (SRZ), and the Krill Research Zone (KRZ). (Source: CCAMLR)

However, several MPA proposals are still pending for the Antarctic MPA network, such as the Weddell Sea Marine Protected Area (WSMPA) supported by the European Union and its Members States[103] and an East Antarctic Representative System of MPAs (EARSMPA), submitted by Australia, the European Union and its Member States, which has been discussed and revised several times [104].

98 Resolution on a Sanctuary in the Southern Ocean; IWC Resolution 1993-6; 45th Annual Meeting, 1993.

99 Protection of the South Orkney Islands Southern Shelf; Conservation Measure 91-03; CCAMLR-XXVIII, 2009.

100 CCAMLR, conservation measure 91-04; General framework for the establishment of CCAMLR Marine Protected Areas (2011)

101 Ross Sea region marine protected area; Conservation Measure 91-05; CCAMLR-XXXV, 2016.

102 CCAMLR's announcement to create the world's largest MPA

103 CCAMLR-XXXIV/BG/37; CCAMLR-XXXV/18;

104 CCAMLR-XXXII/34 Rev. 1; CCAMLR-XXXV/15 Rev. 2

The submitted WSMPA proposal consists of three management zones (see Figure 22)[105]:

1. General Protection Zone (GPZ): to provide protection of representative examples of pelagic and benthic ecosystems, biodiversity and habitats, including key species, top predators, and higher productivity areas, and the environmental and ecological conditions supporting them, to mitigate a number of actual and potential effects of human activities, to increase resilience to climate change, and to support research and monitoring to increase our understanding about the Antarctic ecosystems and the effects of climate change and human activities on these ecosystems.

2. Special Protection Zone (SPZ): to provide enhanced protection of known and potential vulnerable marine ecosystems, unique, rare or biodiverse and/or endemic habitats and features as well as to establish scientific reference areas to monitor the natural variability and long term changes on the Antarctic marine living resources, and to study effects of climate change and human activities on Antarctic ecosystems.

3. Fisheries Research Zone (FRZ): includes both fished and unfished reference areas to advance our understanding about the ecosystem effects of long-line fishing, and to continue to inform the science-based management of the region's toothfish stock (including life history hypotheses, biological parameters, ecological relationships, and variations in biomass and production of fish).

The proposal, submitted by the EU to the CCAMLR in October 2016, covers 1.8 million km^2 and is contiguous to the South Orkney Islands Southern shelf MPA. The WSMPA proposal highlights the fact that the "*Weddell Sea has largely pristine ecosystems and diverse marine living resources and that it is crucial for global ocean circulation and the world's climate, and is also an ideal area for studying ecosystem effects, resilience and adaptive capacity to climate change and ocean acidification separate from the impacts of other human activities, such as fishing*" as well as the "*the benefits of ensuring that the resilience of Antarctic marine environments and their ability to adapt to possible adverse effects, including, inter alia, of climate change and ocean acidification, is maintained and/or enhanced*". The WSMPA proposal was also submit-

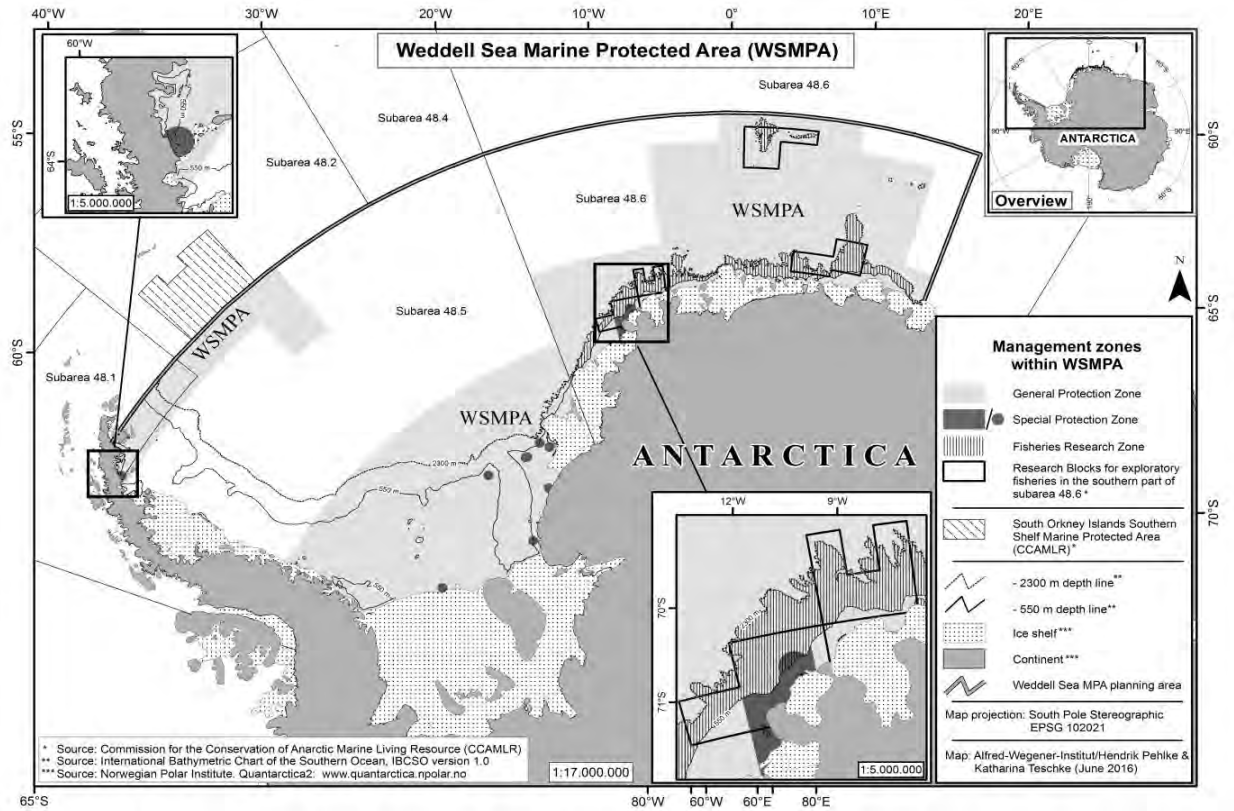


Figure 22: Map of the proposal for the Weddell Sea Marine Protected Area (WSMPA). (Source: CCAMLR)

105 Taken from the proposal on a conservation measure for the Weddell Sea Marine Protected Area (WSMPA); CCAMLR-XXXV/18.

ted as an EU voluntary commitment at the UN Ocean Conference in June 2017.

Another proposal for the East Antarctic Representative System of MPAs (EARSMPA)[106], under consideration by CCAMLR since 2012, aims at conserving representative portions of different biogeographic regions in the Southern Ocean with distinctive deep water flora and fauna and that support important ecosystem roles, such as feeding areas for marine mammals, penguins and other seabirds. It covers nearly 1 million km^2 and encompasses three separate areas (see Figure 23) to protect representative areas of pelagic and benthic biodiversity of the complex biogeographic provinces and sub-provinces of the East Antarctica planning domain, with sufficient spatial extent to maintain the long term viability and integrity of that biodiversity and to provide scientific

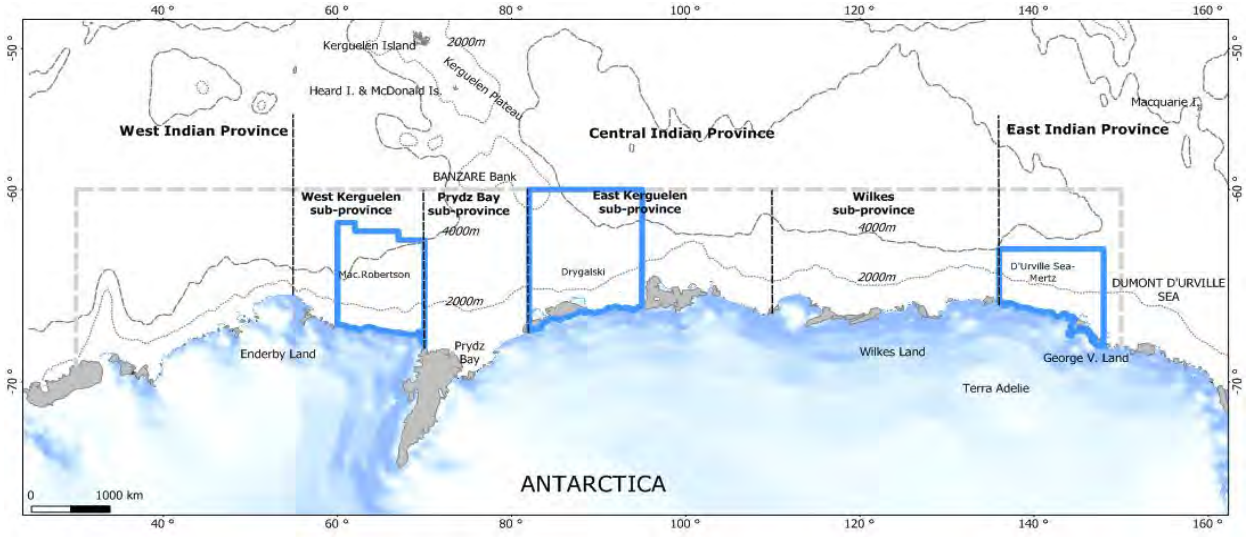


Figure 23: Map of the proposal for East Antarctic Representative System of MPAs (Source: CCAMLR)

reference areas of important ecosystem processes, areas important to the coastal and oceanic food webs, predator species, populations, so that enhanced productivity can be maintained in order to monitor the natural variability and long term changes on Antarctic marine living resources and the ecosystems of which they form a part[107]. In addition to these general objectives, the following specific objectives were defined for the three individual proposed MPAs contributing to the EARSMPA:

1. Mac.Robertson MPA: to protect the high productivity areas representative of ecosystem processes in the West Kerguelen sub-province, areas important to the coastal and oceanic food web north of the continental shelf and south of the Southern Antarctic Circumpolar Current Front as well as for summer foraging by marine mammals and birds.

2. MPA: to protect in the East Kerguelen sub-province biodiversity associated with benthic environmental types on the shelf and slope, particularly in relation to canyons, ice shelves, seamounts and the southern BANZARE Bank north of the MPA, areas important to the coastal food web north of the continental shelf south of the Southern Antarctic Circumpolar Current Front and adjacent to the Kerguelen Plateau as well as for summer foraging by marine mammals and birds.

3. D'Urville Sea-Mertz MPA: to protect designated vulnerable marine ecosystems (VMEs) and nursery areas for Antarctic silverfish, areas of biodiversity related to the habitats arising from the formation of Antarctic Bottom Water, biodiversity associated with benthic environmental types on the shelf and slope, particularly in relation to canyons, ice shelves, waters adjacent to the Mertz Glacier, areas important to the coastal and oceanic food web north of the continental shelf and south of the Southern Antarctic Circumpolar Current Front as well as for summer foraging by marine mammals and birds; to provide in the East Indian Province a scientific reference area in particular to monitor foraging activities during the critical breeding period of the Adélie and Emperor penguins, changes in biodiversity and the ecosystem as a result of the dynamics and change in bottom water formation in the waters of Commonwealth Bay and to the Mertz Glacier.

106 Revisions to the draft East Antarctic Representative System of Marine Protected Areas (EARSMPA) Conservation Measure; CCAMLR-XXXV/15 Rev. 2.

107 Taken from CCAMLR-XXXV/15 Rev. 2

Weddell seal © Bruno Marie

The MPA proposals for the Weddell Sea and East Antarctica fall within two of the nine large-scale planning domains (see Figure 24), which were defined in 2011 during a CCAMLR workshop on the development of MPAs within the Antarctic region. The planning domains were adopted by CCAMLR together with 11 priority areas identified in the same workshop.

Adélie penguin © Bruno Marie

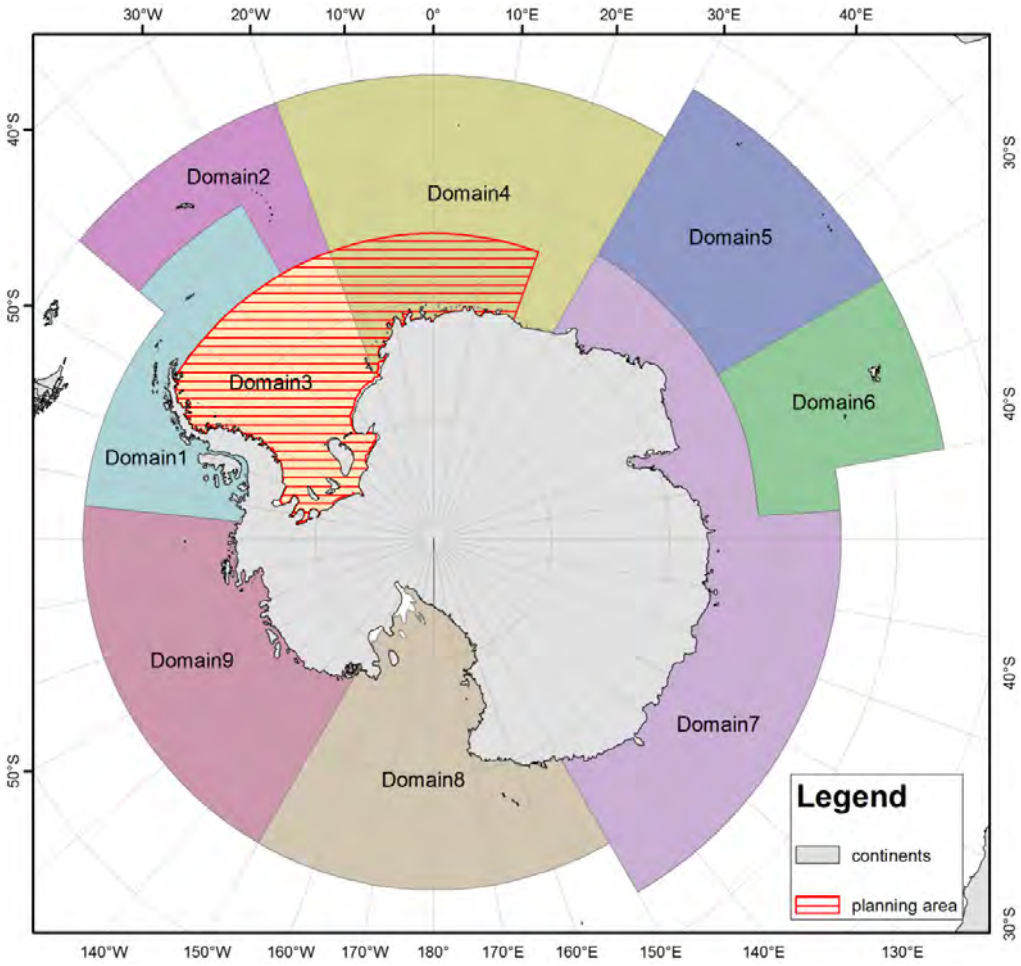


Figure 24: Map of Antarctica planning domains for the development of MPAs within the Antarctic region: 1: Western Antarctic Peninsula–South Scotia Arc (includes existing CCAMLR South Orkney MPA); 2: North Scotia Arc; 3: Weddell Sea (striped, planning area as proposed in 2013); 4: Bouvet–Maud; 5: del Cano–Crozet; 6: Kerguelen Plateau; 7: East Antarctica; 8: Ross Sea region; 9: Amundsen–Bellingshausen. (Source: CCAMLR)

Territories

British Indian Ocean Territory (BIOT)

Scattered Islands

Mayotte

Reunion Island

INDIAN OCEAN REGION

View on Grande Glorieuse © Stéphanie Légeron

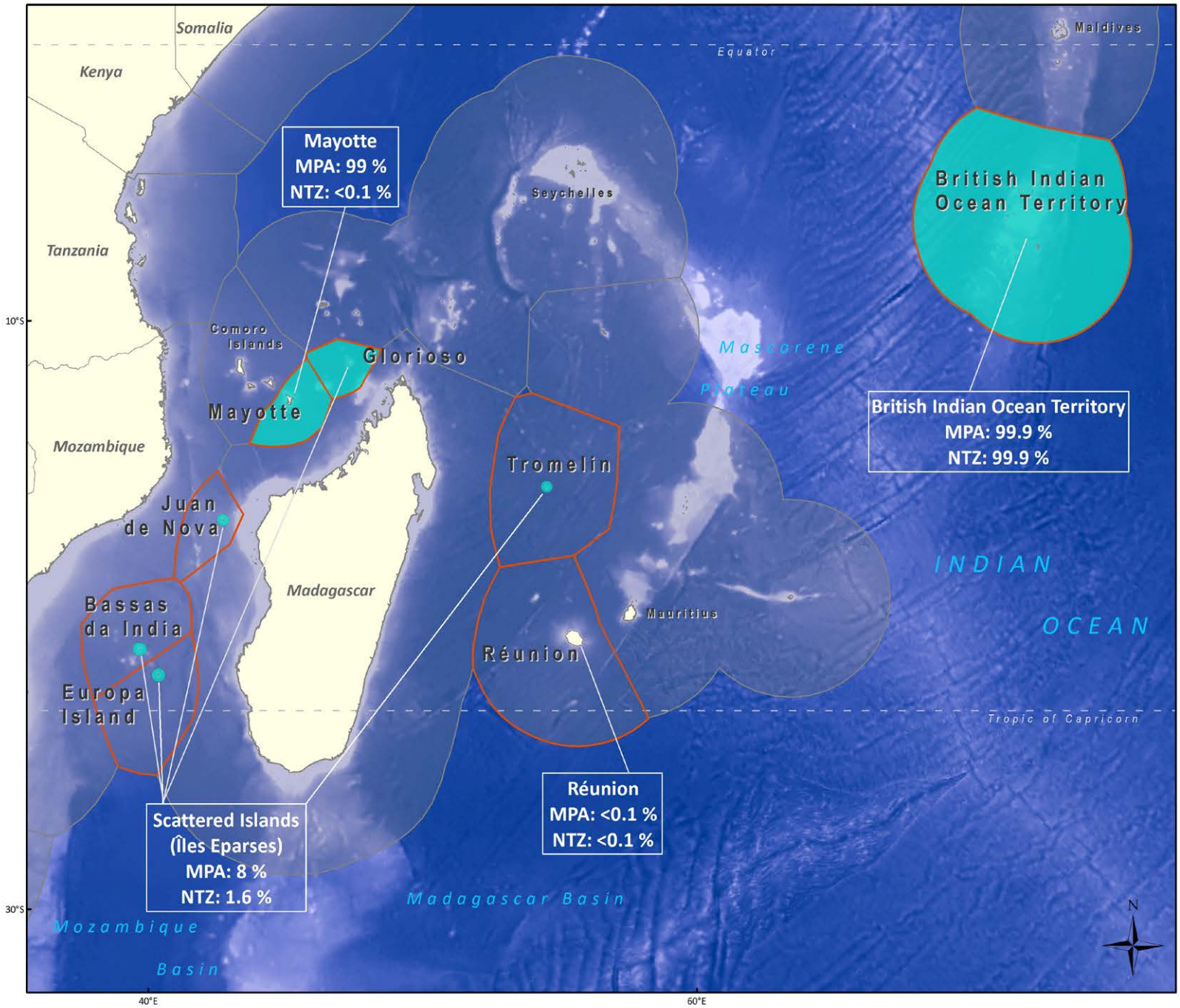
Pristine reef anemone with clown fish in the British Indian Ocean Territory © Alisdair Harris

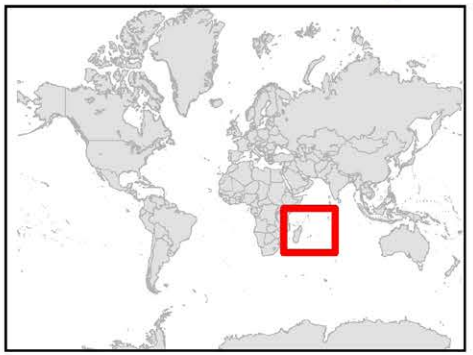
Turtle in mangroves, Europa, Scattered Islands © Bruno Marie

Mayotte, local fisherwomen © Agnes Poiret

Fish swarm, British Indian Ocean Territory © Jon Slayer

Marine and coastal conservation efforts in the European Overseas: Indian Ocean region





Summary for Indian Ocean European Overseas

Marine protected area (MPA):	45.6 %
No take zone (NTZ):	39.0 %

Legend

Exclusive Economic Zones (EEZ)

- European Overseas Countries and Territories and Outermost Regions
- Other

Protection in EU Overseas

- Marine protected areas incl. Ramsar sites under protection
- Marine sanctuary

Depth (m)

0
3000
6000

0 250 500 750
Kilometers

Data sources:
- EEZ: VLIZ
- Coastline/borders: FAO
- Bathymetry: GEBCO 2014

Map projection: World Mercator, EPSG:3395

Status: August 2017

Map 13: EU Overseas marine and coastal conservation efforts in the Indian Ocean region (Source: IUCN, 2017)

1.7. INDIAN OCEAN REGION

Regional overview

International Recognition of Indian Ocean EU Overseas' Marine Biodiversity

4 Ecologically or Biologically Significant Marine Areas (EBSAs)

Mozambique Channel

Includes Mayotte, 4 of 5 *Îles Eparses;* **Europa, Bassas da India, Juan de Nova and Glorioso Islands**

Îles Eparses (part of the Mozambique Channel)

Includes 4 of 5 *Îles Eparses;* **Europa, Bassas da India, Juan de Nova and Glorioso Islands**

Northern Mozambique Channel

Includes Mayotte, Glorioso Islands

Tromelin Island

Tromelin (*Îles Eparses* **east of Madagascar)**

1 Mission Blue Hope Spot

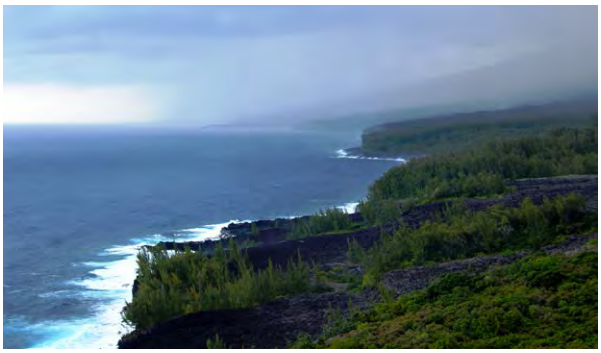
Chagos Archipelago (BIOT)

1 Large Marine Ecosystem (LME)

Agulhas Current **(LME 30)**

In the Indian Ocean there are three French Overseas entities positioned around Madagascar in the Southwest and the British Indian Ocean Territory (BIOT) South of India.

The two populated French overseas departments, **Mayotte and La Réunion**, and the uninhabited French *Îles Éparses* (Scattered Islands or the French Indian Ocean Territory), which constitute the 5th district of the French Southern and Antarctic Lands (TAAF), are very diverse islands, both geologically and biologically. Mayotte has one of the world's largest lagoons (1,100 km²) and a remarkable diversity of marine mammals with 22 species inventoried, criteria discussed for nomination as an UNESCO World Heritage Site. Its reefs have the most complex geomorphology of all small islands in the wider Indian Ocean region and the lagoon is protected by one of the world's few double barrier reefs. The reefs of Réunion are less developed and cover a smaller surface compared to other islands in the region due to its relatively recent geological formation.



Coastal landscape of La Réunion © Tanguy Nicolas

The reefs and atolls of **BIOT** – an archipelago of 58 islands - are among the most pristine in the Indian Ocean and harbour one of the world's largest coral atolls (the Great Chagos Bank). The waters surrounding the 55 low-lying coral islands of the Chagos Archipelago are also home to mid-ocean ridges, trenches and abyssal plains and were identified as one of the Mission Blue *Hope Spots*.

Fish on almost pristine reef, BIOT © Anne Sheppard

The French Overseas Territory ***Îles Eparses*** **(Scattered Islands)** – an administrative unit rather than a single geologic unit – consist of four uninhabited small coral islands - Glorioso Islands (or Glorieuses), Juan de Nova, Europa, Tromelin - an atoll (Bassas da India) and a submerged reef (Banc du Geyser), dispersed in the Mozambique Channel west of Madagascar, except for Tromelin, located east of Madagascar. Classified as nature reserves since 1975, the islands host distinct vegetation and large reefs with a great variety of corals. Banc du Geyser within the Glorioso Islands' EEZ is a mostly submerged active coral reef bank southwest of Glorioso Islands with two small sandy cays. The Scattered islands are listed as tentative World Heritage marine sites.

Tromelin, Îles Eparses (Scattered Islands) © Matthieu Le Corre

Four of the five *Îles Eparses* part of the Mozambique Channel (except Tromelin) are recognized as an individual EBSA by the CBD, and as part of the larger EBSA describing the entire Mozambique Channel, also including Mayotte, for its oceanographic features (strong currents and eddies), which contribute to a highly productive ecosystem with a wide range of species. The importance of this region was recognized again in the Northern Mozambique Channel EBSA, a homogeneous ecological biogeographic sub-unit including Mayotte and Glorioso Islands, which presents the highest concentration of biodiversity in this area, also considered the Coral Triangle of the Western Indian Ocean (Obura, 2012).

Tromelin Island, the only *Îles Eparses* not located in the Mozambique Channel, was described as an EBSA for its importance as the most important green turtle nesting site in the Western Indian Ocean. The region surrounding Madagascar is described by the Agulhas Current large marine ecosystem (LME 30).

Mangroves on Europa (Scattered Islands) © Bruno Mariea

Regional agreements

The Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern Africa Region was signed in 1985, came into force in 1996[108] and was amended in 2010. Its complementary Protocol on Protected Areas and Wild Fauna and Flora in the Eastern African Region was adopted and entered into force at the same time. However the latest assessment shows that MPAs cover only 130,000 km^2 in the Western Indian Ocean region, representing solely 2% of the Western Indian Ocean countries' EEZs (Rocliffe *et al*. 2014, UNEP-Nairobi, 2015). Another Protocol for the Protection of the Marine and Coastal Environment of the Western Indian Ocean from Land-Based Sources and Activities was adopted in 2010 and a draft Climate Change Strategy for the Marine and Coastal Environment in the Nairobi Convention Area was submitted at the 8th Conference of Parties in 2015.

In 2001, States of the Indian Ocean and South-East Asian region as well as other concerned States signed a Marine Turtle Memorandum of Understanding, an intergovernmental agreement concluded under the auspices of the UNEP / Convention on Migratory Species (CMS), aiming to protect, conserve, replenish and recover marine turtles and their habitats of the Indian Ocean and South-East Asian region through the collective implementation of a Conservation and Management Plan[109].

108 Parties at the Nairobi Convention: Comoros, France, Kenya, Republic of Mauritius, Mozambique, Republic of Seychelles, Somalia and the United Republic of Tanzania.

109 Indian Ocean – South-East Asian Marine Turtle Memorandum of Understanding: http://www.ioseaturtles.org/index.php

Regional Fisheries Bodies

In the Indian Ocean region there are three fisheries regulation bodies relevant to the European Overseas entities: the Indian Ocean Tuna Commission (IOTC), a multilateral treaty that entered into force in 1996 to manage tuna and tuna-like species in the Indian Ocean; the Southwest Indian Ocean Fisheries Commission (SWIOFC) established by the FAO Council in 2004 with the objective to promote the sustainable utilization of the living marine resources of the region, through appropriate management of living marine resources and sustainable development. The SWIOFC also aims to address common problems of fisheries management and development faced by commission members. The South Indian Ocean Fisheries Agreement (SIOFA) was adopted in 2006 to ensure the long-term conservation and sustainable use of the fishery resources in waters beyond national jurisdictions as well as a sustainable development of fisheries, taking into account the need of developing States, in particular the least-developed among them as well as Small Island Developing States (SIDS). With regards to access of third country vessels to EU waters, currently Seychelles-flagged vessels are fishing in Mayotte[110].

EU Overseas coastal and marine protected areas in the Indian Ocean region

Local fishing, Mayotte © Capucine Cosnier

International & Regional Designations - Indian Ocean EU Overseas

3 Ramsar Wetland sites

Mayotte	La Vasière des Badamiers (International / French)	0.7 km²
BIOT	Diego Garcia	354 km²
Scattered Islands	Europa Island (Île d'Europe)	2058 km²

	European Overseas waters area km²	Coastal and marine protected areas (MPAs)			No-take zones (NTZs)			Marine mammals sanctuaries km²
		#	Area km²	% of waters area	#	Area km²	% of waters area	
Reunion Island (FR)	314,515	2	38.5	0.01	5	2.2	<0.01	No
Mayotte (FR)	69,045	6	68,381	99	2	14.4	<0.1	No
Îles Eparses/Scattered Islands (TAAF district) (FR):	640,964	8	51,390	8.0	6	11,077	1.7	No
Glorioso Islands	*43,614*	*3*	*43,614*	*100*	*2***	*3,301*	*7.6*	*No*
Juan da Nova	*61,050*	*1*	*1,849*	*3.0*	*1*	*1,849*	*3.0*	*No*
Bassas da India	*123,700*	*1*	*2,209*	*1.8*	*1*	*2,209*	*1.8*	*No*
Europa	*127,300*	*2*	*2,065*	*1.6*	*1*	*2,065*	*1.6*	*No*
Tromelin	*285,300*	*1*	*1,653*	*0.6*	*1*	*1,653*	*0.6*	*No*
British Indian Ocean Territory (UK) *	638,062	2	638,556	99.9	1	638,062	99.9	No
Total Indian Ocean region	**1,663,080**	**24**	**757,872**	**45.6**	**14**	**649,156**	**39.0**	**No*****

Table 9: EU Overseas coastal and marine protected areas in the Indian Ocean region including Ramsar sites under protection. A list of individual protected area designations of this region can be found in Annex 7.

* The Chagos no-take MPA was declared illegal (see text below)

** Both no-take zones are part of the larger MPA Glorioso Marine Park.

***The International Whaling Commission designated the entire Indian Ocean south to 55°S as Whale Sanctuary in 1979, which prohibits commercial whaling but does not provide general protection.

110 Proposal for a Council Decision on the conclusion, on behalf of the EU, of the Agreement between the EU and the Republic of the Seychelles on access for fishing vessels flying the flag of the Seychelles to waters and marine biological resources of Mayotte, under the jurisdiction of the EU. COM/2014/0139 final

Almost half of the European Overseas waters in the Indian Ocean region are under some degree of protection, an area of over **750,000 km²**, almost the combined size of France and the UK. The degree of protection in this region is high with 39% of waters not allowing any extraction.

These no-take zones constitute 85% of the MPAs in the Indian Ocean Overseas waters and largely result from the fully no-take MPA in the British Indian Ocean Territory (BIOT, Chagos MPA), which covers nearly the entire EEZ except for a 3 nm zone around the islands of Diego Garcia. However, in March 2015, a UN tribunal ruled that the UK acted illegally when declaring the MPA in Chagos in 2010 as they claimed sovereignty and exercised territorial control over the Chagos Islands without following procedural obligations under UNCLOS. The tribunal found that the UK's unilateral declaration disregarded Mauritius' rights, which also claim sovereignty over the Chagos Archipelago as a coastal state under the UNCLOS[112]. Consultations with Mauritius were hoped for when the 50-year lease of Diego Garcia, the largest island, had to be renewed in 2016. Based on an independent feasibility study followed by a full public consultation in the UK, Mauritius and the Seychelles, in March 2016 the British Government announced their decision against resettlements of Chagossians[113] and promised compensation payments[114].

Green turtle hatching, Europa, Scattered Islands © Bruno Marie

The entire EEZ of Mayotte and Glorioso Islands are under protection through the two adjoining marine natural parks: The Parc naturel marin de Mayotte, declared in 2010, adopted its management plan in December 2012, and the Parc naturel marin des Glorieuses, declared in 2012, adopted its management plan in January 2015. The Marine Park of Glorioso is one of the seven MPAs surrounding the islands of the French Îles Eparses (Scattered Islands). Six no-take zones were established in 2010 in the territorial waters of Bassas da India, Europa, Juan de Nova, Tromelin and Glorioso Islands as well as 10 nm around Banc du Geyser. While officially prohibiting all fishing activities, illegal fishing by Malagasy reef and sea cucumber fisheries as well as touristic recreational fishing are big problems around Glorioso Island, Juan de Nova and Bassas da India (Le Manach & Pauly, 2015).

Octopus fishing woman, Djarifa, Mayotte © Agnes Poiret, AAMP

The large coverage of existing MPAs in the European Overseas Indian Ocean region is the result of protecting both, coastal and offshore ecosystems. While the no-take zones around Bassas da India, Europa, Juan de Nova and Tromelin as well as the protection of the entire EEZ of Glorioso Island and BIOT do not impact local livelihoods, the Mayotte Marine Park covers a populated area and therefore requires an integrated management approach for the effective protection of marine environments that allows a sustainable use of natural resources. However, with less than 1% no-take zones Mayotte's waters are subject to overfishing, shown by a steady decline of catch quantity and composition (Herfaut, 2006). Poaching in coastal zones, mainly marine turtles, crabs, lobsters and birds (Wagner et al. 2012) and illegal fishing practices additionally threaten marine and coastal biodiversity.

The BEST initiative has supported two projects to strengthen the conservation and management of marine turtles in the Indian Ocean: Coca Loca, studying loggerhead turtle movement and establishing region-

111 Although located in the Indian Ocean, St-Paul and Amsterdam islands as well as the Crozet and Kerguelen archipelagos are included in The Antarctic and Subantarctic region.

112 Information on the *In the Matter of the Chagos Marine Protected Area Arbitration* (Mauritius v. UK) is available on the Permanent Court of Arbitration website.

113 Chagossians were forced by the UK to leave the island between 1968 and 1973 but they still have legally binding rights to fish and extract in the waters and thus would benefit from any minerals or oil to be discovered after their return.

114 Written statement by the British Government on the resettling of Chagossians in the BIOT

al cooperation to implement best practices in fisheries and species management; and COPRA to strengthen conservation and management of seagrass meadows as habitat for marine turtles.

No specific MPA development strategies have been identified in ORs and OCTs of the Indian Ocean region. However, the French ORs and OCTs are also integrated in the French MPA strategy, adopted in 2012. In addition, in 2011 the French Government adopted the Southern Indian Ocean Blue book aiming at uniting French Indian Ocean territories around a common maritime ambition. This document provides the basis for a number of mid and long-term initiatives planned by the French public authorities related to maritime governance, economic development in the fishing and energy industries, education, protection of the natural marine environment, research and innovation in marine sciences.

Coca Loca project on loggerhead turtles © Kelonia, photo by Stephane Ciccione

Marine mammal and shark sanctuaries

There are no marine mammal or shark sanctuaries declared for the waters of the Indian Ocean European Overseas. The International Whaling Commission designated the Indian Ocean Sanctuary in 1979, which prohibits commercial whaling in the whole of the Indian Ocean south to 55°S but does not create national sanctuaries. This sanctuary was later extended further south by a contiguous Southern Ocean Sanctuary (see chapter 1.6).

Silvertip shark © Anne Sheppard

The MIROMEN project, supported by the BEST initiative, studied the migration routes of Humpback whales around Reunion Island to reinforce conservation measures or to trigger the implementation of new management plans for this species at a local and regional level.

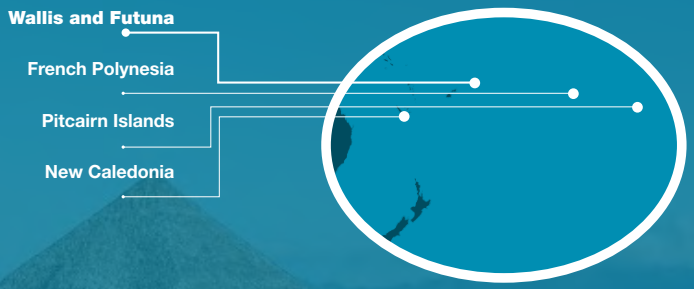
Tagging humpback whales to study their migration routes in the Indian Ocean, MIROMEN project © Globice, BNOI

High Seas MPAs

There are no High Seas MPAs in this region. IUCN has however conducted scientific explorations and legal analysis for an ecosystem approach of the seamounts in areas beyond national jurisdiction in the South Indian Ocean, which provided useful insights for future marine conservation actions[115].

115 See description of the Seamounts Project (2009-2013) and FFEM-SWIO Project (2014-2017).

Territories



PACIFIC REGION

Coastal Tourism infrastructre, Tahiti, French Polynesia © Carole Martinez

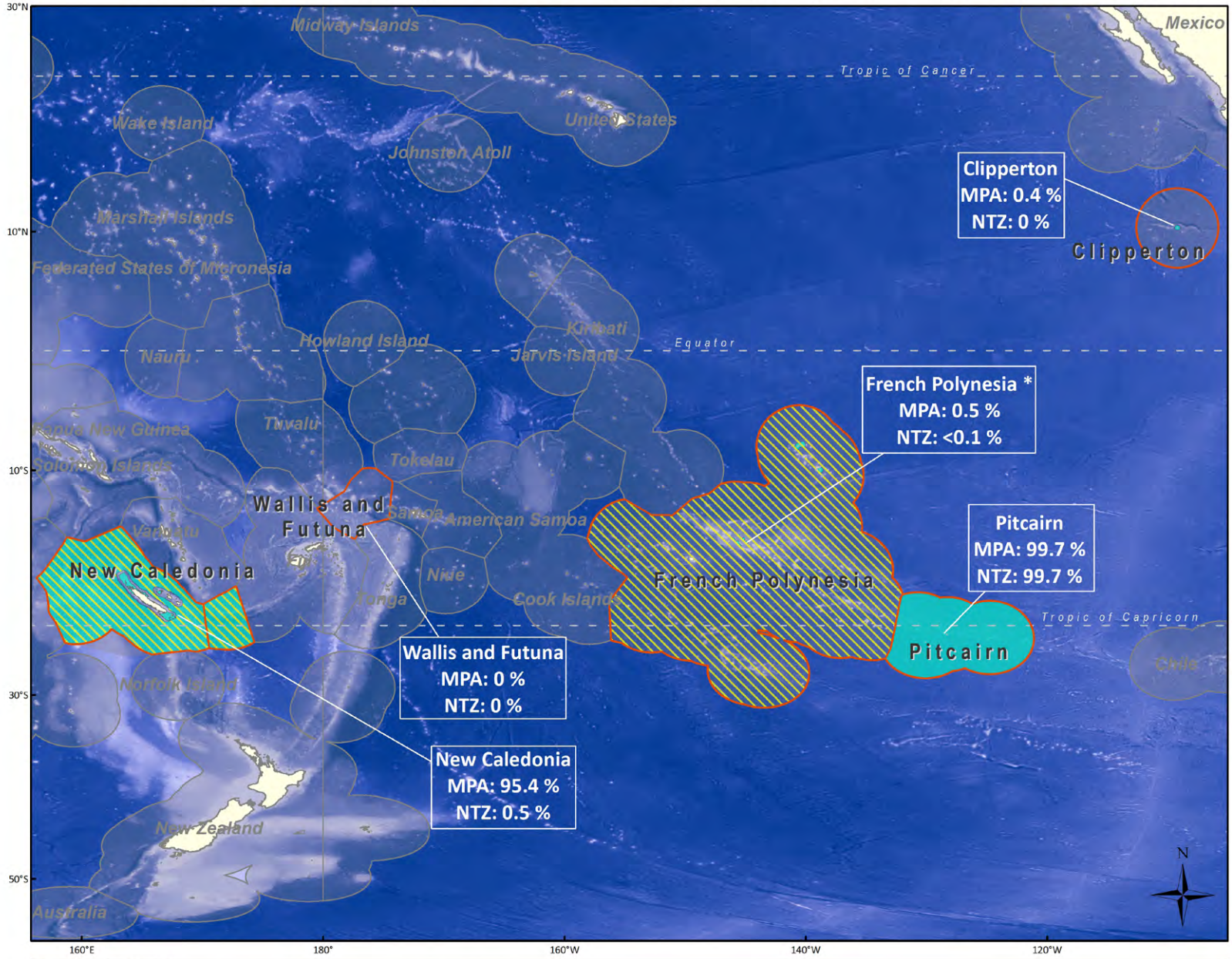
Traditional fishing in French Polynesia © Carole Martinez

Baby turtle, Entrecasteaux, New Caledonia
© Nouvelle-Calédonie-Direction des affaires maritimes

Pitcairn Island © Stewart McPherson

Motu, Wallis © Jean-Christophe Lefeuvre

Marine and coastal conservation efforts in the European Overseas: Pacific region



Summary for Pacific European Overseas

Marine protected area (MPA):	28.2 %
No take zone (NTZ):	11 %
Marine sanctuary:	79 %

* French Polynesia: not all MPAs are shown – data not available.

Legend

Exclusive Economic Zones (EEZ)

- European Overseas Countries and Territories and Outermost Regions
- Other

Protection in EU Overseas

- Marine protected areas incl. Ramsar sites under protection
- Marine sanctuary

Depth (m)

0
3000
6000

0 500 1000 1500
Kilometers

Data sources:
- EEZ: VLIZ
- Coastline/borders: FAO
- Bathymetry: GEBCO 2014

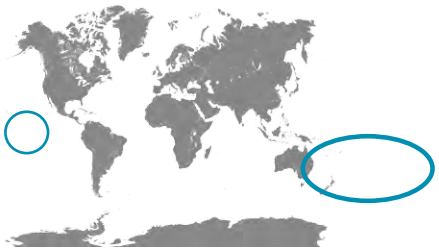
Map projection: World Cylindrical Equal Area, EPSG:8287

Status: August 2017

Marine Sanctuaries:
French Polynesia (EEZ, 4,771,088 km2) – protection of all marine mammals and sharks
New Caledonia (marine park, 1,289,419 km2) – protection of whales, sharks and turtles

Map 14: EU Overseas marine and coastal conservation efforts in the Pacific region (Source: IUCN, 2017)

1.8. PACIFIC REGION



Regional overview

International Recognitions of the Pacific EU Overseas Marine Biodiversity

6 Ecologically or Biologically Significant Marine Areas (EBSAs)

New Hebrides Trench Region **– partially in New Caledonia's EEZ**

South of Tuvalu/Wallis and Fortuna/North of Fiji Plateau **– parts of Wallis & Futuna's EEZ**

Northern Lord Howe Ridge Petrel Foraging Area **– partially in New Caledonia's EEZ**

Clipperton Atoll **– Clipperton**

Clipperton Fracture Zone Petrel Foraging Area **– West of Clipperton**

Seamounts of West Norfolk Ridge **– South of New Caledonia's EEZ**

1 Mission Blue Hope Spot

French Overseas Territories Wallis & Futuna

2 Biodiversity Hotspots

New Caledonia

Polynesia-Micronesia **(incl. French Polynesia)**

The Pacific region includes the three French Overseas Countries and Territories of New Caledonia, Wallis and Futuna and French Polynesia, the Clipperton coral atoll, and the British Overseas Territory of Pitcairn.

Wallis and Futuna consist of two island groups, consisting of three main volcanic tropical islands: Wallis, also called Uvea, and the Hoorn Islands (French: *Îles Horne*) Futuna and Alofi, 260 km to the southwest. Due to their relatively recent geological formation (2 million years ago) and extreme geographical isolation, biological diversity is somewhat limited. Their volcanic origin gave rise to huge fringing barrier reefs and seamount. The waters of Wallis and Futuna are part of an Ecologically or Biologically Significant Area (EBSA), which was identified by the CBD for its high proportion of seamounts and potential deep-sea coral habitats and high productivity of marlin and tuna. In addition, Mission Blue recognized Wallis and Futuna as *Hope Spot* of the Ocean in 2013.

New Caledonia, a global biodiversity hotspot, is home to extremely rich and marine biodiversity with 25 marine mammal and 48 shark species inventoried. Its barrier reef of 1,600 kilometres covering 14,000 km² (Petit &Prudent, 2008) is the world's second-longest double-barrier coral reef and the New Caledonian lagoon of 24,000 km² is acknowledged as UNESCO World Heritage Site (WHS)[116] for its reef diversity and associated ecosystems. With the declaration of its entire exclusive economic zone (EEZ) of about 1.3 million km² as the Coral Sea Nature Park (*French: parc naturel de la mer de Corail*) in 2014, New Caledonia created one of the world's largest MPAs. The marine park is home to France's deepest oceanic site at 7919 m. New Caledonia has relevance for three Ecologically or Biologically Significant Areas (EBSAs) as defined by the CBD: the Seamounts of West Norfolk Ridge, located to the South between New Caledonia and New Zealand; the Northern Lord Howe Ridge Petrel Foraging Area to the Southwest, partially within New Caledonia's EEZ, and the New Hebrides Trench Region to the East straddles a portion of the New Caledonian waters.

Walpole, uninhabited island of New Caledonia's Loyalty Islands © Nouvelle-Calédonie-Direction des affaires maritimes

116 Global assessment of values, threats, protection and management as part of the IUCN World Heritage Outlook rated the conservation outlook of this site good with some concerns.

Covering almost 5 million km² and extending over an area as wide as the EU, **French Polynesia** is composed of 118 geographically dispersed islands and atolls, which are divided into 5 island groups: the Society Islands *(Îles de la Societé)*, the Tuamotu Archipelago *(Archipel des Tuamotu)*, the Gambier Islands *(Îles Gambier)*, the Marquesas Islands *(Îles Marquises)* and the Austral Islands *(Îles Australes)*. The Polynesian islands stand out by their remoteness from any continent and are part of a global biodiversity hotspot, including Micronesia, Polynesia and Fiji. With over 20% of the earth's coral reef and lagoon ecosystems (Petit & Prudent, 2008), French Polynesia is home to one of the most diverse coral reef formations in the world – still generally in good condition – and one of the most studied. The Moorea lagoon was designated a Ramsar site. Taputapuātea was listed as UNESCO World Heritage Site in 2017. The site encompasses a marine and coastal area, whose environmental preservation is important.

Motu Oatara, Raiatea Island, French Polynesia © Fred JACQ

Clipperton Island (also called *Île de La Passion* in French) is a 9 km² coral atoll in the Northeast Pacific Ocean and a French Overseas territory since 1931 with an EEZ of 435,000 km². The isolated 3-4 km wide oceanic atoll was identified as one of the 232 ecoregions[117] in the world (Spalding et al., 2007) and as an Ecologically or Biologically Significant Area (EBSA). Its nearshore deep waters are home to one of the most tuna-rich parts of the Pacific Ocean and the waters west of its EEZ were identified as EBSA (Clipperton Fracture Zone Petrel Foraging Area). The uninhabited island represents a great laboratory to study climate change impacts in the absence of human population.

Pitcairn consists of a group of four volcanic islands - Pitcairn, Oeno, Ducie and Henderson - spread over several hundred square kilometres with Ducie being the most southern coral atoll in the world (Irving & Dawson, 2012). Some of the earth's deepest and most developed coral reef can be found the extremely clear waters surrounding Pitcairn with over 1,200 marine species, including some 350 species of reef fish, 22 species of whales and dolphins as well as marine turtles and birds - some of which are unique to the region (Irving & Dawson, 2012). Henderson Island, the largest of the Pitcairn Island group, is one of the world's most remarkable examples of an elevated coral atoll ecosystem with almost undisturbed biodiversity and was designated as an UNESCO WHS in 1988[118].

Humpback whale off Bounty Bay, Pitcairn Island © Rob Irving

Travel and tourism, including marine-focused tourism, contribute a third (USD 10.8 billion) to the total GDP in the South Pacific region and is forecasted to rise to 36% (USD 19.2 billion) of GDP by 2025 (WTTC Other Oceanic States, 2015)[119]. In French Polynesia, tourism represents an important source of income and the first export area for the local economy with 37% of the total exportations and 12 billion F CFP (IEOM, 2015).

Regional agreements

While there is no administered UNEP Regional Seas programme or convention, the Pacific benefits from several regional agreements and organisations. The

117 "Areas of relatively homogeneous species composition, clearly distinct from adjacent systems. The species composition is likely to be determined by the predominance of a small number of ecosystems and/or a distinct suite of oceanographic or topographic features. The dominant biogeographic forcing agents defining the ecoregions vary from location to location but may include isolation, upwelling, nutrient inputs, freshwater influx, temperature regimes, ice regimes, exposure, sediments, currents, and bathymetric or coastal complexity." (Definition of ecoregion according to Spalding *et al.* 2007)

118 Global assessment of values, threats, protection and management as part of the IUCN World Heritage Outlook rated the conservation outlook of Henderson Island WHS of significant concern.

119 The regional analysis by the World Travel & Tourism Council (WTTC) included the following countries and territories: American Samoa, Cook Islands, French Polynesia, Guam, Marshall Islands, Micronesia (Federated States of), New Caledonia, Niue, Northern Mariana Islands, Palau, Samoa, Tuvalu.

	European Overseas waters area km²	Coastal and marine protected areas (MPAs)			No-take zones (NTZs)			Marine sanctuaries km²
		#	Area km²	% of waters area	#	Area km²	% of waters area	
Pitcairn Islands (UK)	836,103	2	834,000	99.7	1	834,000	99.7	No
French Polynesia (FR)*	4,771,088	31	25,495	0.5	5	127	<0.1	Marine mammals, entire EEZ
New Caledonia (FR)	1,367,000	41	1,303,708	95.4	18	7039	0.5	Sharks, turtles and whales**, entire EEZ
Wallis and Futuna (FR)	258,270	0	0	0	0	0	0	No
Clipperton Island (FR)	431,273	1	1710	0.4	0	0	0	No
Total Pacific region	**7,663,734**	**75**	**2,164,913**	**28.2**	**24**	**841,153**	**11**	**6,060,506**

Table 10: EU Overseas coastal and marine protected areas in the Pacific region, including Ramsar sites under protection, marine World Heritage Sites (WHS) and Man and Biosphere Reserves. A list of individual protected area designations of this region can be found in Annex 8.

* French Polynesia has several different regulatory tools to create multisite MPAs

**Sperm (cachalot) and baleen whales (Mysticeti) are protected in the entire Coral Sea Natural Park.

organisations include the Secretariat of the Pacific Regional Environment Programme (SPREP), the primary regional organisation concerned with environmental management, and the Pacific Community (SPC), supporting aspects of sustainable development. SPREP serves as the Secretariat for three Conventions: The 1976 Convention on the Conservation of Nature in the South Pacific (the Apia Convention), came into force in 1990. Its operation was suspended in 2006, the 1986 Convention for the Protection of the Natural Resources and Environment of the South Pacific region (the Noumea Convention[120]) entered into force in 1990 and the 1995 Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region (the Waigani Convention) entered into force in 2001.

Regional Fisheries Bodies

In 2009, the Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean was adopted and established the Commission of the South Pacific Regional Fisheries Management Organisation (SPRFMO)[121] in 2012. French Polynesia, New Caledonia and Wallis & Futuna are also participating territories in the Western and Central Pacific Fisheries Commission (WCPFC), established by the Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPF Convention), which entered into force in 2004 after 10 years of negotiations. In the Pacific, the SPC and the South Pacific Forum Fisheries Agency (FFA) have significant roles in contributing to tuna fisheries management although neither is a regional fisheries management organization.

Traditional net fishing in New Caledonia © Maël Imirizaldu

EU Overseas coastal and marine protected areas in the Pacific region

Over **2.1 million km²** or **28 %** of the Pacific EU Overseas coastal and marine areas are protected, which represents almost 10 % of all EU Overseas waters.

120 The Convention for the Protection of Natural Resources and Environment of the South Pacific Region (the Noumea Convention) and its Protocols obliges Parties to endeavour to take all appropriate measures to prevent, reduce and control pollution from any source and to ensure sound environmental management and development of natural resources, using the best practicable means at their disposal and in accordance with their capabilities. Twelve Pacific Island Countries are Party to the Noumea Convention

121 The Commission has currently 14 members, including the EU

The waters of the Pitcairn Islands – a fully protected marine reserve

In September 2016 the UK government designated the world's largest fully protected Marine Reserve of 834,000 km², which encompasses the entire EEZ of **Pitcairn** excluding the 12 nm territorial sea radius surrounding the islands for local subsistence fishing[122]. This reserve contributes to the UK's intention to establish a "Blue Belt" of MPAs around its overseas waters. Due to Pitcairn's remote location, surveillance and enforcement will prove to be a difficult task. However, the British government successfully tested (January 2015–March 2016) an integrated platform that makes use of multiple data sources from drones and satellite-based tracking to analyse vessel behaviour (Project Eyes on the Seas) and coordinates the development of a long-term surveillance plan. This is also the first time a government proposed detailed monitoring and enforcement strategy for a remote marine reserve ahead of its designation.

International & Regional Designations – Pacific EU Overseas

1 Ramsar Wetland sites (with marine connection)

French Polynesia	Lagon de Moorea	50 km²

3 Natural World Heritage Sites (with marine connection)

New Caledonia	Lagoons of New Caledonia	3145 km² (marine)
Pitcairn	Henderson Island	37 km²
French Polynesia	Taputapuātea (cultural site with marine importance)	ca. 30 km² (marine)

1 Man and Biosphere Reserve (MaB)

French Polynesia	Commune de Fakarava	19,785 km² (marine)

The marine conservation efforts of the French OCTs in the Pacific are included in the French MPA strategy. As autonomous Territories, New Caledonia, Wallis and Futuna and French Polynesia have environmental departments as well as their own environmental laws and policies.

122 Pitcairn Islands Marine Protected Area Ordinance 2016 (13 Sept 2016)

New Caledonia – Management plan for the large Coral Sea Park to be consolidated

To date, the largest MPA of this region is the Natural Park of the Coral Sea, covering all marine waters of **New Caledonia** extending from 12 to 200 nm (almost 1.3 million km²). The French MPA Agency provided technical support to the New Caledonian government for the creation of the marine park, which was declared in April 2014 as an area of sustainable use of natural resources (IUCN cat. VI). Thanks to this creation, the marine protected area coverage of French national waters increased to over 16% in 2014. However, a management plan is still to be adopted and public consultations on the draft plan were launched in February 2017. The Natural Park encompasses one part of the 6 Lagoons of New Caledonia World Heritage Site, the Entrecasteaux Atolls, which are also a designated no-take marine reserve. A number of smaller MPAs - ranging from strict nature reserve (IUCN cat. I) to sustainable use area (IUCN cat. VI) - are located in the territorial waters (up to 12 nm from the shoreline) not covered by the Coral Sea Marine Park.

Surprise atoll, part of Entrecasteaux reef World Heritage site
© Nouvelle-Calédonie-Direction des affaires maritimes

Wallis and Futuna – A marine conservation strategy to be defined and developed

Although MPAs do not yet exist in **Wallis and Futuna**, several studies provided useful information and data for supporting the creation of MPAs such as a study on a Marine Spatial Management Plan (*Plan de Gestion des Espaces Maritimes - PGEM*)[123] as well as an extensive collection of traditional knowledge on marine resources and their management. A climate change ad-

123 *Etude de faisabilité d'un Plan de Gestion des Espaces Maritimes à Alofi, Futuna et Wallis, Rapport de mission, CRISP, M. Verducci, M Juncker, 2007.*

aptation strategy was adopted in 2017[124] . The strategy objectives and priority actions highlight that the "*Territory should reinforce the conservation and management of biodiversity, terrestrial and marine ecosystems with the creation of new protected and managed areas*" and "*the development and implementation of a marine resources management plan constitutes a priority for the Territory*" [125]. The identified key biodiversity areas identified during the BEST Initiative ecosystem profile consultation process could serve as the basis for the development of a network of protected areas. Wallis and Futuna also currently focuses on limiting land-based pollution to its marine environment and has conducted significant work to improve waste management.

Mangroves in Makeke, Wallis Island © Chloé Desmots

Clipperton Island - Recent marine conservation efforts

An MPA protecting a biotope within the territorial waters (12 nm) around **Clipperton Island** was officially communicated by the French Government in an order[126] in November 2016. While this MPA in the territorial waters represents a first step to protect Clipperton's marine species and biotope, IUCN experts suggested creating an MPA extending out 100 nm from the island. Nevertheless, even this extended area would still only represent 25% of Clipperton's waters[127]. Earlier that year a feasibility study for an international observatory, commissioned by the French Government, suggested that Clipperton Island could be divided into three parts: a fully protected area, especially for seabirds, a scientific area and a port area. The study recommends urgent conservation and management measures and establishing an international scientific station on the island (Folliot, 2016). The French Government announced support for a follow-up scientific mission in 2017.

The vast French Polynesia maritime domain - A marine conservation challenge

The 118 islands and atolls of **French Polynesia** stretch over more than 2,000 km in one of the world's largest maritime domain of almost 5 million km^2, which represents a management, conservation and surveillance challenge. French Polynesia defined several regulatory tools (see text on next page) related to marine protected (MPAs) and marine managed areas (MMAs), including the innovative status of educational marine managed areas (EMMAs). Yet to date, less than 1% of French Polynesia's waters are protected or managed as either fully protected no-take reserves, MPAs, marine managed areas (MMAs) or traditionally marine management areas *(rahui)*. A revision of the existing French Polynesia Environmental Code is under process and aims to add the *rahui* as well as the Fakarava MaB reserve and the marine sanctuary of French Polynesia in order to grant them legal conservation status under French Polynesian law[128].

Aratika atoll, Fakarava Man and Biosphere Reserve, French Polynesia © Carole Martinez

French Polynesia pioneered the development of the UNESCO Man and Biosphere (MaB) Reserve label for France with the declaration of Taiaro Atoll and the Commune of Fakarava (Tuamotu Archipelago) as one of the first French MaB reserves in 1977. The Fakarava

124 Arrêté n° 2017-215 approuvant et rendant exécutoire la délibération n°145/CP/2017 du 10 mars 2017 portant adoption de la stratégie d'adaptation au changement climatique du Territoire des îles Wallis et Futuna 2017-2030.

125 Stratégie d'adaptation au changement climatique du Territoire des îles de Wallis et Futuna, 2017-2030, pp.23-24.

126 *Arrêté du 15 novembre 2016 instituant une liste d'espèces protégées dans les eaux territoriales de l'île de Clipperton*

127 Avis du Comité français de l'UICN sur les projets d'avis d'arrêtés visant à protéger des espèces marines inscrites comme menacées ou vulnérables sur la Liste Rouge mondiale de l'UICN, et leurs biotopes autour de l'île de Clipperton, 10 Novembre 2016.

128 See the CESC's notice on the Territorial law updating the French Polynesia Environmental code.

MaB Reserve was expanded a first time in 2006 to cover all seven low-lying coral islands and atolls of the Commune of Fakarava. With the 2016 revision process of the Fakarava Biosphere Reserve label[129] and its management plan, 18 sites were delineated in the 7 atolls of Fakarava, with designations under the Code for the Environment comparable to IUCN Protected Area Management Categories ranging from category I to VI (see text box) (DIREN, 2016). In addition, the extension of the MaB reserve now includes the maritime area between the atolls, increasing the Fakarava MaB reserve area to 19,867 km^2 (almost all marine). It is managed by a committee composed of representatives of Fakarava municipality and the different islands, a scientific council and associations based on various inhabited atolls.

After the repeal of the marine spatial management plan (*PGEM*, see text box) for Fakarava in 2016, only the waters of the municipality of Moorea-Maiao are regulated by a PGEM (see map below), which is currently under revision[130]. Local consultations were launched end of 2015 in Moorea as a means to better involve local actors such as fishermen to ensure sustainable use of resources and improve coastal management through more effective instruments for monitoring and implementation of the management plan. The lagoon also received international recognition as RAMSAR wetland site in 2008.

Regulatory tools for protected areas in French Polynesia

Different regulations with varied objectives are available in French Polynesia for the protection and management of marine areas.

The Code for the Environment, enacted by decree classifies **marine protected areas (MPAs)** in 6 categories (comparable to the 6 IUCN Protected Area Management Categories) with the objective to protect the environment and maintain the biodiversity and associated natural and cultural resources. A revision of the existing Code aims at integrating other marine areas such as "*rahui*", the MaB reserve and the marine sanctuary in the Code and granting them a legal status under French Polynesian law.

The Code for Planning and Development allows the adoption of a marine spatial management plan (***plan de gestion de l'espace maritime* - PGEM)**, which is used as a regulatory tool for spatial planning and management for maritime areas. Each PGEM is adapted to the needs of its specific municipality, but all define the conditions for protection and preservation of the area, sustainable use of its resources and management of conflict in multipurpose areas.

In addition, locally and traditionally managed marine areas, also known as ***rahui***, can be officially recognized as an MPA if the measures for nature conservation are effective and supported by the local community.

Visit at the Fakarava Man and Biosphere reserve, French Polynesia © Carole Martinez

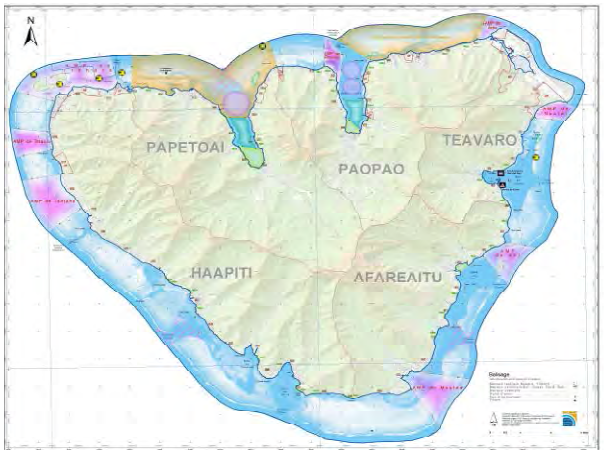


Figure 25: The Lagoon of Moorea, Society Islands (French Polynesia) is a RAMSAR site, which includes sites with different degrees of marine protection, including 8 MPAs (pink) and regulated fishing zones (orange) regulated under the French Polynesian law. (Source: French Polynesian Government)

129 The renewal of the Biosphere label, which included the extension to the marine area between the atolls, was validated in July 2017.

130 Narcy, JB., Herrenschmidt, JB. 2014. Appui à la mise en place du processus de révision du PGEM de Moorea. Note de restitution de l'atelier de préparation (20-24 octobre 2014). INTEGRE / RESCCUE, CPS, Nouméa.

Management tools, known as *rahui* can be set up to protect the marine environment from being harmed and/or ensure recovery of marine stocks through temporary closures. To date, four *rahuis* , managed by the local population, have been established to protect marine species: *Rapa* (Îles Australes), *Maiao* (Îles de la Societé), *Ua Pou*; (Îles Marquises) and *Teahupoo* (Taihiti, Îles de la Societé). The *rahui* of Teahupoo (Taihiti, Îles de la Societé) has an approved management plan and was recognized by the French Polynesian government. Several more are underway.

Traditional fish trap, Raraka, Fakarava Man and Biosphere reserve, French Polynesia © Carole Martinez

For the management of marine resources, the Directorate for marine and mineral resources (DRMM – *Direction des resources marines et minières*) designated as well regulated fishing zones (ZPR – *Zones de Pêche Réglementée*) in French Polynesia, some of which prohibit any fishing or extraction, while others allow fishing with certain gear or of specific species. However, they were primarily created as an instrument to manage fisheries.

Children learning marine conservation in an Educational Marine Managed Area (EMMA), Hiva Oa, Marquesas Islands, French Polynesia © Créocéan

Educational marine managed areas (EMMAs , see box in chapter 3.3. on learning networks) – a concept originating from the Marquesas Islands of French Polynesia – constitute a new status of protected marine areas. In a programme involving the French Polynesia government, municipalities and schools, six educational sites were created in the Marquesas and are now managed by local schools[131], with more to follow in other French Polynesian archipelagos. The success of the first EMMAs initiated a national pilot programme to establish eight new EMMAs in mainland France and other French Overseas territories. At the COP 21 in December 2015, the French Government signed an agreement with French Polynesia to promote and extend educational marine managed areas (EMMAs) at the national level.[132]

While representing a challenge, the wide maritime domain of French Polynesia offers great opportunity for combining the existing regulatory tools to create new MPAs and MMAs in order to further preserve the valuable marine biodiversity of French Polynesia and celebrating the Polynesian marine stewardship and culture. Several important and ambitious announcements of marine conservation goals were made recently.

Hatuta'a, Marquesas islands, French Polynesia © Fred JACQ

In November 2013, the French Polynesian government announced to protect at least 20% of its EEZ and pledged to create a large MPA of 700,000km² in the ***Marquesas***. The government of French Polynesia, supported by the French MPA Agency, started public consultations in the Marquesas archipelago with the objective of declaring a large coastal/offshore MPA, which would facilitate the process of registering the Marquesas Islands as mixed UNESCO World Heritage Site (on tentative list).

131 Pilot research project *PUKATAI* on marine educative areas

132 Commitments and actions of the Lima-Paris Action Agenda announced by Ségolène Royal, December 2015.

Hatuta'a, Marquesas Islands, French Polynesia © Carole Martinez

At the IUCN World Parks Congress 2014 in Sydney, French Polynesia announced a new large-scale MPA initiative in the Austral Islands. In April 2016, municipalities in the Austral Islands presented a joint proposal to the French Polynesian government to create a marine reserve, which would ban fishing in almost 1 million km², surpassing the announced Pitcairn no-take MPA by more than 20%. The proposed reserve called *Rāhui Nui nō Tuha'a Pae* ("the big rāhui of the Austral Islands") would protect the entire marine area of the Austral Islands beyond 20 nm to roughly 200 nm around each of the five islands (Rimatara, Rurutu, Tubuai, Raivavae and Rapa; see map), except for the islands' northern coasts. Within 20 nm of each inhabited island sustainable fishing will be permitted for small vessels only (up to 7.2 m). This MPA proposal highlights the importance of a balanced approach in preserving biodiversity and fish stocks for the local communities and future generations.

Going further the French Polynesia Government announced at the Pacific Ocean Summit in 2016 the creation of the world's largest marine managed area (MMA) within French Polynesia EEZ by 2020: *Tainui Atea,* extending over the entire EEZ of almost 5 million km² in order to preserve and maintain the marine natural heritage. The objective of this MMA is to have a more comprehensive and integrated approach to manage the large Polynesian maritime area, which is currently lacking both on the local and regional level. The French Polynesian Government renewed and reinforced this announcement through a Voluntary Commitment at the UN Ocean Conference in June 2017. The two former initiatives for large MPA establishment in the Marquesas and Austral Islands may be integrated into *Tainui Atea* upon government's decision.

Several regional projects, supported by the European Union (INTEGRE), the European Commission (through the BEST Initiative[133]) and the French Government (RESCCUE) are currently working on the improvement and strengthening of integrated coastal management and sustainable use of marine resources.

INTEGRE and RESCCUE projects

Both projects are aiming at implementing integrated island management through participatory management planning and implementation. INTEGRE (*INitiative des TErritoires pour la Gestion Régionale de l'Environnement)* is implemented in 9 pilot sites across the 4 EU territories of the Pacific; RESCCUE has 7 pilot sites across French Polynesia, New Caledonia, Fiji and Vanuatu. Both projects have worked on developing integrated management plans in parallel to implementing concrete actions to limit land-based pollution (waste management, erosion), restoring ecosystems (beach rehabilitation, tree planting, rat eradication), establishing coastal marine managed areas and supporting the development of sustainable economic activities in the area of aquaculture, farming and tourism. While INTEGRE is a participatory approach, RESCCUE focuses seeks sustainable financing mechanisms for environment management and both projects feed each other. INTEGRE is funded by the European Union and RESCCUE by the French Development Agency (AfD) and the French Global Environment Facility (FFEM). Both projects are implemented by the Pacific Community (SPC).

Tracking of marine turtles at the coast of Entrecasteaux, New Caledonia © Nouvelle-Calédonie-Direction des affaires maritimes

133 See project factsheets on marine conservation, management and spatial planning in the Pacific under the BEST Initiative: CORAIL, PACIOCEA, BIOPELAGOS, Pacific Biodiversity Blue Belt, Biodiversity and sustainable management of the marine and coastal environment, Hei Moana

Marine mammal and shark sanctuaries

Sharks and rays, French Polynesia © Lauric Thiault

In 2002, French Polynesia declared its waters under national jurisdiction as a marine mammal sanctuary by decree. The protection was extended to sharks in 2012 – making waters under French Polynesia's national jurisdiction the world's largest shark sanctuary. The New Caledonian government created a 'whale sanctuary' in the late 1990s, which was not declared as such but in effect with legal sanction (Hoyt, 2011). Since the declaration of the Coral Sea Marine Park in 2014, sharks, turtles and whales in New Caledonia's entire EEZ are protected. French Polynesia and New Caledonia are two of several (EEZ-wide) marine mammal and shark sanctuaries in the South Pacific.

Humpback whale, New Caledonia © Nouvelle-Calédonie-Direction des affaires maritimes

Fish swarm, French Polynesia © Lauric Thiault

High Seas MPAs

There are no High Seas projects in the European Overseas Pacific region.

Gambier, French Polynesia © Carole Martinez

2. GOVERNANCE OF EU OVERSEAS MPAS

Table 11: MPA governance in EU ORs and OCTs

OR/OCT	Management by				Comments
	Government/ Public body/ Municipality	NGO	Shared governance	ICCAs[1]	
Amazonian region					
French Guiana	x	x			*Sivu* (*syndicat intercommunal à vocation unique*) of Amana is a sub-regional entity bringing together the municipalities of Mana and Awala-Yalimapo. The Sivu is in charge of the management of the Amana reserve. The local NGO GEPOG is managing the Grand Connetable natural reserve since 2016. Regional Park
Caribbean region					
Guadeloupe (FR)	x	x			National park, natural reserve NGO, MaB reserve; Agoa management committee
Martinique (FR)	x				Regional park, marine park; Agoa management committee
Saint Martin (FR)	x	x			Natural reserve managed by a local NGO bringing together local representatives Agoa management committee
Saint Barthélemy (FR)	x				Natural reserve managed by the territorial environmental agency of Saint Barthélemy; Agoa management committee
Dutch MPAs (except for Saba Bank): Aruba, Bonaire, Curaçao, Sint Eustatius, Sint Maarten, Saba	x	x			Aruba Arikok National Park; Saba Conservation Foundation (SCF); Sint Maarten Nature Foundation; Bonaire STINAPA; St. Eustatius (STENAPA); Curaçao Caribbean Research and Management of Biodiversity Foundation (CARMABI)
Saba Bank	x	x			Saba Bank Management Unit (SBMU) independently operating organisation under the umbrella of the Saba Conservation Foundation (SCF). A steering group consisting of SCF manager, Ministry of Economic Affairs, Agriculture and Innovation (EL&I) and the island government is responsible for overall management and planning

British MPAs: Anguilla, British Virgin Islands, Cayman Islands, Turk and Caicos Islands	x				
Arctic and Sub-Arctic					
Greenland (DK)	x				National Park
Saint Pierre & Miquelon (FR)	x				
North Atlantic region					
Bermuda (UK)	X				
Azores (PT)	x*	x			*up to 12nm: Island Parks beyond 12nm: government
Madeira (PT)	x				Public institute under government
Canary Islands (ES)	x				State Administration and Canarian Autonomous Community
South Atlantic region					
Falklands (UK)	(x)				RAMSAR sites, fishery closures
Saint Helena (UK)	x				
Ascension Island (UK)	(x)*				*Provisionally closed area, MPA declaration pending
Tristan da Cunha (UK)	x				
Antarctic and Sub-Antarctic region					
French Southern Territories (TAAF): Kerguelen/ Saint Paul/ Amsterdam/ Crozet (FR)	x				Natural reserve managed by the Territory of TAAF
South Georgia and South Sandwich Islands (UK)	x				
South Orkney (no sovereignty rights)	x*				*CCAMLR MPA
Indian Ocean					
Reunion Island (FR)	x				Natural reserve managed by *Groupement d'intérêt public* (*GIP*), a public body bringing together representatives of State, Region, municipalities, The West Coast group of Municipalities, national park, users and staff
Mayotte (FR)	x	x			Marine park management committee brings together a wide range of representatives Îlot Mbouzi natural reserve managed by a local NGO
Scattered Islands / Îles Eparses (FR)	x				Marine park TAAF Territory
British Indian Ocean Territory / Chagos (UK)	x*				*BIOT Administration
Pacific region					
French Polynesia (FR)	x			x	Moorea PGEM MaB reserve managed by management committee *Rahui* Educative Marine Managed Areas (EMMAs)
New Caledonia (FR)	x	x		x	Government/Provinces, local communities/ other stakeholders Local World Heritage management committees
Pitcairn (UK)	x*				*UK Government
Clipperton (FR)	x*				*French Government

The MPA governance in the EU ORs and OCTs is very diverse due to the different political statuses of the ORs and OCTs, the evolution of these statuses as well as the local circumstances. MPA governance in the EU ORs and OCTs goes through a diversity of solutions ranging from a public and territorial approach, with a management by the Territory, public bodies, agencies, municipality or municipality groups, to mixed situations, with management committees bringing together representatives of the civil society, or management by a local NGO, or a more inclusive and bottom up models such as the Educative Marine Managed Areas and *Rahui* in French Polynesia.

In the French ORs and OCTs, there is a mix of MPAs governance solution managed by public agencies (e.g. Guadeloupe National Park, St Barthélemy, La Réunion), open management committees (Mayotte, New Calédonia; Agoa Sanctuary), NGOs (St Martin, French Guiana, Guadeloupe, French Polynesia), schools and stakeholders (EMMAS, *Rahui* in French Polynesia).

National fisheries department staff observing turtle nesting beaches in Anguilla © Romain Renoux

In the UK Overseas Territories, local governments manage all MPAs and in the Dutch Caribbean non-governmental, non-profit organisations are in charge of the MPAs.

The involvement of local citizens in the management of MPAs varies across ORs and OCTs. Most of the French ORs' and OCTs' MPAs, including national and marine parks, are governed through a management committee of a wide range of local stakeholders. These management committees oversee the development, implementation and review of the management plans. In addition, inputs from local citizens are sought during the development of management plans.

In New Caledonia, several management and governance mechanisms coexist: the three Provinces (administrative subdivisions), local management committees (civil society) and the national government. The three Provinces (Northern, Southern and Loyalty Islands) are each responsible for environmental jurisdiction and management of local protected areas in their own territory. The six lagoons of the World Heritage Site (Lagoons of New Caledonia WHS) are managed by 13 local management committees composed of a wide range of stakeholders, such as tourist operators, fishermen, politicians and chiefs of local tribes working with the community on monitoring the lagoons' health. Finally, the government manages the EEZ-wide marine Natural Park (Parc Naturel de la Mer de Corail), which includes a network of protected areas within the reef complex known as the Entrecasteaux reef (no-take, cat. Ia), which is also part of the Lagoons of New Caledonia WHS but the only site that is located in the EEZ beyond the territorial waters.

Kito fishery, Aratika, UNESCO-MAB Biosphere Reserve of Fakarava Municipality, Tuamotu, French Polynesia © Magali Verducci

In the UK Overseas territories, the BVI MPA System Plan states that the "involvement of the civil society in protected area management is limited and primarily focused on public consultations on specific issues". However the BVI government is willing to develop a more structured "Public Engagement Strategy" as requested by several local institutions "to participate more consistently and more meaningfully". The situation of engagement is similar in other UKOTs, where either the public is consulted on a sporadic basis or the UK Government through the Foreign and Commonwealth Office (FCO) for entities without a civil population, such as South Georgia and the South Sandwich Islands (e.g. the consultation on the SSGSI MPA management plan).

As the BVI Government is in the process of developing public engagement strategies, experiences from other MPA management bodies in French and Dutch Caribbean entities could be shared in order to foster regional cooperation on this matter.

3. REPRESENTATIVENESS OF CURRENT EU OVERSEAS MPAS AND MPA NETWORKS

3.1. What can be called a network?

The term "network" is defined by IUCN-WCPA as follows: *A collection of individual MPAs or reserves operating co-operatively and synergistically, at various spatial scales and with a range of protection levels that are designed to meet objectives that a single reserve cannot achieve.* (IUCN-WCPA, 2008)

The word "network" is also used to describe organized groups of people, projects and institutions involved in protected area establishment and management. One example of such a network is CaMPAM, the Wider Caribbean MPA Managers Network and Forum. In order to clarify the analysis, this study will focus on *ecological networks* and *learning networks*.

There are currently very few ecological MPA networks in European ORs and OCTs or even worldwide. A review of MPA networks carried out by UNEP-WCMC in 2008 recorded 30 national and 35 sub-national MPA network initiatives with a majority of these networks being under development and very few being formally accredited, and even fewer effectively managed (UNEP-WCMC, 2008).

Several initiatives but still very few EU Overseas ecological networks in process

According to the previous definition, only a single national ecological network is currently being established in the British Virgin Islands. However, other important initiatives in EU ORs and OCTs, such as the French MPA network programme working on the eco-regional analysis of the French MPAs and bio-regionalization programme in the French Southern Territories[134], will definitively provide useful data for assessing the status of the existing MPA networks in terms of ecological representativeness and connectivity.

The Lagoons of New Caledonia in the Pacific, a World Heritage Site with distribution over six different areas, represent all aspects of coral reef ecosystems. This network is coordinated by the *Conservatoire des Espaces Naturels (CEN)* of New Caledonia, which provides support to the local management committees.

BIOT - Pristine Coral Reefs © Rohan Holt, Redfern

A growing regional cooperation but regional learning MPA networks still to be strengthened

Other MPA ecological networks exist on a regional level, such as the **OSPAR MPA network** in the North-eastern Atlantic and **Natura 2000**, a Europe-wide network of terrestrial and marine areas, which includes only the Macaronesian region. Key criteria for ecological coherence and a set of MPA network design principles were

134 More information on the French eco-regional analysis and bio-regionalization programme (*Programme d'Eco-Régionalisation Français,* PERF) on the website of the French agency for biodiversity (AFB).

developed along with other guidance documents, which are now referred to on the OSPAR website in order to develop an ecologically coherent MPA network.

In the context of the OSPAR network, the Azores recently declared off-shore hydrothermal vent fields as protected areas (Calado *et al.* 2011). Nevertheless, the ecological representativeness and connectivity of the MPA network in the Azores but also the Macaronesia region need improvement. However, the absence of national or territorial strategies for such a network can be a real barrier and slow the processes.

In the Austral Ocean, under the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR) work has been conducted for the development of a system of MPAs[135]. In 2008, 11 priority regions were identified[136] and new priority areas suggested in 2011[137]. The declaration of the South Orkney Islands Southern Shelf MPA in 2009 was seen as a first step towards such a network (see chapter 1.6). A large multiple-use MPA protecting South Georgia and South Sandwich Islands followed in 2012. In October 2016, after 5 years of negotiations among the 25 CCAMLR members and the international NGO community it was agreed to designate a 1.55 million km^2 large high seas MPA off the Antarctic continent in the remote Ross Sea. Following scientific work and important regional cooperation efforts, the new MPA – more than twice the size of France – will go into effect in December 2017 for a 35-year period until 2052, when it can be renegotiated. Three quarters of the Ross Sea MPA (1.12 million km^2) will be fully-protected from fishing and other extractive activities, while the other quarter is set aside for more research on the nearly pristine ecosystems. Although not meeting IUCN's criteria for an MPA (requires the MPA to be permanent), this is another landmark decision for the protection of a huge area beyond national jurisdiction. It is hoped to pave the way to more CCAMLR MPAs and High Seas MPAs. Two CCAMLR MPA proposals are pending for the East Antarctic Representative System of MPAs (EARSMPA) and in the Wedell Sea (see chapter 1.6), and cooperation between the French Southern Territories and South Africa may soon lead to an agreement on the area between Crozet and the Prince Edward Islands (Koubbi *et al*. 2012). However, the existing Antarctic system with its protected areas has been assessed as remaining "*largely unsystematic and underdeveloped*" (Hughes *et al.* 2017).

Floating ice and iceberg at Antarctica © Bruno Marie

In the South Atlantic, the Falkland Islands are in a site identification stage. A framework for marine spatial planning is being elaborated based on reviews, analysis and consultations, which will facilitate planning and managing sustainable development as well as conservation of the marine environment around the Falkland Islands. The methods include collating existing data to create GIS data layers suitable for geospatial analysis and mapping, which will then feed into the identification of important gaps and allow prioritization of future data collection under relevant national and international strategies and plans. This approach of combining a meta-analysis, GIS development, geospatial analyses and wide stakeholder consultation will be a first for UKOTs.

Table 12 provides an overview over the current status of ecological MPA networks in the EU Overseas.

Tern takeoff Falkland Islands © Judith Brown

135 SC-CAMLR- XXIV, Annex 7.

136 SC-CAMLR-XXVII, Annex 4, Figure 12.

137 SC-CAMLR-XXX, Annex 6, 4.5 Updated priority areas for MPA development.

Ecological network	Scale	Area	Status
British Virgin Island (BVI)	National	Caribbean	Gazetted/implemented
OSPAR	Regional	North Atlantic	Gazetted/under implementation
Macaronesia **Natura2000** Network	Regional	Macaronesia - Azores, Madeira Canary Islands	Under implementation
CCAMLR	Regional	Antarctic	Identification of priority areas (2008;2011); South Orkney Islands MPA (2009) implemented;
			Ross Sea (high seas) MPA declared (2016), to come into effect 2017;
			other MPAs proposals still pending
French Southern Territories (**TAAF**)	National	Sub-Antarctic	Extension of reserve to 672,000 km^2 by (Dec 2016) and of its protection zone to the EEZ limits (March 2017).
RAMP-COI (Indian Ocean Commission MPA network)	Regional	Indian Ocean	To be fostered and developped
Caribbean Marine Mammals sanctuaries*	National/ sub-regional	Caribbean –Dutch and French entities	Agoa and Yayari Sanctuaries declared and managed

Table 12: Status of current MPA ecological networks across EU ORs and OCTs.

*The Caribbean whale sanctuaries Agoa and Yarari were included in the MPA ecological network list because its extension over multiple EEZs reflects the migration patterns of marine mammals and the need for broad, transnational protection and conservation measures.

In the Indian Ocean, the RAMP-COI[138] project (2006-2011), was working on the establishment of an ecologically coherent regional network of MPAs and developing management plans. The project identified priority sites for conservation[139] and – based on the results - developed a regional MPA strategy, known as the WIOMER Strategy[140], for the establishment of a network including both coastal and pelagic ecosystems. Aiming at providing a framework for the IOC, this strategy defines eight strategic directions for 10 years (2016-2025), one of which relates to MPAs and underlines the need to link the regional networks to international initiatives. However, no reference to the assessment and improvement of ecological representativeness and connectivity can be found, even though the strategy is based on an eco-regional analysis identifying important sea landscapes and biodiversity areas.

All 5 Indian Ocean Commission member countries[141] validated the 8 strategic directions of the WIOMER Strategy. However, implementation of such a network is challenged by the fact that Mayotte and the Scattered Islands – currently not members of the Indian Ocean Commission – are not included in the strategy, which significantly diminishes the ecological coherence of a future network. In addition, another regional strategy for the sustainable management of marine ecosystem and marine resources was already adopted in September 2013 for ten years. A framework document for sustainable management of ecosystems and marine resources in the IOC region is currently being prepared to promote collaboration on shared issues as well as to complement other already validated national programmes and regional strategies, such as the strategic development plan, regional strategy on climate change adaptation and the regional strategy for fisheries and aquaculture. It aims to create tools and mechanisms to protect the entire marine heritage

138 RAMP-COI (*French : Réseau des aires marines protégées des pays de la Commission de l'Océan Indien*) – MPA network of the Indian Ocean Commission. The project was supported by the French Global Environment Facility (FFEM) and WWF through the Indian Ocean Commission and implemented by WWF-Madagascar.

139 The selection of priority sites for fisheries management and marine biodiversity conservation combined expert consultation and use of systematic conservation planning tools, such as the software MARXAN. These sites are known for their characteristic marine communities, pristine ecosystems, high productivity, their importance for regional and sub-regional fisheries, and their habitats are essential for marine species and ecological processes (*De Mazières and Olson, personal communication*).

140 Western Indian Ocean Marine Ecoregion (WIOMER) Strategy is a regional strategy of the 5 Member States of the Indian Ocean Commission (Union of the Comoros, Madagascar, Maurice, the Seychelles and Reunion Island) for the sustainable management of marine ecosystems and resources

141 The 5 Member States of the Indian Ocean Commission encompass the Union of the Comores, Madagascar, Maurice, the Seychelles and Reunion Island.

and ensure the sustainability of human activities so that the present and future generations can enjoy and benefit from biodiversity and safe, clean, healthy and productive marine ecosystems dynamism (taken from March 2016 draft of this framework document).

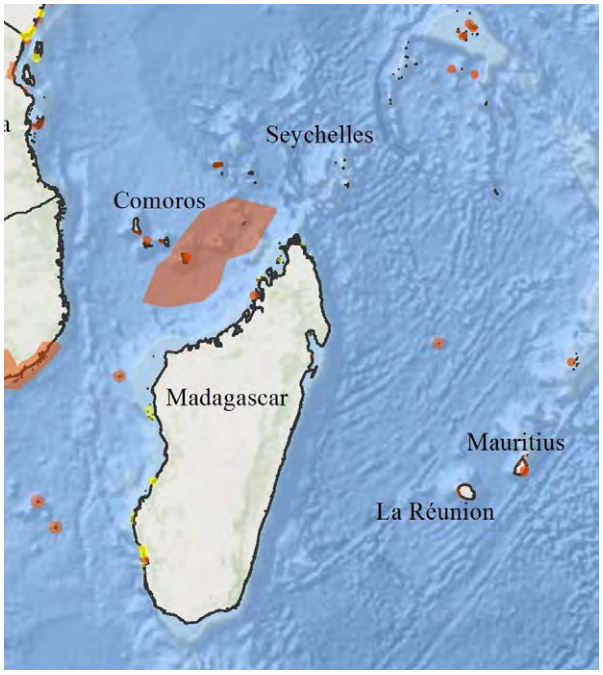


Figure 26: Map of the current marine protected areas (red) and locally marine managed areas (yellow). (Source: Estelle Crochelet, MASPAWIO project)

Most of the existing MPAs in European ORs and OCTs were not originally conceived as networks. However, it can still be investigated to what extent they are representative of the rich marine ecosystems and, whether these MPAs increase resilience of the protected ecosystems against threats, including climate change.

3.2. Are existing EU Overseas MPAs and MPA networks representative?

There is a real need to protect the wide range of marine habitats, species and ecological functionalities across all European ORs and OCTs.

The OSPAR report from 2007 defines four criteria for assessing ecological coherence of MPA networks[142]: (1) adequacy/viability, (2) connectivity, (3) representativity, and (4) replication. These four criteria do not necessarily have to be applied for each assessment but should guide assessment, particularly when detailed ecological data are unavailable. While "*ecological coherence*" was not formally defined by OSPAR, earlier work[143] specified that an ecologically coherent network of MPAs is a network that:

- Interacts and supports the wider environment;
- Maintains the processes, functions, and structures of the intended protected features across their natural range;
- Functions synergistically as a whole, such that the individual protected sites benefit from each other to achieve the two objectives above; and
- (Additionally) may be designed to be resilient to changing conditions.

Drawing on scientific work **four principal ecological criteria** can be identified (summarized from Roberts *et al.,* 2003[144]) for a representative MPA network:

1. All ecosystem/habitat types, including those that are rare or particularly vulnerable;
2. All species and characteristic species communities;
3. Critical habitat for threatened, restricted range or endemic species;
4. Areas important for vulnerable life stages, such as spawning aggregations, breeding sites and migration routes.

The following table summarizes the representativeness level of existing MPAs across European ORs and OCTs according to the four principal ecological criteria listed above. The criteria for species and critical habitat, including important areas for vulnerable life stages, were assessed as part of the regional ecosystem profiling work under the BEST Initiative. These regional ecosystem profiles were elaborated through a participatory approach in consultations with regional and local stakeholders, who identified over 400 key biodiversity areas (KBAs)[145] and ecological corridors, which cover a total area of almost 3.5 million km^2, among which over 70% of which represent marine or coast-

142 For more information on the 4 criteria please refer to the *Background Document on Assessment of Ecological Coherence*, available from the OSPAR website

143 OSPAR Agreement 2006-03 and Laffoley et al. (2006)

144 All 12 criteria used in the evaluation of potential MPAs in Roberts et al. (2003). Prerequisite criteria (to be considered first): (1) Biogeography; (2) Habitat (diversity/not protected elsewhere); Exclusion criteria - threats: (3) Human threats; (4) Natural threats; Modifying criteria: (5) Adequacy of size (for conservation / for fisheries); (6) Optimal distance apart (for conservation / for fisheries); (7) Vulnerable habitats; (8) Vulnerable life stages; (9) Species of special interest (rare, endemic, etc.); (10) Inclusion of exploited species; (11) Linkages (dependencies) between systems; (12) Ecosystem services for human needs

145 KBAs are places that include vital habitats for species and therefore require enhanced protection

al ecosystems. **Table 13** presents information on the quality and availability of data to support the establishment or management of representative MPAs as well as recent, current or planned projects to assess MPA representativeness.

Table 13: Representativeness of current MPAs in European ORs and OCTs, assessing how well existing MPAs cover important marine habitats and key biodiversity areas (KBAs) identified in the BEST regional ecosystem profiles[146], as well as information on data quality and availability and supporting projects in progress or planning stage. Mg: mangroves; Sg: seagrass; Cr: coral reefs; O: open ocean, CH: critical habitats; mKBA – marine key biodiversity area; n/a: not applicable

OR/OCT	Habitats covered by MPAs					KBAs and ecological corridors included in MPAs	Data quality and availability	Projects to assess representativeness or improve data (past, current and planned projects)
Tropical and sub-tropical habitats	Mg	Sg	Cr	O	CH	(as identified in the BEST ecosystem profiles; % coverage are estimates)	BEST Ecosystem Profiles available	
French Guiana (FR)	15%	n/a	n/a			3 existing Ramsar sites included in priority KBAs; <5% of 3 priority marine KBAs protected	Good cetacean distribution data across the EEZ to inform management (REMMOA project). Habitat data available to support creation of a first MPA network	A strategic analysis allowed a first assessment of representativeness
Saint Barthélemy (FR)	n/a[2]	X	X		X	Additional coastal KBAs and marine corridor (connecting existing marine reserve sites); proposed; currently <20% marine KBAs/corridors protected (beyond Agoa marine mammal sanctuary)	Good habitat data within reserve boundaries. Good data of cetacean distribution across EEZ to inform management (REMMOA programme).	Long-term coral reef and fish community monitoring ongoing. French Antilles: Research programme compiling existing information on fish populations and important areas for reproduction, nursing and feeding to identify fisheries conservation zones (AFB, IFREMER).
Guadeloupe (FR)	X	X	X		X	Existing MPAs covered by priority KBAs. Half of marine/ coastal KBAs and corridor not protected (beyond Agoa marine mammal sanctuary)	Good data for Guadeloupe National Park. Data of medium quality for other coastal areas and non-existent for the open ocean. Good data of cetacean distribution across EEZ to inform management (REMMOA[3] programme)	Long-term coral reef and fish community monitoring ongoing. French Antilles: Research programme compiling existing information on fish populations and important areas for reproduction, nursing and feeding to identify fisheries conservation zones (AFB, IFREMER).
Martinique (FR)	X	X	X	X	X	All 5 priority marine KBAs and corridor included in marine park covering entire EEZ (created March 2017)	Good data (incl. GIS) availability for coastal, not for pelagic areas. Good data of cetacean distribution across EEZ to inform management (REMMOA programme). All current MPA projects cover a representative range of habitats for coastal areas.	French Antilles: Research programme compiling existing information on fish populations and important areas for reproduction, nursing and feeding to identify fisheries conservation zones (AFB, IFREMER).
Saint Martin (FR)	X	X	X		X	1 of 2 coastal/ marine KBAs protected (reserve); 2 marine corridors proposed (shared with St Maarten); ca. 75% of marine KBAs/ corridors currently protected (beyond Agoa marine mammal sanctuary)	Lack of data on species, spawning aggregations and certain habitats. Good data of cetacean distribution across EEZ to inform management (REMMOA programme)	Project on habitat data acquisition proposed in management plan but no clear objective to assess representativeness French Antilles: Research programme compiling existing information on fish populations and important areas for reproduction, nursing and feeding to identify fisheries conservation zones (AFB, IFREMER).
Sint Maarten (NL)	X	X	X			2 identified marine KBAs include existing MPA, but 2/3 of marine/coastal KBAs and corridors not protected	Lack of funding for maintenance and other operational activities in the marine park	Coral reef , seagrass, mangrove and shark monitoring ongoing
Bonaire (NL)	X	X	X			Marine KBA covers MPA (100%), small additional corridor (for sea turtles) identified	Only detailed map available is from 1985, covering the coral reef of Bonaire's western (and Curaçao's southeast). Update from 2015/2016 mapping efforts available in 2017.	150 coastal sites were mapped as part of coral reef monitoring efforts. Seagrass, mangrove, shark and marine mammal monitoring ongoing

2 Last mangroves found around 5 ponds and saline inland waters, listed as ZNIEFF (zone naturelle d'intérêt écologique, faunistique et floristique - *natural zone of ecological interest, fauna and flora*)

3 REMMOA Survey of marine mammals and other pelagic megafauna by aerial observation through the French MPA Agency

146 Key biodiversity areas (KBAs) were identified as part of BEST Initiative "Measures towards Sustaining the BEST Preparatory Action to promote the Conservation and Sustainable Use of Biodiversity and Ecosystem Services in the EU Outermost Regions and Overseas Countries and Territories" supported by the European Commission (Contract n° ENV.B.2/SER/2013/0020). The Ecosystem Profiles are available online at: http://ec.europa.eu/environment/nature/biodiversity/best/regions/index_en.htm

OR/OCT	Habitats covered by MPAs					KBAs and ecological corridors included in MPAs	Data quality and availability	Projects to assess representativeness or improve data (past, current and planned projects)
Tropical and sub-tropical habitats	Mg	Sg	Cr	O	CH	(as identified in the BEST ecosystem profiles; % coverage are estimates)	BEST Ecosystem Profiles available	
Curaçao (NL)	X	X	X			<25% of marine KBAs/ corridors protected; coastal KBAs beyond existing protected areas and 1 corridor along mid-eastern coast proposed	Assessment of marine resources by (Waitt Institute, 2015) includes status of habitats and species. Detailed updated reef mapping of southeast coast undertaken in 2015/2016	Coral reef and shark monitoring ongoing.
Saba (NL)	X	X	X	X	X*	2 Identified marine KBAs cover marine park (coastal) and Saba Bank (offshore); 100% protection of KBAs	Baseline habitat maps available for coastal marine park; good quality reef and benthic habitat and species data available for Saba Bank but no habitat map. *Saba bank MPA covers areas for grouper spawning and newly identified endemic fish species.	Regular expeditions to Saba Bank to monitor habitat and species since the 1990s[4]. "Save our Sharks" project by DCNA to monitor shark movement. 5 year Saba Bank research program will focus on a habitat map
Sint Eustatius (NL)	X	X	X			Existing MPA covers marine KBA (100%)	Baseline habitat maps available for coastal waters	Coral reef and shark monitoring ongoing.
Aruba (NL)	X	X	X			KBAs include 4 marine sites proposed for MPA, additionally 2 corridors to connect MPA sites and 1 marine mammals nursery site off the coast identified.	Spanish Lagoon Ramsar site was recently included in Aruba's National Park Arikok	BEST project (2016-2019) to establish marine park includes data collection, which will allow assessments in the future
Anguilla (UK)						KBAs almost 100% protected by existing MPAs but large proposed corridors (connecting MPAs and offshore foraging areas) unprotected	Good coastal resource mapping using high resolution imagery maps of nearshore waters collected as part of the ACRAMAM[5] project within OT environment programme (OTEP)	OTEP project to enhance management and improve representativeness of existing and potential new MPAs included assessment of coastal and marine habitats
British Virgin Islands (UK)	X	X	X		X	Currently <25% of KBAs/ corridors protected by existing MPA network; additional open water marine KBA and marine corridor identified. MPA network extension plans pending.	Good coastal habitat data availability	OTEP project (2004-2006) to improve BVI MPA network reviewed current and proposed MPAs to achieve 30% target of key habitat representation. Proposed MPAs consulted with public and integrated in BVI PA System Plan 2007-2017. Declarations pending.
Cayman Islands (UK)	83%	40%	33%		X	KBAs included in MPAs (100% protected); 3 coastal corridors (45 km^2) proposed to connect existing coastal MPAs	Excellent data for coastal areas	OTEP project (2010-2013) assessing reef resilience included representativeness
Turk and Caicos (UK)	X	X	X	X	X	MPA system covers identified KBAs	BEST East Caicos KBA's Corals and Coast project	Mapping of habitats in preparation and monitoring of coral sites ongoing to gain baseline measurements
Bermuda (UK)	X	X	X		X	No ecosystem profile available	High quality baseline survey and habitat maps available for seagrass, rim reefs, mangroves and forereefs (up to 30m). Data for economic valuation of Bermuda's coral reefs available	Nekton deep-ocean (up to 300m) exploration (2016). Ongoing project on MSP[6], reef ecosystems and open ocean microbial community mapping by BIOS[7], in collaboration with Waitt Foundation, Government. Benthic and habitat mapping and monitoring programme. Ongoing work on spawning aggregations (DENR[8])
Sargasso Sea	n/a	n/a	n/a	x	x	No ecosystem profile available	Habitat and species data available in report to make scientific case for the protection and management	Nekton deep-ocean (up to 300m) exploration (2016). Ongoing work of Sargasso Sea Commission focuses on conservation of fisheries habitat and migratory species, international recognition of importance for protection and management

4 Expeditions are listed in DCNA's special BioNews (p.5/6)

5 ACRAMAM - Anguilla Coastal Resource, Monitoring and Management Project

OR/OCT	Habitats covered by MPAs					KBAs and ecological corridors included in MPAs	Data quality and availability	Projects to assess representativeness or improve data (past, current and planned projects)
Tropical and sub-tropical habitats	Mg	Sg	Cr	O	CH	(as identified in the BEST ecosystem profiles; % coverage are estimates)	BEST Ecosystem Profiles available	
Reunion Island (FR)	n/a		X			1 marine priority KBA protected by marine reserve; 5 additional coastal KBAs identified; total 40% of marine KBAs protected	Good habitat information for very shallow waters; Good data available on pelagic megafauna (survey of marine mammals, seabird, sharks, sea turtles) to inform management (REMMOA project; BEST Coca Loca and MIROMEN projects)	Comprehensive coastal habitat mapping in progress (SPECTRHABENT project); CéTO-study (since 2001) mapping distribution of cetaceans, turtles, sea birds; 2 Globice projects on bottle-nose dolphins distribution;
Mayotte (FR)	X	X	X	X	X	Marine KBAs covered by EEZ-wide MPA; conservation focus should be on 3 marine and 6 coastal KBAs	Good data available for shallow habitats. Good data available on pelagic megafauna (survey of marine mammals, seabird, sharks, sea turtles) to inform management (REMMOA project)	SPECTRHABENT & REMMOA projects (see Reunion); Inventorying and monitoring of turtles and marine mammals by REMMAT[9]; Coral monitoring expedition after 2016 bleaching to provide further data for biodiversity mapping (IRD); Red listing of corals and fish; Mapping of
Scattered Islands (FR)	X	X	X	X	X	All 5 priority KBAs (territorial waters) protected	Good data availability for coastal but not for pelagic areas; Good cetacean distribution data to inform management (REMMOA project; BEST COPRA project)	BEST project COPRA (2017-2019) mapping sea grass beds in Glorioso MPA and Geyser Bank; SPECTRHABENT & REMMOA projects (see Reunion)
BIOT	X	X	X	X	X	Large marine KBA currently protected by EEZ-wide no-take MPA	Good data available through research by Chagos Trust	Several projects to assess and monitor biodiversity & habitats in the MPA
French Polynesia (FR)	*	X	X			3 of 13 marine/coastal KBAs partially protected.	Good data availability for coastal habitats. *Mangroves were introduced to French Polynesia but are not native. Revision of coastal zoning plan (2015/2016).	Strategic Analysis BEST project Blue Belt (2016-2018) on methodologies for MPA planning and management in Pacific OCTs;
New Caledonia (FR)	X	X	X	X	X	1 marine candidate KBA; 4 coastal KBAs; all covered by MPA	Good data availability for coastal habitats. Limited data on whales including Humpback and sperm whales.	BEST project Blue Belt (2016-2018) on methodologies for MPA planning and management in Pacific OCTs; BEST project BIOPELAGOS (2016-2019) to increase scientific marine ecosystem knowledge;
Wallis and Futuna (FR)	No existing MPA					5 coastal/mixed KBAs identified and considered as basis for protected area network development (incl. terrestrial areas)	Good data of cetacean distribution across EEZ to inform management (REMMOA programme). Habitat and species data recently published in biodiversity strategy (2016)	BEST project Blue Belt (2016-2018) on methodologies for MPA planning and management in Pacific OCTs; BEST project BIOPELAGOS (2016-2019) to increase scientific marine ecosystem knowledge; BEST project (2017/18) will prepare inventory of W&F mangrove distribution
Pitcairn (UK)	n/a	n/a	X	X	X	All 4 KBAs are at island level; new MPA covers entire EEZ	2012 PEW survey on marine environment	Data collected as part of the PEW large MPA project; BEST project Blue Belt (2016-2018) on methodologies for MPA planning and management in Pacific OCTs;
Clipperton Island (FR)	n/a	n/a	X			No ecosystem profile available	Good data available from expedition from 2 expeditions in early 2016[10]	Scientific follow-up mission was planned for 2017
St Helena (UK)	No reef-forming coral, seagrass or mangroves			X	X	New large MPA (200 nm around St Helena) includes entire inshore KBA	Some data available for coastal and pelagic habitats and marine biodiversity from SAERI metadata catalogue (incl. cetacean observations)	Coastal marine biodiversity mapping project (2012-2014), supported by JNCC through Darwin grant
Ascension Island (UK)	No reefs, seagrass or mangroves in this area MPA designation pending but half of waters already closed for commercial fishing					Inshore marine area (priority KBA) may be included in future no-take MPA	Little data available for deep sea benthic habitat and biodiversity. Some data available for coastal habitat and species specifically birds and turtles. Web-GIS map available (May 2017).	Darwin+ project assessed marine biodiversity and fisheries (2014-2016); Darwin+ project ASIOS (2016-2018) tracking marine species near- and offshore; BEST project (2017-2018) assessing shallow-water seamounts as candidate MPAs

OR/OCT	Habitats covered by MPAs		KBAs and ecological corridors [155] included in MPAs	Data quality and availability	Projects to assess representativeness
Circumpolar Habitats	Coastal	Pelagic	(as identified in the BEST ecosystem profiles; % coverage are estimates)	Very little information available for these habitats	
French Southern Territories (TAAF) (FR)	X	X	All 16 marine priority KBAs are protected by extended protection zone of reserve. KBAs were defined based on proposed ecoregions (see PERF)	Good data availability for coastal, not for pelagic areas. Good cetacean distribution data across EEZ to inform management (REMMOA). Different level of knowledge between islands: good data available for Crozet and Kerguelen, little data for St Paul & Amsterdam. BEST project identified marine areas for macaroni penguins	Bio-regionalization program (PERF) led to identification of ecoregions, some of which are proposed as priority KBAs in the BEST ecosystem profile
SGSSI (UK)	X	X	2 marine KBAs prioritized: 1) coastal areas (within 12 nm of each of the South Sandwich Islands) already included in NTZ 2) South Sandwich Island offshore area (area south of 60° S) not included in SGSSI MPA	Baseline marine biodiversity project by SMSG in 2012 surveyed shallow marine biodiversity but still relatively little data available for coastal and even less on deep habitats. BEST project identified marine areas for macaroni penguins. More data ongoing collection (see projects).	OTEP project (2010/2011) identified important, marine areas to establish representative MPA network BAS-led project (2013-2015) collecting penguin data to define candidate special protection MPAs within CCAMLR process; Coastal habitat mapping for Falklands and South Georgia ongoing (Darwin+ project, start 2017) for MSP; Darwin+ project compiling data resources for MPA management (start 2017) BEST project (2013-2015) on macaroni penguin areas BEST project (2017-2019) on right whales to delineate future MPAs & fishery closures
Falkland Islands (UK)	x		None of priority KBAs at coastal/island level currently protected; 2 existing Ramsar sites not included in KBAs	Good data on shallow (coastal) not for pelagic habitat & biodiversity except for offshore cetacean data; flora and fauna, habitat, protected areas and management mapped on MSP database	Baseline data collection and assessment for cetacean ongoing (2016-2018, SAERI); Coastal habitat mapping for Falklands and South Georgia ongoing (Darwin+ project, start 2017) for MSP , ongoing inshore marine biodiversity research (SMSG – volunteer led) BEST project (2016-2017) assessing sei whale distribution and conservation
South Orkney (no sovereignty claims)		X	12 marine KBAs were identified (incl. South Orkney Shelf MPA) but not prioritized though climate change and fisheries impacts were recognized as threats	Good data availability through CCAMLR; MPA location supported by scientific evidence showing the protection of important foraging areas, submarine shelf area, seamounts and high benthic biodiversity	BAS-led project (2013-2015) collecting penguin data to define candidate special protection MPAs within CCAMLR process;
Greenland (DK)	X		All 11 priority KBAs include marine/coastal areas, of which <10% are protected by existing MPAs	Good level of knowledge on marine areas: identification and description of Particularly Sensitive Sea Areas (PSSA) (AMAP 2013). BEST project PISUNA monitored marine species areas for better management of natural resources	BEST project (2017-2019) developing open access image library from benthic habitats of West Greenland

	OR/OCT	Habitat coverage		KBAs and ecological corridors [155] included in MPAs	Data quality and availability	Projects to assess representativeness
	Temperate Habitats	Coastal	Pelagic	(as identified in the BEST ecosystem profiles; % coverage are estimates)		
Cold Temperate Habitats	St Pierre & Miquelon (FR)	n/a		1 of 2 priority marine/coastal KBAs is covered by an MPA but very small fraction (<5%) of total proposed (identified but not prioritized) marine KBAs area is protected	Data on species distribution largely missing BEST project identifying critical areas for seabirds	None
	Tristan da Cunha (UK)	x		Both marine KBAs protected by Ramsar and WHS sites	Limited data available for marine habitats, biodiversity and key conservation areas	Darwin+ project (2013-2015) collected data on marine environment and resources for management plan
Warm Temperate Habitats	Canary Islands (ES)	X	X	No marine KBAs prioritized due to lack of a long-term conservation strategy	Very good data availability for both coastal and offshore Natura2000 habitats. Very good cetacean distribution data across the archipelago.	Ongoing population studies on beaked whales, algae, invertebrates, fish under increasing sea temperatures (BIOECOMAC); Acoustic census of cetaceans, birds and sea turtles offshore (CEAMAR); Data collection on shallow and deep sea habitats & biodiversity (fishes, macroalgae, microalgae, sea turtles and invertebrates) & studies on rhodolith beds, seagrass meadows and brown macroalgal forests (ECOAQUA);
	Madeira (PT)	X		2 fully-protected coastal KBAs, 1 marine KBA and corridor currently unprotected	Good data availability for coastal Natura2000 habitats	LIFE project on monk seal conservation through monitoring of species and habitat; GESMAR project evaluating Macaronesian marine resources; LIFE project on identification of critical marine areas for bottlenose dolphin and surveillance of conservation status of cetaceans; INTERREG-project monitoring cetacean populations; EEA-grant funded projects on seamounts biodiversity assessment; MISTIC'SEAS (2015-2017) establishing systems to monitor marine biodiversity
	Azores (PT)	X	X (OSPAR)	No marine KBAs prioritized due to lack of species distribution data	Very good data availability for coastal and deep-water areas; lack of seabed and habitat mapping data.	Characterization of coastal and transitional waters; Inventory of deep-sea to develop regional strategies for the protection of ecologically relevant habitats (Rebikoff-Niggeler Foundation, RNF); Seabed mapping and cold-water coral habitat studies (RNF); ATLAS project assessing deep-water habitats and species and development of cost-effective management strategies stimulating Blue Growth; Project on seamount ecosystems and their sustainable management; Several projects on marine spatial planning;

Satisfying qualitative representativeness of coastal habitats in most of the ORs and OCTs of the tropical and temperate regions

Across all regions, MPA site selection was often supported by available data on habitat, species and key lifecycle area distribution. Most MPA designs to date cover the main coastal habitats of the region, which are generally better protected than offshore areas. These coastal habitats include mangroves, reefs and seagrass in tropical areas or those defined by the EU "Habitat, Fauna, Flora" Directive in the North Atlantic and Macaronesia.

The "Review and Reassessment of the Turks and Caicos Islands Protected Area System" (1970, revised in 1986) demonstrates that the site selection criteria ensured "that the system incorporates sites representative of the island habitat diversity, that these are represented at a relevant (for conservation purposes) scale, that fragile ecosystems / species are protected, and that species / habitats particularly sensitive to human intrusion are protected". Therefore, while this Protected Area System was conceived almost 50 years ago, the assessment concluded that it was designed based on many factors that today would be considered to support an ecological network (Carleton and Hambrey, 2006).

However, the improvement of conservation science advising the protection of at least 20% to 30% of each habitat (IUCN, 2003) outlined the lack of capacity and funding to provide supporting data for MPA managers to assess their progress against MPA objectives and ecological effectiveness of managed areas.

Across all European ORs and OCTs, only the British Virgin and Cayman Islands assessed quantitatively their coastal marine habitat distribution and the level of protection for each habitat. In the BVI, the habitat distribution data was used to design a network of MPAs that would cover at least 30% of each marine habitat as described in the case study presented at the end of this chapter. Similar habitat mapping projects and protected habitat coverage assessments are ongoing in most of the UK Overseas Territories (Anguilla, Turk and Caicos, Bermuda). For OCTs of the Pacific Ocean as well as Sint Eustatius and Martinique, good habitat data is available but not a quantified assessment of the protection of each habitat. Current habitat data availability does not allow such assessments for Guadeloupe, St Martin or St Barthélemy due to incomplete datasets. Habitat mapping has been conducted for the French OR and OCTs of the Indian Ocean (Mayotte, Reunion, Scattered Islands). In all three ORs of Macaronesia MPAs were designated as part of the Natura2000 network to protect the identified species and habitats but MPA site selection was not always supported by habitat and species data. Assessments of the representativeness of these MPAs are largely missing and monitoring of protected marine species was not regularly pursued by the Regional Governments. As a proxy for habitat mapping, the Spanish Government funded different projects to identify benthic communities down to 50 m depth around each Canarian Island.

Biogeographical workshops, organized to assess the satisfactory representativeness of MPA in the EU Member States, operate only at the level of the Member State, and thus do neither provide information at individual EU Overseas entity scale nor areas of complementary investigation in order to better assess all the European marine conservation efforts.

...but a lack of offshore, pelagic and benthic habitat representation in the same areas

Across most of the European ORs and OCTs, pelagic and deep sea habitats often lack protection even if several recent declarations, as well as current offshore MPA projects, are slowly contributing to fill this gap. Current offshore protection includes the entire EEZ of the Chagos Archipelago, Mayotte, Martinique, Pitcairn, New Caledonia, Saint Helena, as well as the waters of Saba Bank, TAAF and several seamounts and hydrothermal vent fields within and beyond the Azorean EEZ.

A lack of data but ongoing efforts for a better representativeness in the South Atlantic and Subantarctic area through the establishment of large MPAs

In the South Atlantic and Subantarctic area, there is global lack of knowledge on the distribution of both coastal and offshore habitats. Coastal habitat mapping projects and further research are ongoing in the waters of the region. It does not appear that quantifying representativeness of MPAs will be possible in the near future. However, several existing MPAs in this area cover large portions of territorial waters or even the entire EEZ and therefore representativeness of coastal and offshore habitats, species and critical areas is *de facto* satisfactory. As a result, MPAs in the South Atlantic and Subantarctic region are likely to have the highest representativeness level of all European ORs and OCTs.

French research boat Marion Dufresne, collecting data in the Subantarctic and Southern Ocean © Stéphanie Légeron

A need to improve knowledge on the distribution of important areas for vulnerable life cycle

Besides habitats, representativeness also implies the identification of important species and key areas for

vulnerable life stages such as breeding sites, spawning aggregations and migration routes for their conservation. Across all geographic areas, flagship species such as turtles, dugongs or penguins are generally well protected or at least the need for their conservation is well recognized. As a result, many projects aim to improve knowledge on their distribution, habitat and life cycle, such as REMMOA, a survey of marine mammals and other pelagic megafauna by aerial observation, implemented by the former French MPA Agency (French Biodiversity Agency now): assessment of the distribution of cetaceans, sharks and turtles across French ORs and OCTs and some neighbouring countries of the Caribbean, Indian and Pacific Oceans through extensive data collection from flights over the EEZs.

Aerial observations, Mont Choungui volcano in the southern part of Mayotte © Johannes Chambon

Declarations of EEZ-wide sanctuaries are a noticeable result of interest for flagship species. There are currently cetacean sanctuaries in the EEZs of the French Antilles (Agoa), the Caribbean Netherlands (Yarari), Bermuda, French Polynesia, New Caledonia, Tristan da Cunha, Saint Helena and Madeira. In addition, all shark species are fully protected in French Polynesia. Together with the other regional sanctuaries in the Cook Islands, New Caledonia, Palau, the Marshall Islands and the Federated States of Micronesia a large area of the Pacific is a haven for sharks. Another regional network of shark sanctuaries is located in the Caribbean, where the waters of the British Virgin Islands, the Cayman Islands, Saba, Bonaire, Sint Maarten and the Bahamas protect sharks, with Curaçao to follow. This makes the EU Overseas host of half of the world's shark sanctuaries.

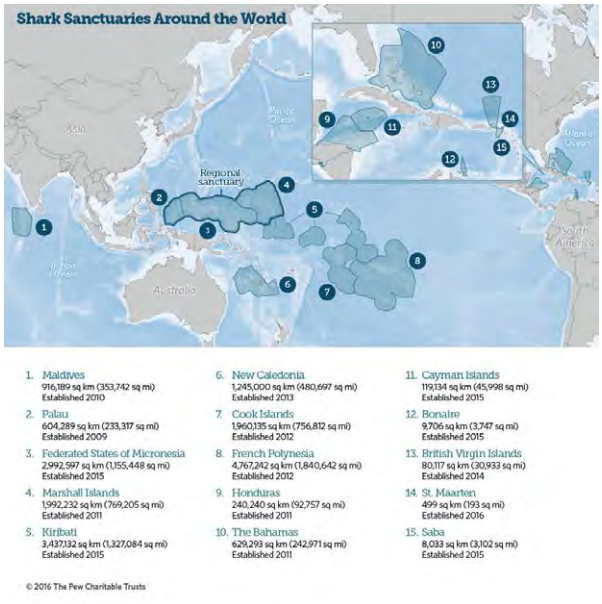


Figure 27: Shark sanctuaries around the world: The importance of sharks is recognized through the declaration of shark sanctuary networks in the Pacific and Caribbean. (Source: The PEW Charitable Trust, 2016)

Shark in Grand Cayman waters © Ellen Cuylaerts, Marine Photobank

On the other hand, important areas for vulnerable life cycle of other marine species and notably fish species have not been so well documented and protected. Bermuda and New Caledonia have seasonally protected areas for spawning aggregations of several species, but these areas are not widely established across European ORs and OCTs. Important areas for vulnerable life cycle are better documented and

protected if they are directly linked to a specific habitat such as fish nurseries in mangroves or foraging grounds in seagrass beds as a result from the research undertaken in these habitats. To date, only New Caledonia conducted a comprehensive identification of several fish spawning aggregation around the mainland. Similar surveys would need to be undertaken at a greater scale to improve the representation of these areas in MPA designs. A priority would be to consider species listed under CITES and on the IUCN Red List of Threatened Species as critically endangered (CR) and endangered (EN).

The 9 categories of French marine protected areas

Under the Code for the Environmental (Article L334-1), France has nine categories of marine protected areas, each of which fulfills its own objectives while complementing each other:

1. National parks,
2. Regional parks,
3. Nature reserves,
4. Biotope protection areas,
5. Natura 2000 sites,
6. Parts of the maritime public domain entrusted to the Conservatoire du Littoral,
7. Marine parks,
8. Fisheries conservation areas/zones,
9. National reserves for hunting and wildlife with a maritime component.

In April 2017, the French Government passed a decree defining the framework for classifying a new category of marine protected areas for all French territorial waters (within 12 nm limit), including the Overseas: This new category encompasses marine areas of particular interest for reproduction, growth or feeding of fish species, which are to be preserved or restored in order to improve their conservation status. The creation of a new fisheries conservation zone is based on a proposal initiated by relevant stakeholders (fishermen, associations, managers and public institutions) and needs to define concrete measures defined on a case-by-case basis according to the species and the ecological and social-economic contexts of the zone and follow-up plan. While several other categories of French MPAs (see text box) contribute to the protection of marine biodiversity species, the fisheries conservation zones are the first to have specific protection of fish species as its main objective.

Following this decree a research programme was set up to identify the most strategic functional areas for the different species and to consolidate the knowledge by compiling existing information, databases and maps on fish population and fisheries. An inventory of these functional areas of fisheries within the framework of the Marine Strategy Directive is currently under way and will allow contributing to this initial inventory. For the French Antilles this work will be implemented by the French Biodiversity Agency (AFB) with technical support from.

Traditional fishing in Ouvea, New Caledonia © Maël Imrizaldu

3.3. Learning and MPA management support networks

If ecological networks of MPAs are not yet operational in the vast majority of European ORs and OCTs, other networks related to MPAs do exist. These networks aim to support MPA managers in their day-to-day activities through learning exchanges, training in MPA management skills, such as planning or monitoring and support for funding.

Networks such as CaMPAM, the French MPA Managers Forum or TE ME UM network[147] are mostly geared towards learning through exchange of experience. These networks have a wide membership and offer specific and small-scale financial support. Their main activities are to organize exchanges and build capacity.

In contrast, the Dutch Caribbean Nature Alliance (DCNA) functions as a management unit, which helps and assists other protected area management and nature conservation organisation by taking care of communication, representation and fundraising in addition to institutional capacity building and providing a data exchange platform. DCNA developed a planning process that assists park managers to develop management plans, including for the six marine parks, which are then regularly monitored through the DCNA management success project. In 2006, DCNA created a trust fund to support operating costs, including management costs for the marine parks and terrestrial protected areas in the Dutch Territories.

147 TE ME UM - TErres et MErs UltraMarin

The network for Locally Managed Marine Areas (LMMAs) supports more in-depth 7 country networks primarily in the Indo-Pacific by providing information and resources on locally-managed marine areas (LMMAs) and community-based adaptive management (CBAM), training in project design, monitoring, data management and analysis, fundraising, communications and more. The LMMA approach differs from that of formal MPAs as they are characterized by local community ownership and include more traditional practices and management tools.

Case Study: Building a representative MPA network in the British Virgin Islands (Source: Reef Resilience)

The British Virgin Islands (BVI) has been threatened by natural disasters and anthropogenic impacts: frequently impacted by hurricanes and flooding from torrential rains resulted in landslides, which harmed the marine resources due to increased sedimentation. In 2005 almost 90% of reefs were bleached. The vast human impacts include

- Anchor damage from charter boats, private vessels, mega yachts and mini cruise ships;
- Coastal development of marinas, hotels, villas and golf courses;
- Uncontrolled tourism development with overcrowding of vessels that originate from the BVI, US Virgin Islands, Puerto Rico and throughout the Caribbean;
- Overharvesting of conch, spiny lobster and whelk (sea snails);
- Harmful fishing practices such as fish pots and spears;
- Increased sedimentation due to development on steep slopes, unpaved roads, and improper erosion control;
- Unregulated sewage discharge from charter and private vessels and ocean outfall disposal of terrestrial waste.
- The BVI has declared several MPAs and identified additional areas for inclusion in an MPA network. The primary goals of the British Virgin Island MPAs are:
- Creation of an MPA network representing BVI's major marine and coastal habitats;
- Protection of 30% of BVI's important biological habitats (hard and soft corals, seagrass beds, mangroves, turtle nesting beaches, fishery habitats);
- Clustering protected areas together for easier management;
- Having protected areas across the BVI to ensure 'resilience.'

The overall objective was to build a system of protected areas for a more comprehensive approach to protected area planning. To start, ground truthing of marine habitats was completed to update a 1991 GIS dataset of the coastal resources of the BVI, which had been the basis for the initial MPA network design. The updated GIS dataset was then fed into MARXAN, a marine reserve design software that provides alternative solutions for meeting conservation goals. The National Parks Trust of the Virgin Islands collaborated with The Nature Conservancy (TNC) to provide the required expertise to run the software.

To begin the MARXAN modelling exercise, BVI was divided into three geographic units to build resilience into the system through even distribution of MPAs in each unit, which eliminated the potential to place heavy reliance on the extensive reef system surrounding Anegada (Horseshoe Reef) to the expense of other areas. Certain areas were 'locked in' the MARXAN software to ensure that they would be included in the MPA network. These included areas that the National Parks Trust of the Virgin Islands and the Conservation and Fisheries Department identified as important due to their biodiversity, importance as fish nurseries or breeding habitats. Additionally the MARXAN software was programmed to select at least 30% of each biological habitat type (i.e. soft corals, hard corals, algae, seagrasses, mangroves) from the 2006 coastal resource dataset.

Using the software, four potential MPA networks were generated with varying levels of MPA clustering and 'locked in' areas. Then meetings with stakeholders, including fishermen, dive operators, charter boat industry and relevant government departments were organized using existing organisations such as fisheries associations, the Charter Yacht Society, the Dive Operators Association, and the Marine Association. These meetings on the four main islands in the BVIs (Tortola, Anegada, Virgin Gorda and Jost Van Dyke) ensured stakeholder participation in the review process of the maps and selecting the most preferred MPA network among the four the modelling provided. Taking the feedback into account, the MPA network with the highest level of clustering and locked-in areas was selected and slightly modified

based on all stakeholder input. In early 2008, the BVI Government approved the overall proposed System Plan of Protected Areas for the BVI, which included the final map.

Key Lessons Learned

- Selecting areas that are naturally protected from use due to location, rough seas, or depth will assist in achieving conservation goals with less stakeholder conflict.
- It is critical to plan field work in a strategic manner that ensures optimal field assessment and representation of geographic units. The BVI was divided into three geographic units for the MARXAN analysis to ensure equal ground truthing of polygons to maintain accuracy in the selection of 30% of each habitat type for inclusion in the MPA network.
- A greater understanding of the stakeholder groups is important. As the National Parks Trust of the Virgin Islands did not traditionally have a relationship with fisheries it was not always possible to engage fishermen. Therefore, working with the Conservation and Fisheries Department fisheries extension officers was essential and helped improve these relationships.
- It is critical to build trust between the government and the community. This entails continued engagement of stakeholders throughout the MPA planning process, particularly when zoning areas. In some cases, areas may have to be swapped (e.g. if 30% of a habitat can still be achieved by protecting another area and there is less conflict, then it may be wise to swap.)
- Building resilience using geographic distribution across an area and natural features can reduce conflict between stakeholders and conservationists. For example, some areas that have been included in the MPA network are located on the north or south sides of islands that are naturally too exposed, deep or rough to be utilized by stakeholders, therefore there is no conflict involved in protecting the area, but the 30% goal of habitat protection is still being achieved.

The Nature Conservancy (TNC) and BVI National Park Trust staff discussing the maps with the Fisheries Association of Virgin Gorda. © National Parks Trust of the Virgin Islands.

Tuamotus, French Polynesia © Jean Kape

By providing training events and support to management planning and review, protected area managers can focus on the day-to-day operation of their MPAs. LMMA, and to a minor extent DCNA, share their experience beyond their membership. In the case of LMMA, the tribes of Northern New Caledonia went on a study tour of the Fijian Locally Managed Marine Areas and technical advisers of the LMMA network support team provided training on participatory management planning to French OCTs in the Pacific. In addition, the LMMA network hosted two conferences, in 2000 and 2008, where all managers of the Pacific region were invited to attend and share their management experiences and lessons. Exchanges are not as regular as in other networks like CaMPAM but they offer a forum for managers to share their best practices and discuss their issues with people who might help. After the 2008 conference, French Polynesia's participants went back to their country with the idea of building their own local MPA network. This network has not yet been established but representatives from French Polynesia are in regular contact with the LMMA network. New interested countries such as Tonga and Tuvalu joined the Fiji LMMA lessons learned event in 2015 and 2016.

Building on the innovative French Polynesia Educative Marine Managed Areas, the PUKATAI network is growing and expanding to other regions. Even if those networks were not established with the objective of pro-

viding ecological coherence to the MPAs in the given region, their existence is definitely an asset if such a regional ambition would emerge. The social ties built through these professional networks could act as a trigger for greater ecological coherence. Those active networks can also generate political will and funding commitments.

The Indian Ocean Commission MPA network RAMP-COI is quite different from the other networks discussed above. It was created through a 3-year project funded by the French Development Agency and WWF-Madagascar with the main objective of supporting the establishment of an ecologically coherent regional network of MPAs as well as an exchange forum for managers of the region. During the course of the project, 3 workshops were organized for managers to receive training and exchange best practices. An MPA strategy was defined as an output of this project but never adopted and the future of the manager exchange forum remains unclear. An MPA network for the wider Indian Ocean region with a coherent strategy is urgently needed as well as the necessary means for implementation as existing strategies for various networks (cetaceans, reefs, etc.) are too complicated, too numerous, too separated from one another and not operating.

Capacity building: college students through training on marine biodiversity in Mayotte © Naturalistes de Mayotte

Children learning to carry out an environmental assessment in the Hanaiapa Educational Marine Managed Area (EMMA), Hiva Oa, Marquesas Islands, French Polynesia © Créocéan

Table 14: Relevant networks in European ORs and OCTs to exchange MPA management experience.

Initiative	Area	Participating European ORs and OCTs	Supporting body	Funding	Governance	Date of creation	Activities / Objectives
CaMPAM http://campam.gcfi.org/	Caribbean	All (in the Caribbean)	CEP, TNC, GCFI, NOAA	CEP-SPAW, TNC, GCFI, NOAA, Italian Government	Executive and leadership resource team served as manager until 2008; appointment of a manager	1997	- Small Grants Fund (SGF) Programme; - Training of Trainers (ToT) programme; - CaMPAM Mentorship Program for Caribbean MPA managers and practitioners; - Exchanges and other relevant mechanisms for sharing lessons learned; - MPA regional database; - Coordination and technical meetings ; - CAMPAM-L mailing list for information, dissemination and discussion.
DCNA www.dcnanature.org/	Dutch Antilles	Dutch OCTs	Non-profit organisation	Dutch Ministry of Interior, Dutch Postcode Lottery, WWF-NL, Prince Bernhard Nature Fund, Vogelbescherming Nederland	DCNA secretariat implementing an action plan defined by a board of members	2003	- Fundraise and secure long-term sources of financing for nature conservation ; - Promote and represent the goals and activities of nature conservation nationally and internationally. DCNA serves as the voice of the Dutch Caribbean protected areas ; - Promote institutional capacity building, training, partnership building and resource sharing ; - Provide a central repository for information relating to biodiversity and protected areas.
RAMP-COI http://rg-amp-oi.org/	Indian Ocean	Reunion Island	IOC	FFEM, MAE, WWF	Steering committee and WWF is the implementing agency	2005	- identify important marine biodiversity area to set-up MPAs ; - support the establishment of a regional network of MPA ; - Share best practices between managers ; - Develop a regional dynamic for MPAs in the region.
MPA Manager's Forum http://forum-aires-marines.fr/	France	French ORs and OCTs	Informal network	ATEN, AAMP, Environment Ministry	Informal board with a President and one person in charge of the animation	2001	- facilitate implementation of collaborative projects ; - input from MPA managers to national strategies ; - share best practices.
TE ME UM http://temeum.espaces-naturels.fr/	Overseas France	French ORs and OCTs	ATEN	Environment ministry, other government bodies, and NGOs	Steering committee (including Ministries, managers and NGOs), one coordinator and one local facilitator in each OR and OCT	2009	- Strengthen capacities; - Support fundraising; - Small grant projects financing; - Develop exchanges and cooperation at ecoregional scale.
LMMA http://www.lmmanetwork.org	Pacific region	None	NGO	Private foundation (Packard and MAcArthur foundations)	One network support team, one local coordinator per country	2000	- Provide information and resources on locally-managed marine areas and community-based adaptive management; - Training in project design, monitoring, data management and analysis; - Direct funding support to members; - Fundraising; - Communication.

Sources: AAMP-French marine protected areas agency ; ATEN- Ateliers Techniques des Espaces Naturels ; CEP- Caribbean Environment Programme ; DCNA-Dutch Caribbean Nature Alliance ; FFEM : French Global Environmental Facility ; GCFI-Gulf and Caribben Fisheries Institute ; LMMA-Locally-Managed Marine Areas ; MAE-French Foreign Affairs Ministry ; NOAA-US National Oceanic and Atmospheric Administration ; SPAW-Protocol concerning Specially Protected Areas and Wildlife ; TNC-The Nature Conservancy ; WWF-World Wildlife Fund

4. EU OVERSEAS MPAS AND MPA NETWORKS IN THE FACE OF CLIMATE CHANGE

Although recognized only relatively recently as a threat to biodiversity, climate change is rapidly becoming an equally, and - according to some scientists - possibly even the most important conservation challenge (Thomas *et al.*, 2004). Island ecosystems, like coral reefs, are highly sensitive to changes in their environment. A long-term study of over 8,500 live coral cover survey collected over the period of 1969-2006 shows the benefits of MPAs to coral reef resilience: MPAs are a tool for restoring fish populations and maintain coral cover (Selig & Bruno, 2010) when well designed. Moreover, expanding MPAs to also include degraded reefs, cannot only help reversing the trend of worldwide coral reef decline by enhancing natural, restoration-assisted recovery but also promote more resilient and better-connected MPA networks, and thus improve conditions for communities dependent on MPA ecosystem services (Abelson *et al.*, 2016). The EU Overseas with their immense marine domain and critically important costal and marine ecosystems are well positioned to make use of MPAs for ecosystem-based adaptation and mitigation as a 'no-regret' climate change strategy.

Resilient coral reefs in large-scale no-take MPA, British Indian Ocean Territory © Anne Sheppard

4.1 EU Overseas at the frontline of climate change

Significant changes in temperatures, tropical storms, and sea levels have already been observed in the overseas entities of the European Union. Major impacts have been recorded; such as coral bleaching - recently killing some of the most pristine reefs in the Indian Ocean in 2016 – or the erosion of some coastlines, and predictions about future impacts of climate change on the island biota and ecosystems of Europe are alarming (Petit and Prudent, 2008). In New Caledonia and French Guiana the average temperature increased by more than 1°C in the past 40 years (*Rapport d'information Assemblée Nationale, 2015*). In 2005, Caribbean Sea temperatures rose above 29°C during a 6 month period, provoking massive coral bleaching in Guadeloupe with a 40% coral mortality rate (Wilkinson & Souter, 2008). Temperature records caused massive bleaching events in previously resistant reefs of New Caledonia, BIOT and Mayotte. In the waters around the Canary Islands sea surface temperature raised on average +0.1°C/decade, although NCEP-NCAR re-analysis showed that this temperature increase is more pronounced in the south-western islands (+0.3°C/decade) (Santos *et al.* 2012). Satellite imagery shows that ocean phytoplankton have declined as much as 30% in some areas of the South Pacific over the last 10 years due to rising ocean temperatures (Behrenfeld *et al.*, 2006). The world ocean surface pH has dropped 0.1 units since industrial revolution, which means a 30% increase of seawater acidity. Data from the ESTOC (European Time Series) station near the Canary Islands showed a pH reduction of 0.02 units since 1997 demonstrating an accelerated ocean acidification threat (Orr *et al.* 2005; Santana-Casiano, *et al.* 2007). Sea level rise was more than twice the global average between 1950 and 2010 in French Polynesia (*Rapport d'information Assemblée Nationale, 2015*). Beach erosion can result in the loss of sea turtles nesting habitats, and an increase in the sand temperature could disrupt the sea turtle male/female ratio, which is determined by the temperature at which eggs incubate (Laloë *et al.* 2014). About 13% of the mangrove areas in the South Pacific could disappear before 2100 with a global sea level rise of 88 cm (Petit and Prudent, 2008).

Climate change has already resulted in more frequent and stronger cyclones and tropical storms in the tropical areas of the EU Overseas © Maël Imrizaldu

Dramatic climate changes are also measurable in the Polar Regions: Temperature rises at roughly double the average rate of warming across the Arctic region, contributing to loss of sea ice and melting glaciers that lead to sea level rises. Ocean acidification has occurred to a level twice as observed elsewhere due to larger CO_2-uptake of the cold waters In the Arctic (AMAP, 2013). These cascading effects in the Arctic (cause-effect relationships, feedback effects, causal chains) can have self-reinforcing feedback loops with global consequences, such as increased heating of the atmosphere in areas where sea-ice cover has gone: Sea ice loss already affect migration of species with potentially profound impacts on biodiversity and productivity of marine ecosystems (CAFF, 2013) and Arctic communities depending on them in terms of availability or quality of food and other resources.

Several studies show the impact of climate change on marine ecosystems in the EU Overseas

Studies investigating the impacts of climate change, including on marine biodiversity, have been conducted in most of the European ORs and OCTs. In the French ORs and OCTs, these studies were undertaken by the National Observatory on the Effects of Global Warming (ONERC)[148] and by the Joint Nature Conservation Committee (JNCC) in the UK Overseas Territories (Brown *et al.,* 2008). The Dutch Government commissioned a study on the effects of climate change on Bonaire, St-Eustatius and Saba islands in 2010 (Debrot et *al.,* 2010). Several territories conducted specific climate change impact studies, resulting in the *Baseline Study on Climate Change in French Polynesia* (Avagliano & Petit, 2009), an *Arctic Climate Impact Assessment* (ACIA, 2004) and the "*Arctic Resilience Report*" (Arctic Council, 2016), a *Climate Change Risk Assessment for the Falkland Islands*[149] (Upson et al. 2016), and « The Impact of Climate Change on Bermuda » (Glasspool, 2008) and an interesting social-ecological vulnerability mapping in Moorea (Thiault *et al.* 2017). In Macaronesia, the main concerns about climate change relate to terrestrial biodiversity but local researchers demonstrated that marine biodiversity are impacted as well, mainly through migration of tropical species in Macaronesian waters (Cardigos *et al.,* 2006; Brito 2008) but also through ocean acidification leading to decreased calcification rates in diverse marine species, such as corals (shallow and deep-water species), bryozoans, crustose coralline algae, mollusks, planktonic organisms with calcified plates (Orr *et al*., 2005).

Penguins on the ice off the coast of the Antarctic Peninsula © Bruno Marie

In addition to climate change impact studies, both ONERC and JNCC provide support information and toolkits to assist territories in planning for climate change. JNCC developed a set of material for the UK territories, including a policy brief for decision-makers to climate-proof policies and programs, guidelines for individuals to reduce their climate impact or practical guidance for the practitioners who must plan and manage biodiversity in the face of climate change. Similarly, ONERC provides a set of climate change information and tools to plan for adaptation although it is not specific to French overseas regions and territories. The French Initiative for coral reefs, IFRECOR,

148 The publication "Climate Change and Biodiversity in the European Union Overseas Entities", which is based on a review undertaken by IUCN and ONERC, presents the existing knowledge on climate change impacts on biodiversity of the EU Overseas at the time of the first climate change conference dedicated to the EU Overseas in Reunion in 2008. It highlights examples of strategies to mitigate or adapt to climate change effects for some regions.

149 The report on *Climate Change Risk Assessment for Plants and Soils of the Falkland Islands and the Services they provide* is the outcome of the TEFRA project funded by the European Commission in 2012 as part of the BEST Initiative. Results were also published in PLoS One.

together with ONERC defined 8 indicators to measure the health of coral reefs, the oceans and the effects of climate change on French Overseas entities. IFRECOR has also been working on guidelines and recommendations for the adaption to climate change and material to sensitize the public[150].

Coral reefs in Bonaire © Erik Meesters

Climate change impacts on coastal ecosystems are mainly observed through **monitoring and survey programs**. However, these programs have not been established specifically to monitor climate change impacts but ecosystem health in general. They are established throughout EU ORs and OCTs and have already measured some of the effects of global warming on coastal ecosystems, especially coral reefs. The most popular coral reef monitoring program, Reef Check, is widely implemented in the tropical ORs and OCTs along with more specific programs undertaken by experienced marine biologists. The Global Coral Reef Monitoring Network[151] launched an initiative in the Caribbean (GCRMN-Caribbean) in 2014 to strengthen and revitalize coral reef monitoring in the region and produce an Indian Ocean report in 2016 while a pacific report is under process[152].

Specific response plans were developed to monitor the impact of bleaching events in Bonaire, Curaçao, St-Eustatius and St-Maarten in addition to regular monitoring. These plans included not only monitoring but also implementation of various management strategies. The St Maarten Coral Bleaching Response Plan was put into effect in September 2012 following observations of bleached coral in the Man of War Shoal Marine Park (St Martin News Network, September 2010). Monitoring of sea turtle nesting beaches, as done on St. Eustatius and Bonaire, including measurements of beach width and sand temperatures (as the sex ratio of hatchling turtles is influenced by nest temperature) can also contribute to climate change data.

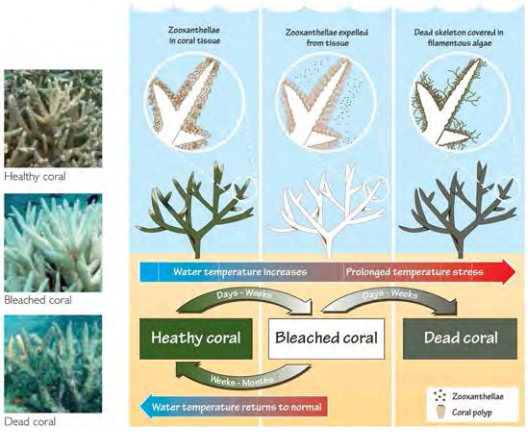


Figure 28: Coral bleaching process as a response to water temperature rise, reproduced from "A reef manager's guide to coral bleaching" (Source: GBRMPA, 2006)

Climate change impacts - a well-known issue, repetitively reminded in political messages...

Coping with and fighting these alarming changes already felt in the EU Overseas and predicted for the future of their vulnerable ecosystems and biodiversity was the main focus of the first conference dedicated to the EU Overseas and Climate Change in 2008 in La Réunion. The resulting Message from Reunion Island highlighted the fact that the "*quality and overall area of protected areas in the ORs and OCTs need to be increased to accommodate climate change impacts. The ecosystem approach should be applied outside protected areas, and the degree of threat from other direct drivers of biodiversity loss needs to be reduced*". The Message from Reunion Island recommended that "*Specific climate scenarios for each OR and OCT need to be developed, which should be supported by regional modelling; subsequently climate change vulnerability assessments need to be conducted and adaptation plans developed in all the ORs and OCTs, considering and involving the variety of relevant sectors, and adapting existing tools and methodologies. Finally, the proposed adaptation measures need to be implemented and monitored" (Message from La Reunion, general recommendation n°9*).

150 More information on IFRECOR activities on climate change is available on the dedicated website.

151 GCRMN supports the International Coral Reef Initiative (ICRI) in collecting and sharing data through a global network

152 Status and Trends of Coral Reefs of the Pacific Islands, A Global Coral Reef Monitoring Network (GCRMN) Regional Report, focusing on the island Pacific, Concept note, 2017.

Parker Snow Bay, Greenland © Stewart McPherson

During the International Conference on Biodiversity and Climate Change 2014 in Guadeloupe participants agreed on a Message, which reinforced the importance of identifying and adopting measures to build resilience and mitigate climate change, in particular raising greater awareness and providing more information on the impacts of climate change to the local population. Moreover, it was highlighted to *"Consider an 'Islands adapt and mitigate initiative' that would include nature-based solutions and that capitalises on and further strengthens existing initiatives"* through the following:

- Developing integrated management approaches for biodiversity vis-à-vis climate change in the ORs, the OCTs and in their regions;
- Elaborating strategies to address the projected impact of climate change on water resources and the availability of fresh water for people and biodiversity;
- Assessing key species and ecosystems to identify those that can be used as specific indicators for ORs and OCTs vulnerable to climate change;

The Message from Guadeloupe also called for:

- Concrete actions that reinforce mainstreaming biodiversity and climate change across all investment processes particularly European funds (EDF, ERDF, Horizon2020, DCI).
- Support the strengthening of the protected area systems in the ORs and OCTs with the aim of i) increasing their ecological representativeness, ii) networking at regional level, iii) fostering ecological connectivity and iv) improving their management effectiveness, taking into account prerogatives of managers, the competences of local governments, the role of civil society.

...yet, too few climate change adaptation projects

Whereas climate change impact studies were undertaken in EU ORs and OCTs as well as possible adaptation options, too few specific adaptation plans have been developed with explicit cost efficient ecosystem based solutions. Three main climate change initiatives are however notable and of interest regarding marine conservationacross the EU ORs and OCTs:

ECACC, Enhancing Capacity for Adaptation to Climate Change – Caribbean (UK)
ACCLIMATE – Indian Ocean
SRCAE, "Schémas Régionaux Climat-Air-Energie" (Climate-Air-Energy Regional Schemes) – Caribbean/ Indian Ocean

ECACC: Enhancing Capacity for Adaptation to Climate Change - Caribbean

The ECACC project was implemented between 2007 and 2011 in the Caribbean UKOTs Anguilla, the British Virgin Islands, Montserrat, Turk and Caicos and the Cayman Islands, supporting their efforts to adapt to climate change. The project was funded by the Department for International Development (DFID) and implemented by the Caribbean Community Climate Change Centre (CCCCC). The project delivered:

- Vulnerability assessments
- Adaptation strategies/Green papers
- Climate change policy drafts
- Coral reef monitoring
- Public education and outreach
- Various technical reports

The project also resulted in various levels of detail in the assessment of climate change impacts on marine biodiversity and proposed adaptation measures for coastal ecosystems and MPAs in the adaptation strategies. Adaptation measures for the British Virgin and Cayman Islands using two different approaches are extracted below. The British Virgin Islands' Green Paper follows an ecosystem approach to adaptation, detailing adaptation of three ecosystems: coral reefs, mangroves and seagrass beds. The Cayman Islands uses a vulnerability approach and prioritizes issues to be addressed immediately, short-term and medium-term. For each of the issues, the strategy defines whether the actions will result in preventing or spreading loss, changing activity or relocating ecosystem functions. The strategy also foresees that losses will inevitably occur ("Accept loss").

Examples of adaptation measures related to marine ecosystems and MPAs in the Green Papers produced by the ECACC project.

British Virgin Islands

Preferred adaptations options for coral reefs

- *Expand and improve management of Marine Protected Areas (MPAs)* - clearly demarcate MPAs, improve monitoring and enforcement of MPA rules and regulations, and educate the public about MPAs.
- *Revisit protected areas over time* to ensure that they are extensive and rules and regulations strong enough to accomplish management goals (esp. as climate change creates new dynamics, such as fish migration to cooler waters).
- *Implement a rotating system of closure (recovery periods) for reefs* in which all human impacts are temporarily removed from selected reefs.
- *Decrease recreational damage from divers and snorkelers* - introduce a mandatory orientation for divers and snorkelers with charter boats or dive operators.
- *Decrease anchor damage* – introduce a mandatory orientation for skippers and people chartering a yacht, Increase the capacity and maintenance of the existing buoy system and make its use mandatory. Increase monitoring at popular anchorage sites to ensure use of the buoy system.
- *Decrease sedimentation* - require timely that roads/driveways, create permit system for the regrading of roads and clearing of land.
- *Decrease nutrient pollution in coastal waters* by improving sewage waste management on land and at sea and decreasing agricultural run-off. On land – invest in tertiary level municipal sewage treatment facilities, upgrade and enforce regulations related to septic tank construction and maintenance. At sea – require yachts to have and use holding tanks, and require marinas, public docks and ports to have pump-out stations.
- *Increase monitoring of coral reefs* so that changes in water temperatures and pH, and responses in coral health can be detected early and feed into adaptive management frameworks.
- *Develop coral nurseries* to repair damaged reefs and rear species more resilient to bleaching.
- *Increased public education about coral reefs* (including integration into the school system) to force political will for better protections.

Preferred adaptation options for mangroves

- *Strongly protect all remaining significant mangrove forests.*
- *Expand and enhance mangrove reforestation program.*
- *Through smart land-use planning, allow room for landward migration of mature mangrove forests* by protecting the land behind these areas from development. The Government can seek to acquire these lands and place them in permanent protection through the National Parks Trust or create incentive programs to encourage "soft" developments in these areas as opposed to "hard" developments.
- *Shelter young mangroves from storm surges* by protecting natural coral reefs and, where suitable, constructing artificial reefs in priority areas.

Preferred adaptation options for seagrass beds

- Enhance protection of seagrass by placing significant seagrass beds in MPAs and enhancing their legal protections in remaining areas.
- *Protect seagrass beds from high-energy wave action* by protecting existing coral reefs and, where suitable, constructing artificial reefs in priority areas

Cayman Islands

Priority issues requiring immediate actions regarding the impact of cc on turtle nesting and breeding patterns from beach erosion (habitat loss), periodic inundation and elevated sand temperatures (skewing of sex ratio):

Accept Loss

- Accept loss of some nesting beaches to sea-level rise identified in local vulnerability study.

Prevent Loss

- Continued monitoring of threats to nesting populations and identification of nesting locations and conditions threatened by climate risks (especially sand temperatures), sea level rise and human activity (e.g. coastal development) which could be mitigated.
- Implement engineered solutions (e.g. beach nourishment) on selected nesting beaches particularly vulnerable to beach erosion to support long-term nesting activities.
- Implement *Species Action Plan 2009* for marine turtles, and conduct periodic evaluation measures against increasing climate change threat

Change Activity

- Locate new coastal development away from nesting areas under threat supported by regulations to increase coastal construction setbacks
- Implement necessary measures to reduce current level of poaching and disruption of breeding patterns by human activities

Relocation

- Relocate nests vulnerable to inundation from high storm surges and impending hurricanes to less risk-prone beaches or to incubation facilities at the Cayman Turtle Farm.

Priority Issues to be addressed in the Short to Mid-Term on coral reefs impacted from warmer sea temperatures (coral bleaching), ocean acidification and sea-level rise

Accept Loss

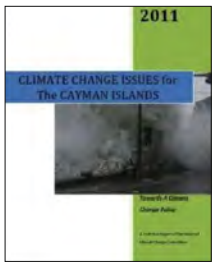
- Accept a certain level of loss from global activities that have caused increased sea surface temperatures beyond the threshold of some Caribbean corals to survive and ocean acidification.

Prevent Loss

- Enhance existing long term coral reef monitoring programs and provide additional resources for research specifically related to detecting climate change impacts
- Implement the *Habitat Action Plan* for Coral Reefs
- Complete the ongoing review of marine parks system, the framework for which dates back to 1986, and implement recommendations to enhance protection of these marine resources and reduce anthropogenic stressors so as to facilitate optimal resiliency of these systems to unavoidable climate risks.
- Pass the National Conservation Bill to support recommendations in an action plan developed for this Issue Area/Impact

Change Activity

- Review all other relevant national legislation and policies that have the potential to impact coral reefs and seek to align policies to avoid or minimize vulnerability-enhancing practices.
- ***Spread Loss***
- Utilize the Environmental Protection Fee Fund to enhance conservation and management of coral reefs



As a tangible policy follow up of this project, the British Virgin Islands Climate Change Policy was endorsed in 2011 and refers to "*an integrated, holistic, and participatory national process*" and has as guiding principle *"Climate Change adaptation must take an ecosystem-centred approach, that is, recognise the value of healthy natural ecosystems in buffering Climate Change impacts and favour natural engineering solutions wherever practical"*. The section on policy goals and objectives lists first "*Natural Resources and Fisheries - Enhance the resilience and natural adaptive capacity of our natural resources, including terrestrial, coastal and marine ecosystems as well as the fisheries sector*", which is to be *"achieved through enhanced environmental legislation, enforcement systems and management; expanded protected areas; and adequate resourcing and capacity building"*.[153]

Anguilla, Montserrat and Turk and Caicos Islands developed Green Papers with adaptation strategies with a lower degree of detail and also drafted climate change policies.

153 Taken from *The Virgin Islands` Climate Change Policy: Achieving Low-Carbon Climate-Resilient Development.* (2011), p. 11 (policy goals and directives) and p. 13 (summary of policy directives)

ACCLIMATE: Strengthening adaptive capacity to climate change - Indian Ocean

Acclimate, an Indian Ocean Commission (IOC) project funded by the French GEF, the French Foreign Affairs Ministry, the French Development Agency (AfD) and the Reunion Regional Council, was implemented between 2008 and 2012 with the goal to strengthen the adaptive capacity of IOC and its members. The project had three types of actions:

1. Strengthen observation capacities and climate change understanding
2. Identify climate change vulnerability
3. Draft a regional climate change adaptation strategy

Reunion Island was the only European ORs and OCT of the region to be involved in this project. A vulnerability study was completed and recommendations formulated to feed into in a regional adaptation strategy. The vulnerability of coastal ecosystems to climate change was rated high despite the fact that reefs had been spared from massive coral bleaching until then but they are highly exposed to anthropogenic threats, which are suspected to severely affect the resilience capacity of reefs. For marine ecosystems, the vulnerability of sea turtles and birds was rated as high.

The study recommends strengthening research activities in order to better understand the impacts of anthropogenic activities on coral reefs, and to assess the MPA network effectiveness in relation to climate change impacts.

The vulnerability study also included the French Southern Territories (TAAF), whose vulnerability was rated high, notably for marine species, whereas climate change adaptation strategies are almost non-existent. However, the regional adaptation strategy was developed only for the 5 Indian Ocean Commission Member States Comoros, Madagascar, Maurice, the Seychelles and Reunion Island.

In 2013, the 5 Member States of the Indian Ocean Commission adopted the regional climate change adaptation strategy and developed an action plan (2016-2020) for its implementation in 2016.

Regional adaptation strategy with recommended priority actions for the Indian Ocean region* resulting from the Acclimate project

The strategy defines 4 sectorial and 1 cross-cutting axis with priority areas for actions, including environment (p. 18/19):

Priority actions for the marine environment:

- Understand and monitor the effects of climate change on the marine environment and fresh water sources
- Understand, monitor and protect emblematic marine species whose life cycle span over the entire Indian Ocean region
- Integrate climate change in the design and management of marine protected areas

Priority actions for the coastal environment:

- Protect mangroves as nursery and foraging areas to seed other islands of the Indian Ocean
- Reforestation of the coast, seagrass beds in addition to mangroves
- Restoration / protection of reefs
- Support, implement and develop integrated coastal zone management (particularly for watersheds)

Additional actions for a rapid transition to implement these adaptation actions in the marine and coastal environment:

- Mapping of reefs and habitats & identification of indicator species for habitat vulnerability
- Coral reef propagation as measure for reef restoration
- Integration of climate change concept into MPA projects
- Transfer of management to local communities

The preservation of coastal zones was also mentioned as priority action for food security (for Madagascar and the Seychelles as referring countries for the implementation of initial priority actions).

* The regional adaptation strategy was developed for the 5 Indian Ocean Commission Member States Comoros, Madagascar, Maurice, the Seychelles and Reunion Island.

SRCAE: Regional Climate-Air-Energy Schemes – Caribbean and Indian Ocean French ORs

Islets of St Barthélemy © Amandine Vaslet

The Regional Climate-Air-Energy Schemes (French: *Schémas Régionaux Climat-Air-Energie* - SRCAE) are the main tools for implementation of the French Grenelle objectives at the local level including in the French Outermost regions of the Caribbean and Indian Ocean. These schemes use participatory approaches involving various political stakeholders, NGOs and civil society of each territory. Under the climate theme, the guidelines set in the SRCAE should contribute to reducing greenhouse gas emissions on one hand and adapt to the effects of climate change on the other. These guidelines should serve as a strategic framework for local authorities to define operational actions plans.

Mangroves, Grand Cul de Sac Marin, Guadeloupe © Carole Martinez

The following text boxes present the main adaptations proposed in the area of marine biodiversity, which are subject to change after integration of the public consultation outcomes except for French Guiana, where consultation outcomes were already integrated.

Adaptation priorities and actions proposed in Regional Climate-Air-Energy Schemes (SRCAE) in the Region Guadeloupe, Martinique, French Guiana and Reunion.

Regional Climate-Air-Energy Scheme for the Region Guadeloupe (includes Saint Martin & Saint Barthélemy)

The scheme defines 19 climate change (CC) mitigation, 6 adaptation and 12 implementation directions with objectives and action for implementation together with a list of targets, potential lead and partner agencies, financial sources, conditions of success, supporting policy tools and organizations as well as monitoring indicators. Several directions include actions for marine and coastal environments.

Actions for implementation:

- Identification and mapping of areas vulnerable to CC
- Revise land-planning documents to include protection of vulnerable areas
- Economic valuation of coastal ecosystem degradation
- Develop ecosystem restoration engineering (for reefs, seagrass...)
- Monitor artificial reef pilot project from the regional fisheries committee
- List measures suited to the evolution of natural areas due to CC
- Enforce measures to limit the input of pollutants in the marine environment
- Implement integrated coastal management
- Support current marine conservation efforts (MPAs, reserves, national parks, research...)
- Pursue climate change impact studies on loss of marine biodiversity, destruction of coral reefs, the fisheries sector, algal blooms, species behaviour, etc.
- Put in place and monitor marine energies
- Support sustainable fisheries and aquaculture and involve fishermen in climate change observations

Martinique's Regional Climate-Air-Energy Scheme

The scheme defines 7 strategic directions including management of vulnerability and adaptation to climate change (CC) with objectives and priorities in 4 strategic areas (2 related to the environment).

Improve CC research coordination

- Establish a CC observatory

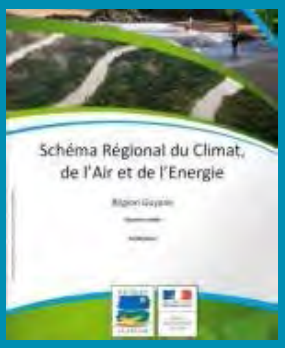
Identify vulnerable areas

- Define local adaptation strategies
- The document includes existing barriers to the proposed action, potential partners, an indication of the scope of required financial investments and technical levels, monitoring indicators and current supporting initiatives.

French Guiana's Regional Climate-Air-Energy Scheme

The lack of data on climate change impacts in French Guiana prevents the formulation of adaptations measures

The scheme defines 20 strategic directions in 5 thematic areas, including adaptation to climate change but a lack of data on climate change impacts in French Guiana prevented the formulation of concrete adaptations measures in the scheme. However, a assessing climate change impacts (2013) proposed the following adaptation options.



Improve knowledge on climate change effects

- Evaluate vulnerability of marine ecosystems and identify indicators for adaptation measures
- Map coastal vulnerability to sea level rise

Develop regional cooperation with short and long-term actions

Re-evaluate and update coastal risk prevention plan according to new vulnerability study outcomes

Map coastal vulnerability to sea level rise

Integrate adaptation in existing public politic

Sensitize and inform population about climate change adaptation

Reunion's Regional Climate-Air-Energy Scheme

The scheme defines 4 directions for the sector environment with objectives, actions, monitoring indicators, concerned actors and available planning tools, with specific actions for the **protection of marine ecosystems to sustain biodiversity and fishing**

- Improve knowledge on vulnerable marine species (e.g. coral reefs) and marine resources
- Reinforce activities in line with integrated marine and coastal management in vulnerable sections
- Make the Reunion Natural Marine Reserve a sentinel for climate change (CC)

Other relevant actions:

- Improve knowledge of CC impacts on ecosystems
- Support activities in favour of regional species (e.g. cetaceans, turtles, fish)
- Eliminate the distribution of plastic bags on markets

The implementation of protected area networks (marine and terrestrial) and ecological corridors are considered critical for the capacity of species and ecosystems to adapt to climate change.

The level of details in each of the regional schemes varies a lot between the ORs (in particular for details on monitoring implementation) as it did between the UKOTs involved in a similar exercise under the ECACC project. All four regional schemes were approved by prefectural order in 2012 and 2013, respectively.

Local fisherman in Mayotte © Charly Andrault

Nature-based solutions still largely missing in EU Overseas climate change strategies

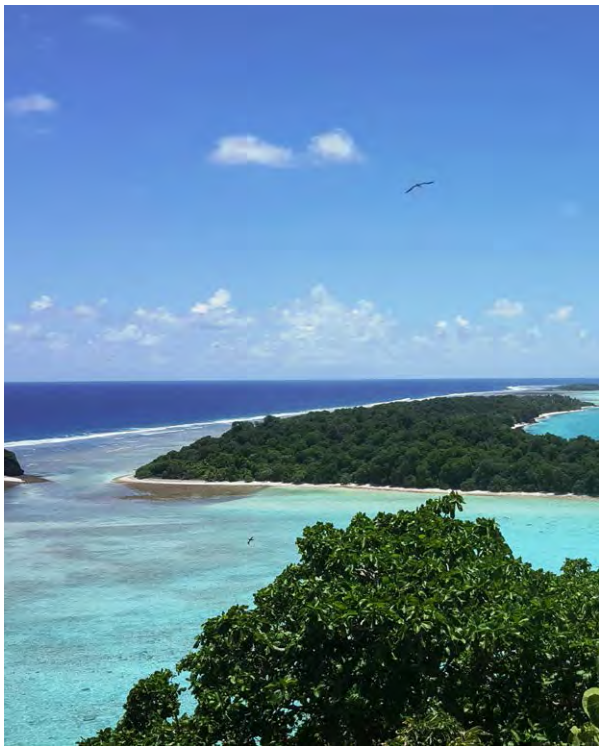
In the **Pacific Region**, the Pacific Adaptation to Climate Change Project (PACC) is being implemented by the Secretariat of the Pacific Regional Environment Programme (SPREP) and is funded by the Global Environment Facility (GEF). Although the French Pacific OCTs are full members of SPREP, they are not eligible to GEF funds and as a consequence were not included in the scope of this project.

In 2012, **French Polynesia** launched its Strategic Climate Plan aiming to ensure this OCT has a sustainable development strategy that is compatible with climate change. This plan integrated both adaptation and mitigation options into sectorial policies. The 6 pillars defined by the Strategic Climate Plan identified the reinforcement of the natural and cultural heritages with 24 strategic orientations including the integration of climate change in the strategy for the creation of terrestrial or marine protected areas and their management (Orientation: PAT-GOV-2); the definition of coastal integrated management regulation taking future climate risks into account (Orientation: PAT-REG-3), as well as the setup of a collegial monitoring and governance institution and a consultation process for the definition and implementation of transversal and sectorial strategies as well as for the preservation and reinforcement of ecological and cultural heritage (Orientation: PAT-GOV-4).

In **New Caledonia**, IUCN asked the government to undertake a climate change vulnerability study of their World Heritage Site but no other significant larger scale vulnerability study or adaptation strategy has been designed. A climate change adaption scheme, complementary to the energy transition scheme adopted in 2016, is still pending. New information on the status and health of the ocean ecosystem and how it is impacted by climate change will be available through the BEST BIOPELAGOS project. Ecosystem modelling work as well as insights on future modifications of the pelagic ecosystem will also inform and support territorial strategies.

Fakarava, French Polynesia © Carole Martinez

In March 2017, **Wallis and Futuna** adopted a climate change adaptation strategy, including priorities to elaborate and implement a marine resources management plan as well as to create marine protected and managed areas in order to reinforce the preservation of its biodiversity and ecosystems.



Wallis © SPREP

In the **Dutch Caribbean territories**: Despite alarming predictions for the (Dutch) Caribbean by the IPCC[154], a climate change adaptation strategy is still missing and the only adaptation measure found is the creation of marine parks, which is mentioned in the consulted marine park management plans.

A Regional Plan for Climate Change is being elaborated for the Azores based on strategic environmental assessments, and is undergoing a public consultation process before approval, foreseen for the end of 2017. This plan was envisaged in the Regional Strategy for Climate Change as a key tool for planning and intervention. In 2015, **Madeira** adopted its "Strategy for Adaptation to Climate Change", which is the result of the project "Detailed study on vulnerabilities and responses to climate change in the Madeira Archipelago" (CLIMA-Madeira project).

King penguins at American Bay, Crozet, French Southern Lands © Bruno Marie

The **Canary Islands** Regional Government identified the vulnerability of its biota to climate change mainly through collecting local science expertise as part of an INTERREG project between 2012-13 but no adaptation or mitigation plan has yet been developed (Martin Esquivel *et al.* 2013). The newly defined Canary Islands Climate Change Observatory started its operation in April 2017 with the creation of 6 working commissions[155], whose work may lead to a revision of the Canary Island Climate Change Strategy, adopted in 2010. However climate change adaptation plans and strategies for marine ecosystems are yet to be addressed and integrated into MPA design and management.

Despite reference to protected areas and preservation of natural heritage, most of the local climate change adaptation strategies and actions focus on the mitigation of anthropogenic threats to make coastal and marine ecosystem able to better resist, adapt or recover from climate change impacts but there is still a need to integrate nature-based and ecosystem-based solutions to climate change adaptation and mitigation. The concept of Blue Carbon is not enough investigated although representing a very cost-efficient approach and huge potential regarding the importance of the ORs and OCTs marine domains.

Globally mangroves, tidal marshes and seagrass meadows have lost 30-50% from their historical coverage. Annual degradation of 1-2% results in more release of stored carbon and emission of CO_2, according to experts as much as 1.02 billion tons annually, which is approximately 3% of global emissions per year or equivalent to 19% of emissions from tropical deforestation[156].

Blue Carbon

Coastal ecosystems such as mangroves, tidal marshes and seagrass beds, have been recognized for their services that are essential for climate change adaptation, including coastal protection, food security for coastal communities by providing nurseries and fishing grounds, as well as their capacity to sequester and store carbon – known as 'blue carbon' – often more per unit area than terrestrial forests. Despite only covering 2% of the total ocean area – less than other carbon-sequestering ecosystems - coastal habitats constitute significant global net carbon sinks and contribute largely to climate change mitigation.

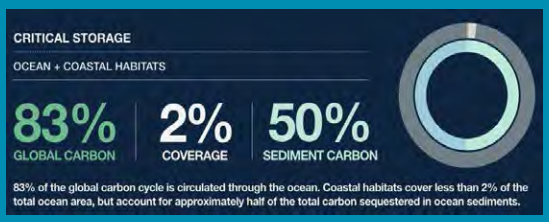


Figure 29: Carbon storage in ocean and coastal habitats (Source: The Blue Carbon Initiative)

Conservation and restoration of marine and coastal ecosystems are thus critical components of climate mitigation and adaptation strategies. MPAs and other area-based conservation measures (OECM) offer great opportunities as 'no-regret' climate change tools and solutions and are key for preserving and maintaining significant global carbon sinks in coastal areas as well as the open ocean (IUCN, 2014) .

154 Fifth Assessment Report: *What's in it for Small Island Developing States?* by the Intergovernmental Panel on Climate Change (IPCC), summarized at the DCNA website: http://www.dcnanature.org/climate-change-impacts-within-the-dutch-caribbean/

155 As reported by the Canary Islands Government.

156 Information taken from The Blue Carbon Initiative and EDGAR – Emissions Database for Global Atmospheric Research.

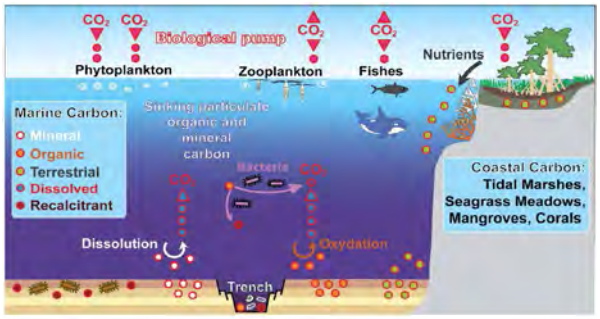


Figure 30: The fixation of organic and mineral carbon by plankton productivity, and the resulting sedimentation of particulate carbon through oceanic waters have a major impact on the atmospheric concentration of CO_2 (Source: IUCN (2014)

Enhancing information exchange at least on the regional scale, as recommended in the Indian Ocean regional adaptation strategy, would be useful for all ORs and OCTs. Adaptation options defined in one territory could be shared and discussed (e.g. MPA design, ecosystem restoration etc.) in capitalisation and cooperation exchanges. Where ORs or OCTs do not benefit from regional initiatives or appropriate expertise, transferring or sharing experiences on climate change adaptation options for their coastal and marine ecosystems could lead to cost-effective actions. Climate policies developed in the **British Virgin and Cayman Islands and French Polynesia** could be capitalised in other EU ORs and OCTs as their level of detail provides a good operational way forward to implement concrete adaptation actions.

Mangareva, Gambier Islands, French Polynesia © Fred Jacq

However, most current MPA designs and marine spatial planning scenarios in the EU Overseas and worldwide do not or insufficiently incorporate climate change resilience as many have been established historically rather than based on assessments. Consequently, deeper, off-shore, more resilient areas are often underrepresented in MPAs. Future MPA designs but also refinements of existing marine parks need to consider the effects of climate change and the ability of ecosystems to resist and recover from climate-related disturbances.

4.2. Resilience to be better integrated in EU Overseas MPAs & MPA networks

Although most currently existing MPAs in EU ORs and OCTs cannot be considered "networks", their implementation has followed various degrees of ecological and socio-economic considerations that can help us to determine the level of marine ecosystem resilience these MPAs contribute against current threats they are facing, including climate change.

Key principles for ensuring that resilience is taken into consideration when developing MPA networks were defined and summarized in guidelines produced by TNC (Salm & West, 2006) and WWF (Hansen, 2003):

- Reducing the risk of damage or extinction by ensuring, wherever possible, that **habitat types are replicated** in the network so that if one MPA is eliminated, others stay intact;
- Building in good **connectivity** between MPAs, so that sites that survive a particular impact can provide a source of replenishment for those that have been damaged;
- Ensuring that **key sites are fully protected**, so they are able to recover quickly from impacts such as coral bleaching. These should include critical areas such as refuges, key breeding and spawning sites such as spawning aggregations;
- Ensuring MPAs are **effectively managed** so that local threats are reduced or eliminated, ecosystems and populations are able to adapt to changing conditions, and recruitment and recovery are encouraged.

Healthy reef in French Polynesia © Thomas Vignaud

Resilience is not enough addressed in current EU Overseas MPAs design and management

The overall resilience of current "networks" of MPAs in European ORs and OCTs is very difficult to determine as data on marine conservation are scattered, not all easily accessible and the situation differs within regions.

If most of EU ORs and OCTs have multiple MPAs, historically they were neither designed as networks nor created according to a pre-defined system of protected areas. Though recent MPA designs, which aim at improving resilience, tend to focus on representative habitats and important areas for life cycles, such as nurseries or spawning aggregations, very few take resilience to climate change through specific actions into account. Thus, in most EU Overseas marine conservation efforts have to be largely improved for addressing replication, representativeness or connectivity purposes[157]. Connectivity constitutes a big area of improvement as very few analyses have been conducted despite the importance of connectivity for supporting the effectiveness of MPAs in EU Overseas. Moreover, the aspect of ecological coherence needs to be better addressed in MPA design and management in order to extend marine conservation efforts to all key sites. While some EU Overseas entities have effective management in place with a management plan, staff and funds that guarantee the implementation of the plan, others have a management plan but no funds for implementation and in some cases there is no management plan or management body.

Turtle conservation, Marine Park Mayotte © Paul Giannasi

Effective management remains an issue in some of the territories, notably in the Macaronesian region. In Madeira, the lack of budget prevents the effective implementation of management actions such as enforcement, monitoring and population outreach (*personal communication, Madeira Natural Park Services*). Despite the declaration of offshore MPAs and the establishment of a legal framework for the establishment of a MPA network in the Azores, there is a need for increased regulation of Azorean MPAs, in particular development and implementation of a management plan, proper enforcement and monitoring as well as integrating this network within a wider regional marine management strategy before establishing new MPAs (Abecasis *et al.* 2015).

In an assessment looking at management effectiveness and needs for capacity building across a selection of MPAs of the Caribbean (Gombos et al., 2011), the analysis of three BVI MPAs showed differences in capacity and data availability across the network but noted that "*while specific actions to address climate change impacts have not been identified, the system plan in BVI was designed to increase resilience of coral reef resources to the effects of climate change*". Management plans for these three MPAs, which are part of the 2008 approved BVI Protected Areas System Plan (2007-2017), are still under development or awaiting approval. Out of these three MPAs surveyed, only the "Wreck of the Rhone" park benefited from adequate funding and data to support MPA design and initial management planning. The process to build coral reef resilience is currently ongoing in BVI and is aiming at reaching a satisfactory level when the network is fully achieved. Despite good policy progress, implementation of strategies and plans are not always quickly done due to political changes or lack of available funding. In the British Virgin Islands, 9 years after approval of the MPA network plan by the Government, the full implementation and designation of new proposed protected areas is not yet fully achieved.

The same study conducted in Saba and Sint Eustatius marine parks showed that despite receiving training in climate change resilience principles and actions, the Saba marine park lacked the staff capacity to implement what they learned. The Sint Eustatius National Marine Park management authority STENAPA currently does not specifically address climate change but "captures" these impacts through the monitoring of coral bleaching[158]. Sint Eustatius marine park staff observed that the current limitation in scientific knowledge and staff time was the largest barrier for more activities that address climate change.

157 An assessment of all EU Overseas MPAs and MPA networks against resilience criteria is given in Annex 9.

158 Monitoring activities of the National Marine Park include reef checks coral watch to monitor bleaching

The Action Plan 2011-2015 of the French Coral reef initiative (IFRECOR) includes two cross-cutting programs on climate change and climate adaptation. Training workshops were conducted in several regions and case studies completed.

Most current MPA designs and marine spatial planning scenarios in the EU Overseas and worldwide **still do not or only insufficiently incorporate climate change resilience and ecosystem-based solutions.** Future MPA designs but also refinements of existing marine parks should integrate deeper, off-shore and more resilient areas, which are often underrepresented in MPAs, and need to consider the effects of climate change and the ability of ecosystems to resist and recover from climate-related disturbances. With EU Overseas networks and systems of MPAs still to be strengthened, discussions arise on the type and size of MPAs to be created. Resolution 50 from the 2016 IUCN World Conservation Congress in Hawai'i reminds that *"scientific evidence supports full protection of at least 30% of the ocean as reviewed to reverse existing adverse impacts, increase resilience to climate change, and sustain long-term ocean health"*[159] A wealth of resources is available to managers from the Reef Resilience network.

Red-fern coral, South Brother, BIOT © Anne Sheppard

One size doesn't fit all

Large MPAs must be well managed and enforced to significantly contribute to resilience of ecosystems. Due to their size they usually protect diverse habitats that allow species interaction, migration, and provide sufficient connectivity between important areas so that these MPAs can be self-sustaining. While large MPAs require attention in terms of enforcement to avoid being "paper parks", they allow an ecosystem-based management approach of highly dynamic and complex marine systems (Wilhelm et al. 2014). Modelling studies suggest that large marine reserves of least ten, perhaps hundreds of kilometres are more successful in achieving desired population numbers to replenish fish stocks in the reserve and have a "spill-over" effect to adjacent marine areas (Baskett *et al.*, 2007; Kellner *et al.*, 2007). Moreover, a recent assessment of the effectiveness of large MPAs covering habitats beyond coastal ecosystems showed benefits of large MPAs to near coastal reefs and highly mobile shark populations, which in turn provide multiple benefits to the marine ecosystem functioning (White *et al.* 2017).

Large fish schools in the Chagos Marine Reserve, Indian Ocean © Jon Slayer

In addition, resilience is linked to connectivity, thus regional and sub-regional cooperation is key for supporting individual MPA - even large MPAs - that should work into a connected network.

In 2001 the National Research Council concluded that a "*growing body of literature documents the effectiveness of marine reserves for conserving habitats, fostering the recovery of exploited species, and maintaining marine communities.*" An analysis of 124 well-managed marine reserves indicated, on average, an increase of biomass, population number, species diversity and size of individuals within the boundaries of the reserves (Lester et al. 2009). The full protection in marine reserves may also result in an export of larvae and biomass - the so-called "spill-over" effect - in areas adjacent to their boundaries (Halpern et al., 2010). The **benefits of no-take zones (NTZs) and marine reserves** to species abundance and diversity in adjacent waters has been widely discussed (NOAA MPA Science Briefs 2012), in particular with regards to fisheries benefits (Kerwath et al., 2013). However, there is still very little data available on social and economic costs as well as benefits of areas surrounding marine reserves.

159 WCC 2016 Resolution 050: *Increasing marine protected area coverage for effective marine biodiversity conservation*

Ocean dynamics and connectivity in MPA design under a changing climate

Taking into account dispersal of larvae by ocean currents is critical for systematic and predictive design of MPAs and MPA networks as protecting larvae-supplying habitats ("sources") can benefit surrounding unprotected areas poor in larvae ("sinks") through a larvae surplus.. Yet, very few MPA and MPA network designs actually integrate quantitative methods to larvae dispersal, biological processes and spatial-temporal dynamics that could affect ecological connectivity. Most MPAs today protect present sources without taking into account that ocean currents, species distribution patterns and therefore connectivity will be altered under a changing climate. A better understanding of regional and sub-regional connectivity like the analysis for the Indian Ocean (Crochelet *et al.*, 2016) and modelling scenarios on larval transport in the Mediterranean Sea (Andrello *et al.*, 2015) and on kelp and sea urchins off the eastern coast of Australia (Coleman *et al.* 2017) demonstrated that altered ocean currents due to climate change will influence connectivity and effectiveness of MPA networks and should be taken into account in future marine conservation planning. A recently published flexible MPA design approach based on alternative dispersal patterns, combinations of population threats, management objectives and different optimization strategies showed high effectiveness in selecting locations that are self-replenishing, interconnected and important larval sources (Krueck et al. 2017) and should be encouraged in future MPA (re-)design.

While proven to be most beneficial for species recovery, the occurrence of fully protected MPAs is still rare in 2017. However, partially protected areas or marine areas applying different levels of protection can provide valuable area-based management tools; particularly in areas where excluding all activities is not a socio-economically or politically viable option (Sciberras et al., 2015).

The success of small MPAs depends very much on the circumstances and pressures outside and inside the reserves: MPAs not big enough to sustain their habitats and species stocks, as currently the case for small marine reserves of a few kilometres, may still do well if fishing pressure is low in adjacent, non-protected areas or if the reserve benefits from fish larvae populations from other protected areas nearby. However, marine reserves that are designed too small, without adjacent fishing strategies in mind or isolated from other protected areas provide little resilience to the ecosystem they are supposed to protect (Gaines *et al.,* 2010).

Even when well-managed, single MPAs of a few square kilometres can hardly provide enough protection of important habitats, if they are not connected to others and are not benefiting of habitat replication.

Reclining coral reefs, Bonaire © Erik Meesters

According to current scientific knowledge, the best alternative to a single large MPA is thus a network of smaller MPAs sufficiently close to supply and receive sufficient larvae from other reserves (Gaines et al., 2010). Ensuring multiple reserves in each habitat type (i.e. habitat replication) promotes persistence not only through demographic coupling of reserves but also by providing insurance against catastrophes. When disasters strike the coast (ship-grounding, cyclone), reserves smaller than the scale of the disturbance are at risk (Allison et al., 2003). Because disasters, human-caused and natural, are common in most marine environments, replication of reserves and incorporation of additional buffer area in the reserve design as an "insurance factor" are critical to increase performance and resilience of a marine reserve network over the long term (Allison et al., 2003 and Game et al., 2008). Provided they are well-managed, multiple reserves can provide better resilience to the ecosystems they protect than single reserves as they may offer more habitat replication and a better potential for connectivity, even if this last criteria was not necessarily achieved through careful planning and design.

Some EU Overseas are currently reviewing their effectiveness with the aim of filling gaps in order to establish a network of MPAs and improve global resilience. Projects focusing on representativeness and replication of habitat and important areas are currently underway in the Anguilla, Cayman and Turk and Caicos Islands. Although New Caledonia's MPAs were not established as a network, projects were initiated to fill gaps on representativeness and replication of habitat, especially mangrove habitats and spawning aggre-

gations. In addition, research is undertaken to assess connectivity between the various reserves. To date, New Caledonia is the most advanced of the European ORs and OCTs when looking at the improvement of its MPA resilience as the only territory working on all resilience criteria including management effectiveness, whereas connectivity is currently left out elsewhere.

British Virgin Islands © Stewart McPherson

Conservation benefits of MPAs were shown to exponentially increase when MPAs are well established (>10 years), large (>100 km^2), when fishing is banned (no-take), the protection is well enforced, and isolated from similar habitat (Edgar et al. 2014). However, considering these factors, just 10% of MPAs worldwide are effective, which demonstrates that quantitative conservation targets based on area alone will not result in better protection of marine biodiversity. A recent study found that adequate staff and budget capacity had ecological effects almost 3 times greater than MPAs with insufficient capacity (Gill *et al.*, 2017). This study concluded that increasing investment in MPAs capacity is necessary rather than expanding MPAs for effective MPA management and enforcement, which will deliver the desired outcomes (better ecological performance and resilience of marine ecosystems) and not only meet current and future conservation goals quantitatively (Gill *et al.*, 2017).

Marine ecosystem solution to be better fostered in European policies and funds

Despite available European funds for mitigation and adaptation to climate change very few projects invested in the key importance of costal and marine ecosystems in the EU Overseas for supporting resilience, and even less at the regional level. Interesting existing initiatives are the Pacific RESCCUE project, funded by French Development Agency (AfD) and the French Global Environment Facility (FFEM), and the Climate Resilient Eastern Caribbean Marine Managed Areas Network (ECMMAN), funded by the German government.

The Pacific RESCCUE project, aiming to increase the resilience and supporting adaptation to climate change (ACC) through integrated coastal management (ICM), operates at the regional and local level with one to two pilot sites in four countries and territories: (1) New Caledonia, (2) Vanuatu, (3) Fiji and (4) French Polynesia.

Huahine, Society Islands, French Polynesia © Carole Martinez

The Climate Resilient Eastern Caribbean Marine Managed Areas Network (ECMMAN) aims at strengthening the existing Marine Managed Areas (MMAs) in six Eastern Caribbean countries, St Kitts and Nevis, Antigua and Barbuda, Dominica, Saint Lucia, St. Vincent and the Grenadines and Grenada but unfortunately not the European Overseas entities in this area.

Snapper school, Bonaire © Carl Calonen, Marine Photobank

The REDPARQUES Declaration[160] on protected areas, signed by 18 Latin American countries, including French Guiana, and announced at the 2015 UNFCCC COP 21, underlines the important role of protected areas as well as regional and sub-regional interactions in climate change strategies. While more regional initiatives and cooperation on climate change issues are needed, this declaration was seen as one of the most positive policy initiatives on protected areas and climate change.

160 REDPARQUES (Latin American Technical Cooperation on National Parks and Other Protected Areas, Wild Fauna and Flora) Declaration, signed by 18 Latin American countries: Bolivia, Brazil, Chile, Costa Rica, Colombia, Cuba, Ecuador, France (French Guiana), Guatemala, Guyana, Honduras, México, Nicaragua, Peru, Panama, Suriname, Uruguay and Venezuela.

5. MARINE INVASIVE SPECIES

The spread of marine species beyond their native environment is of rising concern due to rapid increase of commercial shipping and recreational boats, which can serve as a carrier or 'hitchhike' for organisms. Marine invasive species are currently recognized as one of the major direct causes of biodiversity loss and changes in ecosystems providing and supporting services. There are over 20 international agreements related to the prevention and management of invasive alien species. However, in spite of this it is clear that progress in addressing invasive alien species in marine and aquatic environments is uneven and overall significantly lagging behind terrestrial systems (IUCN, 2009). Whereas IUCN has contributed to fill information gaps and raise awareness on marine invasive species in various regions of the world, it is really the invasion of the lionfish throughout the Caribbean waters that made people realize the potentially devastating effects of species invasion on marine ecosystems.

Lionfish are voracious predators from the Indo-Pacific region but they have become an ecological problem in the Caribbean where they have no natural predators. They have bred here at an astonishing rate and pose a threat to local ecosystems © Stuart Wynne

5.1 The threat of invasive lionfish in the Caribbean waters

While the issue of invasive species remains a low priority in many regions of the world, it has become the highest threat and focus of most of the current conservation efforts throughout the Caribbean. Here, the invasion of lionfish – naturally occurring in the Indo-Pacific region - is seriously threatening the coral reefs and marine biodiversity of many of the Caribbean Nations. Some people believed that lionfish escaped when ships' ballast tanks were emptied during the 1980s. Other theories suggest that lionfish escaped off the coastline of Florida from Miami aquariums, which were damaged by hurricane Andrew in 1992 or that local aquariums or hobby fish keepers released them. The surviving lionfish have adapted progressively and colonised the region over the past 25 years.

With few known natural predators, lionfish pose a major threat to coral reef organisms in the Caribbean and can significantly reduce populations of a wide range of native reef fish e.g. cardinal, parrotfish and damselfish, and compete with other predators in reefs, such as groupers (Green *et al.* 2012). Native groupers prey on juvenile lionfish, but they have been overfished and are unlikely to significantly reduce the effects of invasive lionfish on coral reef communities.

While lionfish eradication is not realistic, affected countries are being encouraged to start lionfish population control measures as soon as possible, including targeted fishing efforts. While their spines deliver venom there is no harm in eating lionfish flesh after the spines are removed and lionfish is now considered a sustainable choice for eating fish in the Caribbean. Recovering healthy populations of native predators that eat lionfish, such as sharks and large groupers, may also help reduce the ecological impacts of these voracious invasive predators. Regional, sub-regional and local initiatives have been implemented (**Table 15**) to counter the devastating effect of the lionfish on Caribbean reef ecosystems. Caribbean-wide initiatives have been implemented through SPAW-RAC and the International Coral Reef Initiative (ICRI) while sub-regional initiatives involving European ORs and OCTs were implemented by agencies of the Member States these ORs and OCTs are affiliated to. In the UK territories, the Joint Nature Conservation Committee (JNCC) has been coordinating several small lionfish projects. A research program and networking was initiated in Martinique through the French National Biodiversity Strategy in 2012 but there is no dedicated program on lionfish in the French Lesser Antilles. The Dutch Caribbean Nature Alliance (DCNA) launched an online and

mobile-device friendly application (www.lionfishcontrol.org) to record lionfish observations and kills in Bonaire, Curaçao, St Maarten and Aruba to monitor lionfish spread and to inform controlled measures. In the Dutch Caribbean the focus is currently shifting to test control methods using specially designed traps that would not only enable targeting of deep water lionfish out of reach of divers, but would also enable fishermen to access this new resource, greatly adding to the control efforts. At the local level, almost every European ORs and OCTs in the Caribbean are implementing local action plans or activities as detailed in **Table 16**.

Table 15: Regional responses to the lionfish invasion in the Caribbean

Project	Lead Organisation	Activities
Caribbean Lionfish Project	**JNCC** Joint Nature Conservation Committee	• **Caribbean Hub cross-territories lionfish monitoring, eradication and awareness-raising** JNCC is working with the Cayman Islands to develop the concept and mechanisms for a regional Caribbean Overseas Territories hub. The regional lionfish project will be a first step to demonstrate how a regional approach to conservation management works in practice, sharing skills, knowledge and expertise across-territories. • **Lionfish project in the Cayman Islands:** Monitoring of reef fish biomass to find out how healthy the populations are and estimate the balance of invasive and natural species. Assessment of how effective the control efforts are, development and use of a rapid response protocol for reports on lionfish sightings, raise public awareness and train volunteers. • **Lionfish project in the Turks and Caicos Islands** Focus on public awareness and developing relationships to control the lionfish. Collaboration with restaurants to put lionfish on the menu, creating an economic demand for capturing the invasive species, collect data on species locations and population sizes, and host a public 'lionfish tournament' to catch them and inform the public. • **Lionfish project in the British Virgin Islands** Training staff in various organisations in the biology, behavior, capture and control of lionfish, and initiatives on public awareness and information.
Lionfish activities	**SPAW-RAC**	• Publication of a declaration on the lionfish invasion • Development and moderation of a lionfish mailing list (200 members) • Involvement in the development of a best practices manual with NOAA • 3 training workshops organized with REEF • Regional strategy writing workshop organized
Regional Lionfish Committee	**ICRI** International Coral Reef Initiative	• Development of an Invasive Lionfish Control Manual • Organisation of regional training workshops • Creation of a lionfish web portal • Development of a regional response plan http://www.icriforum.org/sites/default/files/ICRIGM27-AHC-lionfish-presentation.pdf
PoLiPA Poisson-Lion dans les Petites Antilles: **gestion, lutte, recherche et coordination**	**OMMM** Observatory for the Martinique Marine Environment	• Identification and improvement of current practices for lionfish control • Setting-up response teams • Improvement of communication, collaboration and evaluation of ecological impacts of the invasion as well as of control measures • Definition of control strategies, action plans and future actions of the lionfish invasion control • Assessment of socio-economic impacts of the invasion http://www.developpement-durable.gouv.fr/IMG/C5.pdf
Lionfish Control Map Online application	**DCNA** Dutch Caribbean Nature Alliance	• Development of lionfish response plan • Mapping of lionfish observations and kills in Dutch Caribbean by the public using online application • Lionfish population studies in Bonaire and Curaçao by STINAPA Bonaire and CARMABI • Citizen-science supported research on lionfish distribution and effectiveness of removal efforts • Informing control and removal programmes www.lionfishcontrol.org

Table 16: National responses to the lionfish invasion in the Caribbean

OR/OCT	National Initiatives
Guadeloupe	Culling and awareness raising campaigns coordinated by the environment department (DEAL) Lionfish sampling analysis to assess levels of ciguatera before starting a tasting campaign. Development of a control strategy by professional fishermen (Guadeloupe Regional Fishing Committee)
Martinique	Culling campaigns, awareness raising coordinated by environment department (DEAL); POLIPA project to elaborate control and management plan with cost-benefit analysis
Saint Martin	Culling campaigns, awareness raising coordinated by the Nature Reserve
Saint Barthélemy	Culling campaigns, awareness raising coordinated by the Nature Reserve; Ongoing BEST project to assess lionfish toxicity, revise regulations and inform a long-term lionfish control strategy
Saba	Lionfish response plan was developed by Saba Marine park. With help of fishermen, testing specifically designed lionfish traps that avoid by-catch of other fish
Bonaire	Bonaire Lionfish Action Plan implemented by Bonaire Marine Park Bonaire Marine Park launched lionfish control map (http://www.lionfishcontrol.org), application now extended to Curaçao, Aruba, St Maarten
Sint Maarten	Sint Maarten Nature Foundation Lionfish Response Plan and Lionfish Control map application
Curaçao	Mapping via Lionfish Control application
Sint Eustatius	Sint Eustatius Lionfish Response Plan
Aruba	National Lionfish Control Programme implemented through the Aruba Marine Park Foundation, the Prosecutor's office and the Coast Guards, mapping via Lionfish Control application
Anguilla	Lionfish response plan
Bermuda	"Taming the Lionfish" project (culling and awareness campaigns); Ongoing BEST project to manage lionfish hotspots testing a robot for removal, determine removal effectiveness and increase demand as food
British Virgin Islands	Reef guardian project
Cayman Islands	Lionfish Control programme as part of the National Biodiversity Action Plan including culling activities through specific licensing and tournaments as well as public awareness campaigns; Ongoing BEST project to improve national lionfish management strategy and improve effectiveness and sustainability of removal efforts
Turk and Caicos	Lionfish tasting campaigns and fishing tournaments A Turks and Caicos Islands lionfish recipe book was published in 2011

5.2 Other marine invasive species in the EU Overseas

Whereas the lionfish remains the main concern for the Caribbean, the government of the Netherlands commissioned an assessment of all marine invasive species in the Dutch Caribbean. The assessment revealed the presence of 27 marine invasive species (Debrot *et al.*, 2011) and has also established a "watch list" of invasive species recorded in the vicinity of the islands that would likely reach some of the Dutch Caribbean in the near future. A major concern is the invasive seagrass *Halophila stipulacea*. Originally from the Red Sea and Western Indian Ocean, it was first reported from Grenada in 2002 and has since spread along the entire Eastern Caribbean island chain all the way to the Virgin Islands in the North, as well as to Bonaire, Curacao and Aruba in the South (Rogers et al. 2014). The ecological effects on native seagrasses are not yet understood, nor how it impacts seagrass grazers such as green turtles but it appears to be linked to higher nutrient levels and take advantage of a degrading environment (van Tussembroek et al. 2016).

The IUCN French Committee has a dedicated program on invasive alien species (IAS) since 2005 with a database of over 650 species and recently launched an initiative specifically on marine IAS in the French Overseas following the 2017 release of the national strategy for invasive alien species by the French Government.

In the other ORs and OCTs, despite being recognized as a serious issue, there is still little knowledge about marine invasives. In 2007, IUCN Oceania in collaboration with the Pacific Invasive Learning Network (PILN) organized a workshop on the management of marine invasive species in MPAs, which outlined the lack of

data and baseline information in the region as well as the current non-incorporation of this issue in MPA management plans (IUCN, 2007). Guidelines for management of marine invasive species in MPAs were to be published after this workshop but could not be found. As a proof that the issue remains unaddressed in the region, at the PILN network in March 2012, the PILN Network coordinator declared that "aquatic invasive species are important to Pacific countries because the ocean is our lifeline. Our coral reefs provide food for our families and any threat posed by aquatic invasive species should be taken seriously". Participants coming from the entire regions including French Pacific OCTs agreed but acknowledged the fact that there was still a lot to learn about marine invasives and that initial surveys should be taken to determine the extent of the problem in the region (SPREP, 2012).

Figure 31: Lionfish control posters on St Maarten. Source: DCNA.

Invasive alien species control mission in the Pacific ©Jean Kapé

In the **Indian Ocean**, IUCN has conducted marine surveys in Diego Garcia, Chagos in 2007 where no marine species incursions have been recorded (IUCN, 2009) but no actual regional or even national strategies are yet looking into marine invasives (*O.Tyack, personal comm*unication).

The **South Atlantic region** worked on an invasive species strategy and action plan in 2009. Subsequently St Helena developed and adopted a marine biosecurity protocol (2015)[161] to prevent arrival of new marine IAS and the Falkland Islands are working on a marine biosecurity measures to be included in MSP efforts.

The Canary Islands' Government recently launched MIMAR[162], a new INTERREG cooperation project that will analyse the arrival of exotic species from from dinoflagellates to cyanobacterias (blue-green algae) and fishes in the context of tropicalization in order to monitor, control and mitigate the proliferation of recently arrived marine organisms associated with human disturbances and climate change in the **Macaronesian region**. The project aims to develop protocols, systems and mechanisms for the prevention and control of marine invasive species.

161 The Biosecurity protocol for the marine environment is part of St Helena's biosecurity policy plan and was approved in 2014.

162 MIMAR : Monitoring, control and mitigation of proliferations of marine organisms associated with human disturbances and climate change in the Macaronesian Region (*Spanish title : Seguimiento, control y mitigación de proliferaciones de organismos marinos asociadas a perturbaciones humanas y cambio climático en la Región Macaronésica)*

6. EU OVERSEAS PROGRESS TOWARDS ACHIEVING INTERNATIONAL MARINE CONSERVATION OBJECTIVES

During the 10th Conference of the Parties of the Convention on Biological Diversity (CBD COP 10), held in Nagoya, Japan, in 2010 the Strategic Plan for Biodiversity 2011-2020 was adopted. This plan sets 5 strategic goals with 20 targets - commonly known as the *Aichi Targets* - to halt biodiversity loss and improve biodiversity conservation status by 2020. In addition to these targets, the Convention on Biological Diversity operates through specific Programmes of Work.

A 2011 report by IUCN's EU Overseas programme assessed the implementation of the CBD commitments and compliance in the EU Overseas entities and provided principles to guide future actions as well as recommendations to EU Institutions, EU Member States, actors in the ORs and OCTs, regional institutions, to the CBD, GLISPA and IUCN. The results indicated that "*The priority now lies in enhancing the effectiveness of management in existing protected areas, in filling the gaps in coverage by ensuring that all ecosystems are properly represented in the protected area systems of the various entities, and in building stronger networks among protected area management agencies in overseas entities and in the geographic regions of which they are part. These achievements and future protected area development, both terrestrial and marine, will have to be placed in the context of the CBD Aichi biodiversity target 11 for protected areas by 2020*" (IUCN, 2011).

In order to assess the progress of European ORs and OCTs in relation to those international objectives we have selected three of the Aichi Targets that were relevant to the establishment of marine protected areas and the conservation of coastal and marine resources, namely Target 10, 11 and 15. We have also reviewed progress of European ORs and OCTs towards the five objectives of the Marine and Coastal Protected Area element of the Programme of Work on Marine and Coastal Biodiversity.

Fur seal on Amsterdam, French Southern Lands © Bruno Marie

6.1. Aichi targets

Table 17: EU Overseas activities against Aichi Biodiversity Targets relevant to marine conservation.

Aichi targets	European ORs and OCTs implementing activities towards the targets
Target 10: by 2015, the multiple anthropogenic pressures on coral reefs and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized	**In progress** • Several OCTs/ORs developed climate change policies and planning tools; • IFRECOR support in French OR s and OCTs; • Coral restoration projects
Target 11: 10% of coastal and marine areas are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures	**In progress** • Rapid increase of MPAs from <6% (2010) to 33% (2017) in the EU Overseas. **Weaknesses:** • Lack of offshore, pelagic and benthic protection[12], ecological coherence and global EEZ coverage • Unequal efforts: only 10 EU Overseas entities protect >10% of their waters • Ecological representativeness and connectivity to be improved • Combination of MPAS and other effective conservation measures (OECMs) to be developed for supporting management effectiveness
Target 15: by 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15% of degraded ecosystems.	**Little progress** • Few marine/coastal restoration activities: Pacific BIOPELAGOS Project, Moorea vulnerability assessment (French Polynesia), ONERC climate change scenarios (French Overseas). **Weakness:** • Resilience and ecosystem-based solutions not yet systematically integrated in territorial strategies and MPA design

Regarding the implementation of the Aichi Targets, individual voluntary reports were submitted to the CBD by BVI, Cayman Islands, St Helena, Ascension Island and Tristan da Cunha, included in the UK's Fifth National Report to the CBD[163] as well as Greenland[164].

According to the national reports to the CBD most of the European ORs and OCTs are currently implementing or at least planning to implement activities to minimize their impacts on marine and coastal ecosystems as recommended under **Target 10**. These activities include upgrading sewage treatment systems, preventing coastal erosion through legislation against land-clearing, regulating the fishing activity etc.

Regarding **Target 11** to *conserve 10% or more of marine areas*, it is mainly the creation of large MPAs in a few European Overseas entities[165] in recent years that allowed reaching multiple conservation objectives and increased the total cover of European Overseas MPAs from less than 5% in 2010 to 33% in 2017.

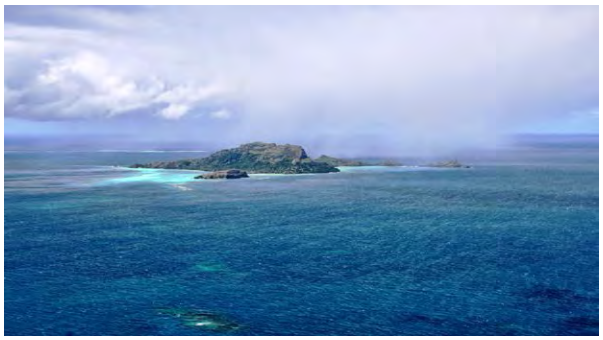
Fakarava, French Polynesia © Carole Martinez

163 Reported in Appendix 4 of the UK's Fifth National Report to the CBD (April 2014)

164 The Fifth National Report Greenland, submitted as standalone document to the CBD, reports on status and trends as well as ongoing initiatives but not detailed on contribution to the Aichi Target achievement.

165 Large EU Overseas MPAs designated after 2010 protecting >10% of their EEZ: SGSSI (2012, 87% of EEZ), New Caledonia's Marine Park of the Coral Sea (2014, 95%), Pitcairn (2016, 100%), St Helena (2016, 100%), Martinique (2017, 100%), TAAF (2017, 100%))

The UK Government committed to the creation of new large MPAs in the South Atlantic (Ascension Island in 2019, Tristan da Cunha by 2020), which would bring up the protection level in the European Overseas waters to 38% (> 8 million km^2) or even over 60% (>13 million km^2), when taking French Polynesia's efforts into consideration of designating its entire EEZ as a Marine Managed Area (MMA). However, although few EU Overseas are from a pure statistical point of view championing the Aichi Target 11 by making up over 95% of the protected EU Overseas waters, the efforts remain unequal. Only 10 EU Overseas are protecting more than 10% of their waters. In addition, if several tools and status of MPAs exist, their combination and complementarity with OECMs into pre-defined systems of MPA should be a priority in order to better support an integrated approach and synergies between tools and strategies.



Mangareva, Gambier Islands of French Polynesia © Fred Jacq

Some important areas of marine productivity such as pelagic ecosystems can indeed be spatially or temporally decoupled from regions of high biodiversity. MPA networks including both, areas of high productivity and areas of high biodiversity are important for the overall maintenance of ecosystem function and services (Leslie & McLeod, 2007).

As the greatest threat in the open ocean is the overexploitation of top predators, keystone species, and other structure-forming species, strategies focusing only on biodiversity would induce critical gaps and failure to protect some of the most important areas of the ocean (Briscoe et al., 2016). The incorporation of dynamic and highly productive features, distributions, and processes in addition to biodiversity in conservation and sustainable management strategies, represents a great opportunity to progress towards more appropriate conservation approach and actions regarding the processes, scales, and spatio-temporal dynamics of marine systems.

Significant progress has been achieved in uninhabited EU overseas territories such as the British Indian Ocean Territory (BIOT) and British Antarctic Territory (BAT) as well as the Caribbean island Saba but there is an urgent need to strengthen protection off the coasts and a vast majority of the EU ORs and OCTs are far from reaching the 10% CBD Aichi target.

British Antarctic Territory © Redfern Natural History, photo by Simon Vacher

With respect to *connectivity and representativeness* of the current protected areas, in-depth reviews have been conducted or are on-going in the Caribbean UKOT. The British Virgin Islands have significantly progressed towards creating a coherent, representative network of MPAs in consultation with the local population although additional data on connectivity would be needed. A proposal for an enhanced system of Marine Parks for protection of up to 40-50% of the Cayman Islands waters, elaborated in consultation with the public, is presently awaiting final decision. The foreseen increase of (existing) marine parks and more strategic zoning (including no-take marine reserves) will allow more effective ecosystem-based protection[166]. Similarly, the **Turks and Caicos Islands (TCI)**, already home to over 70% of the UKOT MPAs, are currently expanding the boundaries of the 20 existing MPAs to create a more ecological coherent network. Some French ORs (Reunion, Guadeloupe, St Martin and St Barthélemy) as well as New Caledonia recognized the need to conduct these network coherence reviews when developing climate change adaptation schemes but nothing has gone further than the planning stage yet.

In addition, Aichi Target 11 also requires that MPAs are *effectively and equitably managed*. This objective is often in contradiction with achieving ecological coherence as managers, who have spent lots of time and effort to gain support and participation from the population and stakeholders on zoning and management issues, are reluctant to start another review process.

166 Enhanced Marine Parks Proposal 2015 Consultation Report, prepared by the Department of Environment of the Cayman Islands

Ouvea, New Caledonia © Maël Imirizaldu

For example, Madeira focussed on public outreach and participation instead of assessing the coherence of their existing MPAs (*personal communication, Madeira Natural Park Services*). The Department of Environment in Martinique argues that the trade-off on zoning and management after consultation with stakeholders would not completely result in an ecologically representative and well-connected MPA network (*personal communication, DEAL Martinique*). Similarly the marine reserve of Reunion Island faces significant problems to be accepted among local stakeholders and primarily focuses on getting public support.

Despite current progress, it will be hard to fully achieve all objectives of Target 11 by 2020 as some assessment criteria, such as equitable or even effective management, depend on the social and cultural context.

The objective of *increasing ecosystem resilience* in **Aichi Target 15** could be achieved through Aichi Targets 10 and 11 - working towards anthropogenic pressure minimization and ecologically coherent and effectively managed protected networks of protected areas. However, resilience also requires taking into account the ongoing and anticipated future changes, which must allow for dynamic (in space and time) management approaches of the migratory species, mobile marine resources and seasonal phenomema for it to be effective. Complementing existing adaptive management frameworks with dynamic ocean management by integrating real-time measurements, new data, ecosystem modelling will allow timely response to the naturally changing marine environment and more effective management (Maxwell et al. 2015). Undoubtedly, dynamic ocean management is still in its infancy and it is not yet widely applied in the EU Overseas MPAs or MPA network. However, it provides an excellent opportunity to further include participatory approaches in MPA management plans, taking advantage of mobile data collecting and sharing technologies as well as the local population's connection to and dependence on the marine environment.

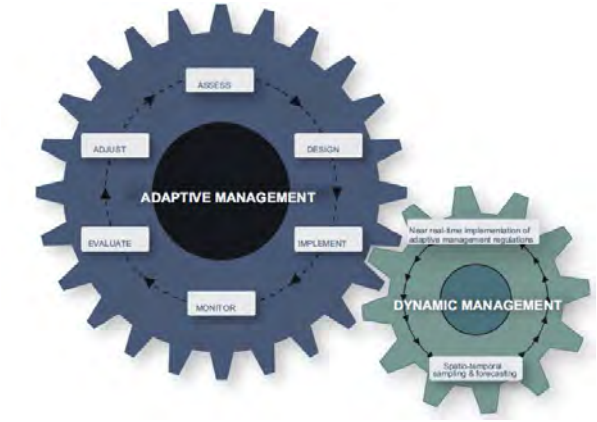


Figure 32: Integration of dynamic ocean management with adaptive management (Maxwell et al., 2015).

Progress on *restoration of degraded ecosystems* in the EU Overseas is extremely slow. Restoration activities, including research, are mentioned in the climate change adaptation strategies developed by the British Virgin Islands, Cayman Islands as well as Guadeloupe. However, there is no quantitative objective linked to it. The current legislation in New Caledonia obliges the mining companies to restore all the reefs degraded as a direct impact of their activities (e.g. Goro site). In addition, restoration activities also take place inland to revegetate old mining sites in order to limit erosion and the consequent pollution of coastal waters.

Several projects under the European BEST Initiative[167] now target restoration of degraded ecosystems as one of the commonly identified priorities for action in the EU Overseas regional ecosystem profiles,

167 European BEST Initiative: http://ec.europa.eu/best/

elaborated as part of the Initiative. Activities related to marine and coastal ecosystem restoration include preservation of coastal areas, such as wetlands and mangrove forests[168] , seagrass area[169] and coral reef restoration[170].

Mangrove regeneration, BVI © Stewart McPherson

In conclusion, despite current efforts across EU ORs and OCTs and significant progress but unequal on the quantitative dimension Aichi Targets, regarding their qualitative dimension there is still an urgent need to:

- Strengthen offshore measures conservation for pelagic and benthic ecosystems as a vast majority of the EU ORs and OCTs are far from reaching the 10% Target;
- Increase connectivity and coherence of existing MPAs;
- Improve MPA management through incorporation of dynamic management strategies that take into account aspects of marine productivity, not only biodiversity as these can be spatially and/or temporally decoupled in pelagic systems (Briscoe et al., 2016);
- Integrate marine conservation and complementary coastal and marine restoration activities in climate change adaptation strategies as well as legislation to reduce ongoing and minimize future ecosystem degradation.

6.2. Programme of Work on Marine and Coastal Biodiversity

This study identified activities that could contribute to the CBD's Programme of Work on Marine and Coastal Biodiversity objectives within the programme element marine and coastal protected areas (MCPAs). These objectives have been implemented in a very limited number of regions and territories. Currently only the British Virgin Islands recorded a representative national MPA network[171], but work is ongoing for the Cayman Islands and Turk and Caicos as well as in the Canary Islands.

Progress on the regional scale has to be strengthened for improving the regional MPA networks that should be representative, connected and resilient and include MPAs in areas beyond national jurisdiction (objective 3.2). In the Macaronesian region, MPAs have been set up as part of the Natura 2000 network of protected areas (EU Habitats Directive 92/43/ECC) and several EU-funded projects (PARQMAR, MARMAC I & II, BIONATURA, etc.) implemented to define conservation criteria and management tools for endangered species and key habitats.

The only three regional initiatives to establish an MPA in areas beyond national jurisdiction (ABNJ) are the South Orkney Islands Southern Shelf MPA, created in 2009 within the CCAMLR framework (see section 1.6); the Hamilton Declaration for the Sargasso Sea (see chapter 1.4.1.), signed by four EU Overseas entities (Azores, Bermuda, British Virgin Islands, Cayman Islands); and the Ross Sea, declared in 2016 by the CCAMLR. The government of Bermuda leads a partnership, the Sargasso Sea Alliance, which operates as a stand-alone legal entity to support this initiative.

MPA monitoring activities are implemented locally across European ORs and OCTs with variations on the technical level, frequency and the quality of the data generated, although at regional level almost no efforts have been identified.

168 BEST coastal restoration projects: Wallis and Futuna mangrove conservation and management; MANG project, (see chapter 1.1); Restoration of KBAs of St Maarten

169 BEST seagrass bed restoration projects: COPRA on Glorioso Island

170 BEST coral reef restoration projects: RESCQ (St Maarten, St Eustatius, Saba, TCI); Scaling up coral colonization in Curaçao

171 BVI MPA network plan (2007-2017) was approved in 2008 by the Government but only partially implemented with new MPA designations and MPA management plan approval pending due to capacity constraints.

Table 18: EU Overseas activities against operational objectives of the CBD Programme of Work on Marine and Coastal Biodiversity relevant to MPAs.

CBD Programme of Work on Marine and Coastal Biodiversity	Territorial level	Regional level
Objective 3.1: To establish and strengthen national and regional systems of marine and coastal protected areas (MCPAs) integrated into a global network and as a contribution to globally agreed goals.	**In progress** BVI, Canary Islands, Caribbean UKOTs, Bermuda and Falkland Islands (at planning stage)	**In progress** OSPAR network (part of North Atlantic) Natura 2000 network (Macaronesia) CCAMLR network Caribbean Marine Mammals Sanctuary cooperation
Objective 3.2: To enhance the conservation and sustainable use of biological diversity in marine areas beyond the limits of national jurisdiction (ABNJ)	**Little progress** Some progress for Bermuda, Azores, Cayman Islands & BVI (with Sargasso Sea Hamilton agreement), Azores OSPAR MPAs, Canary Islands	**Little progress** CCAMLR, OSPAR and Sargasso Sea
Objective 3.3: To achieve effective management of existing MCPAs[13]	**In progress** Across most EU ORs and OCTs	**In progress** CAMPAM, Natura 2000 network (Macaronesia), TE ME UM, IFRECOR Pacific Roundtable, LMMA network
Objective 3.4: To provide support for and facilitate monitoring of national and regional systems of MCPAs	**In progress**	**Little progress** Cartagena, Nairobi Regional Seas conventions, CCAMLR , CAFF and PAME actions. Dedicated monitoring is missing for all ORs and OCTs and the existing European assessments are not comprehensive and limited to the Macaronesian region.
Objective 3.5: To facilitate research and monitoring activities that reflect identified global knowledge gaps and priority information needs of MCPA management.	**In progress** BEST projects However not enough funding to gather priority information, notably on pelagic ecosystems	**Little progress** OSPAR, CCAMLR, Natura2000 (Macaronesia), South Atlantic[14]. European Research Funds are hardly accessible to all ORs and OCTs

French Polynesia © Lauric Thiault

The support for research activities is not consistent across EU ORs and OCTs and largely depends on local scientific capacity as well as available and accessible funding. A study on the financial support provided by the European Commission to marine research activities in the EU Overseas revealed a significant lack of support (NetBiome-CSA, 2016). As a result, only entities with local research labs can effectively conduct in-depth research to support the management of MPAs but still access to European funds is difficult. At the regional level, the South Atlantic Environment Research Institute is working on several GIS projects mapping protected areas and supporting marine spatial planning in the UKOTs in the South Atlantic. In-depth research on a range of themes including MPA biological effectiveness, coastal habitat mapping and connectivity takes place in the Canary Islands, Reunion Island, Guadeloupe, Martinique, Curaçao, French Polynesia and New Caledonia. Studies in other territories such as Mayotte, Wallis and Futuna studies have been pursued on an *ad hoc* basis with the exception of TAAF, which has dedicated funding to continuously conduct in-depth research. Funding can usually be secured for small-scale research in most of the EU ORs and OCTs. Unfortunately, the improvement of knowledge on pelagic and benthic ecosystems remains largely under-funded.

CONCLUSION & RECOMMENDATIONS

This report provides the first overview of marine conservation efforts in the 34 EU Outermost Regions (ORs) and Overseas Countries and Territories (OCTs), which are located in every large ocean of the Blue Planet and - with a combined EEZ of over 19 million km^2 - represent incomparable links to marine networks at the regional and global scale.

From the poles to the tropics, the EU Overseas are strategic partners for the implementation of the international Aichi Targets and the Agenda 2030. However, their critical role and importance have been overlooked for too long. This report provides a first overview of marine conservation efforts in the 34 EU ORs and OCTs. The report highlights how the EU ORs and OCTs are actually already critical players not only at European but also at the regional and international level, in pioneering marine conservation actions and providing valuable contributions for the implementation of the international targets, the European biodiversity and to national strategies.

Saint Paul, French Southern Lands © TAAF, photo by Nelly Gravier

The report assessed marine conservation activities implemented in the EU ORs and OCTs against the objectives of the three CBD Aichi Targets (10, 11, 15) related to marine biodiversity conservation, the SDG 14 target of 10% of coastal and marine protection by 2020, and the Programme of Work on marine and coastal biodiversity. Many activities have been and are being implemented across EU ORs and OCTs to work towards the establishment of 10% of marine areas under effective and ecological coherent protection. Some went far beyond with bold commitments.

Reef abundance, Ascension Islands© Shallow Marine Surveys Group

As of September 2017, **33% (over 6.5 million km²) of European Overseas waters are protected:** well beyond the international 2020 target of 10% and ahead of the 6.35% globally[172] protected marine areas and the 15.9% for national waters (UNEP-WCMC, Sept.2017). With recent announcements they are also on track to meet the recommendations from the World Park Congress (Sydney, 2014) and the World Conservation Congress (Hawaii, 2016) *"to designate and implement at least 30% of each marine habitat in a network of highly protected MPAs and other effective area-based conservation measures, with the ultimate aim of creating a fully sustainable ocean, at least 30% of which has no extractive activities, subject to the rights of indigenous peoples and local communities"*[173].

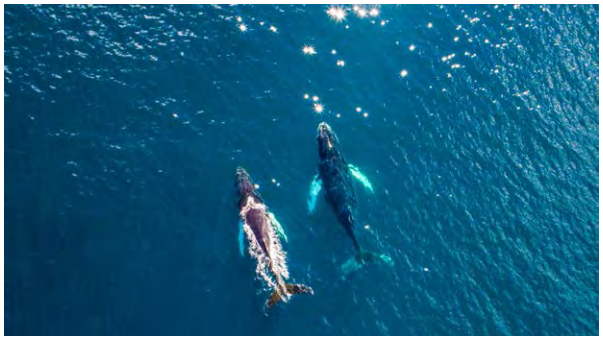
However over 95% of this protected area results from large MPAs in solely 9 EU Overseas entities, that protect an important area of their marine realm: the Pitcairn Islands (100%), the British Indian Ocean Territories (almost 100%), Martinique (100%), Mayotte (99%), New Caledonia (94.3%), South Georgia and South Sandwich Islands (87%), the French Southern Territories (100%), Saba (28%), as well as St Helena, Ascension

172 Not including Ross Sea Region High Seas MPA, which will be enforced in December 2017.

173 WCC-2016-Res-050-EN; Increasing marine protected area coverage for effective marine biodiversity conservation

and Tristan da Cunha (28%) through a number of offshore MPAs. In addition, the declaration of the Agoa marine mammal sanctuary in 2010, covering the EEZs of Martinique, Guadeloupe, Saint Martin and Saint Barthélemy, as a Specially Protected Area under the SPAW Protocol of the Cartagena Convention, brought the MPA coverage up to 100% for these 4 French entities.

The protection efforts range from strictly no-take in the British Indian Ocean Territories and Pitcairn to multi-use protected areas including no-take zones in SSGSI, Saba and TAAF, and the degree of management and enforcement varies within all of the over 350 MPAs.



Whales in the Arctic © Florian Ledoux

The ambition of setting and achieving conservation targets has to take into account the different political status and institutional situations in the EU ORs and OCTs, the reality of the available scientific data as well as the means available for supporting the management and the monitoring of MPAs.

Despite the leadership of some EU Overseas for protecting their waters, there is still effort needed in the following areas:

Availability and use of data:

Basic data on marine habitat coverage is still not available for most of the ORs and OCTs and impedes accurate assessment of the representativeness of existing MPAs but as well very important information for developing marine spatial planning, other conservation measures and sustainable management of natural resources.

The design of a majority of MPAs, based on the best available knowledge, includes a variety of coastal habitats. A number of on-going or planned projects are collecting data on coastal habitats, in French ORs, Turks and Caicos and Bermuda. However, despite support from the BEST Initiative in few OCTs, data for pelagic and benthic ecosystems is still largely missing and offshore MPAs are still underrepresented in most European ORs and OCTs with the exception of the mentioned large-scale MPAs.

Most of the ORs and OCTs are unfairly excluded from the geographical scope of "Europe's regional seas" and thus from the EU knowledge sharing and data collating efforts. Because of their link to the EU, all ORs and OCTs should be better taken into account in the EU marine efforts such as the European Marine Observation and Data Network (EMODnet) or the European Global Ocean Observing System (EuroGOOS), which is limited to 6 Regional Operational Oceanographic Systems (ROOS). ORs and OCTs should be the new frontier of the EU Marine research and Ocean observation.

Action points:

- A **more comprehensive and strategic approach of the great EU marine dimension** should go beyond the regional seas surrounding Europe as defined by the EEA[174], or the 8 Sea Basins identified by the EU Maritime Policy. The EU networks, the EU programme and the EuroGOOS should also investigate in regional seas where the EU is present thanks to the ORs and OCTs.
- **Support of more scientific cruises and accurate data collation**.
- **Developing a typology of marine and costal habitats in all the ORs and OCTs.**
- **Developing marine and coastal ecosystems mapping in conjunction with ecosystem services valuation.**
- **Incorporating the value of ecosystem services into decision-making and particularly planning**. More thorough assessment on coastal development and activities in watersheds that impact key ecosystems are critically needed for better balancing the preservation and restoration of coastal and marine ecosystems with current and future development needs and climate change adaptation and mitigation.
- **Developing vulnerability assessment of the valuable marine and coastal ecosystems.**
- **Strengthening/Creating research networks that enhance ORs and OCTs' role as marine environment observatories** for Europe as it was already suggested in 2008 by the EC Communication[175].

174 State of Europe's Seas, EEA report, n°2/2015,P.13.

175 The Outermost Regions: an asset for Europe, Brussels, 17.10.2008, COM(2008) 642 final

Representativeness:

Existing ORs and OCTs' MPAs are mostly located in coastal waters. Only the 9 EU Overseas protecting more than 10% of their EEZ, established vast offshore MPAs, extending thus the efforts to pelagic and benthic ecosystems.

Strengthening the representativeness of the current network of protected areas should be priority in order to not only significantly support the implementation of the CBD Aichi Targets but moreover to improve marine conservation efforts and support resilience.

ORs and OCTs need to be supported to develop their networks of MPAs beyond territorial waters, in the wider seascape. To that end, the EU Overseas should be supported in marine spatial planning and gap analysis projects in order to inform necessary comprehensive decision-making, which shall ensure implementation of SDG 14 by the EU Overseas as well the effectiveness of marine policies.

Action points:

- **Strengthening and improving the representativeness of the current MPAs** by supporting gap analysis, marine spatial planning and designing MPA network at the local and regional levels to achieve the CBD Aichi Targets, foster marine conservation efforts and resilience.
- **Supporting regional seas cooperation** beyond the exiting European Seas and defining strategies for the 7 regions, in which the ORs and OCTs are located**.**

Connectivity and functionalities:

There are **only three operating ecological networks of MPAs** across EU ORs and OCTs: (1) the British Virgin Island MPA System at national level; (2) OSPAR – the North-eastern Atlantic regional network – including Saint Pierre and Miquelon, Greenland and the Azores; (3) the Europe-wide Natura 2000 network extending to Macaronesia. The Turks and Caicos Islands, the Cayman Islands and Anguilla are progressing towards territorial ecological networks. TAAF has extended its natural reserve with a special act mentioning the functionalities of marine habitats. This extension contributes to the elaboration and implementation of a concerted regional strategy for a CCAMLR MPA network.

Action point:

- **Further work needs to be conducted on the connectivity and functionalities within the EEZ and at the regional scale** such as in the Indian Ocean in order to better assess the effectiveness of existing MPA and their contribution to resilience.

Management effectiveness and enforcement:

Sustainable funding is a common challenge for MPAs in all European ORs and OCTs, which is critical for ensuring management effectiveness and enforcement. Taking into account the numerous and valuable ecosystem services provided by the EU Overseas' coastal and marine ecosystems, their effective management should definitively be a priority target of the European and national support to the ORs and OCTs. EU Overseas marine ecosystem conservation should thus be considered as a strategic area of investment for the post-2020 European Strategy and European funds.

Action points:

- **Allocating suitable human and technical means** for ensuring effective management of MPAs.
- **Strengthening regional cooperation in surveillance and patrolling** efforts through use of remote surveillance tools (such as satellite tracking) at the regional level in order to support proper enforcement of marine conservation efforts and combatting illegal activities in EU Overseas waters.
- **Giving special attention to marine conservation in post-2020 strategies** recognising the strategic importance of the European ORs and OCTs.
- **Supporting the implementation of existing European Blue Economy documents** and ensuring a critical balance between marine conservation and innovation in investments in future documents in order to secure sustainable and equitable development in the ORs and OCTs beyond marine resource exploitation.

Regional cooperation:

The regional cooperation exists at different levels of advancement in all ocean, in which the ORs and OCTs are located.

Regional efforts have to be further supported as they are critical for the effectiveness of marine conservation, migratory species, as well as for the resilience of marine ecosystems under threat and. Several projects

are on-going such as the creation of marine mammal and shark sanctuaries in the Caribbean waters and the development of regional cooperation for marine mammals. The Caribbean benefit from several factors for a regional MPA network: an active MPA manager learning network (CaMPAM) including all countries and territories of the region, strong involvement in regional marine conservation activities of the Regional Seas Convention Secretariat and the SPAW Regional Activity Center, and increasing cooperation on marine ecosystems among islands.

Drawing lessons from the attempt to create such an MPA manager network in the Indian Ocean through the RAMP-COI project would help to further support regional cooperation particularly in the Northern Mozambique Channel, an international hotspot as well as a notable shipping area, an important international fisheries resource area, an increasingly popular tourist destination and a future major producer of natural gas.

Building a coherent and representative network throughout the Subantarctic region requires establishment of additional MPAs, such as in East Antarctica. The same applies to the Arctic region as well as the need to develop marine conservation efforts both in Greenland and at the regional level in order to contribute to the pan-arctic MPA network.

The Transatlantic MPA Network, an EU initiative launched in 2016, promotes cooperation between MPA managers around the Atlantic Ocean and aims for more effective management of MPAs in the coastal and offshore areas of the 64 countries and territories in the Atlantic by enhancing the transatlantic dialogue through exchange of best practices and concrete joint projects and regional strategies.

Action points:

- **Regional cooperation on marine conservation has to be further developed and supported** as it is critical for the effectiveness of marine conservation as well as for the resilience of marine ecosystems under threat and migratory species.
- **Learning networks:** Twinning and peer-to-peer learning between managers of marine mammal and shark sanctuaries and MPA manager learning networks (such as CaMPAM) as well as establishing or extending MPA manager networks that include all countries and territories in the region.
- **Fostering transcontinental cooperation** such as the Transatlantic MPA Network to build a coherent and representative network in all oceans, in which the EU Overseas are located.
- **Regional marine strategies** to be adopted by the EU for all EU Overseas regions.
- **Strengthening the EU's presence and involvement in regional conventions, agreements and for a.**

Climate change

Despite being recognized as pressing issue and daunting challenge in all EU ORs and OCTs and the need to adapt, **climate change impacts and ocean acidification have not yet been soundly mainstreamed into EU Overseas marine conservation activities and planning**.

The most comprehensive climate change adaptation planning was undertaken in the British Virgin and Cayman Islands. French Polynesia developed its Climate Strategic Plan with an integrated approach of climate change issues. Considering the similarity of impacts existing climate change plans and adaptation strategies should be shared to benefit other ORs and OCTs. A common platform allowing exchange of experiences could be very useful to foster new EU programs, further integrating ecosystem based adaptation and mitigation in the funding programming and highlighting the importance of climate change issues in the EU Overseas. With the EU climate adaptation strategy adopted by the European Commission in 2013 such a common platform would be not only timely but as well instrumental for gathering data and information on the impacts and adaptation and mitigation solutions developed in the EU Overseas and thus informing other European information systems. In this regard the valuably work of the NetBiome consortium could be capitalized and extended.

Action points:

- **Establishment of a common platform for climate change experience sharing** to foster new EU programs, **further integration of ecosystem-based adaptation and mitigation** in programming for future funding and highlighting the importance of climate change issues in the EU Overseas**.**
- More work is needed such as **modelling and developing scenarios** with tangible translation to ORs/OCTs and regional levels in order to provide **critical insights for marine conservation in a changing ocean and improving existing efforts in an adaptive approach.**
- Developing a **Blue carbon component** in ORs and OCTs climate and MPA strategies.

Resilience:

Only large MPAs, covering both coastal and offshore areas, are notably improving resilience given effective management. Despite the absence of supporting data, such large areas *de facto* address ecological criteria. Most other MPAs provide low to medium resilience but in many cases - even if ecological criteria were not satisfactory - resilience significantly improved through the efforts put globally across EU ORs and OCTs to effectively manage the MPAs including the reduction of anthropogenic threats. Discussions on resilience with MPA managers across the ORs and OCTs revealed some reluctance to consider reviewing current MPAs in order to improve resilience. Many focus their efforts on effective management of existing MPAs and, when possible, monitoring climate change impacts. However, adding more areas or changing current management still seems difficult.

Action points:

- Carrying out **MPA effectiveness surveys and recommending more effective options** that improve resilience **to support medium to long-term conservation planning** to be implemented gradually and not imposed on in the short-term.
- **Restoration of coastal and marine ecosystems** as they provide essential services and are key in climate change adaptation and mitigation.

Invasive Alien Species:

There is a global lack of awareness and knowledge on marine invasive alien species (IAS) across ORs and OCTs, except in the Caribbean, where the invasion of Lionfish affects all the reefs and results in significant loss of biodiversity and fish stocks. Many regional and national initiatives have been launched to mitigate the impacts of this invasion. In other regions, only anecdotal actions have been taken to address the issue and current efforts focus only on terrestrial invasives.

Action points:

- **Extend field surveys on marine IAS** (like IUCN's studies in the Seychelles and Diego Garcia in 2008 and in Bonaire, Sint Eustatius and Saba in 2011) to other ORs and OCTs to **assess the status of marine species invasion and raise awareness on this threat** more efficiently.
- Still outstanding dedicated **global and regional databases for marine IAS** could support such surveys and sharing of knowledge.

High-Seas:

The EU Overseas and their Member States were pivotal in the creation of the world's first High Seas MPA on the South Orkney Islands Southern Shelf in the Antarctic waters (governed by CCAMLR) and High Seas MPAs in the North Atlantic, governed by the Azores and OSPAR. EU Overseas and the UK were also involved in initiating further progress on an MPA beyond their national waters in the Sargasso Sea. 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 of areas beyond national jurisdiction is currently under discussion. Regional frameworks already paved the way but revisions are needed in order to support a scale-up process as their current legal geographical scope does not encompass High Seas.

Action point:

- **Stronger regional cooperation and revisions of some existing regional frameworks** are needed in order to support a scale-up process as the current legal geographical scope does not encompass High Seas.

The ORs and OCTs have shown their capability to have a major impact on ocean conservation and stewardship. They thus deserve to play a more important role in European assessments and reports, EU strategies and funds supporting marine conservation and marine spatial planning activities. The international importance of the EU Overseas' biodiversity and their locations in all the oceans from the poles to the tropics are incredible strategic assets that have been overlooked and neglected for too long. The important marine dimension of the ORs and OCTs should have a more prominent place in the preparation of EU funding programming as well as EU policies and strategies. The 2020 deadline for European and international targets should provide a greater opportunity for engaging the ORs and OCTs in the post-2020 debate and planning.

Coastline of Grand Glorioseus © Bruno Marie

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ANNEXES

Annex 1: Marine and coastal protected areas in the EU Overseas Amazonian region

Table A1: EU Overseas marine and coastal protected area designations in the Amazonian region

Name	Area (km²)	IUCN Category / Other Designation	Decree / Designation Year	Managed by
Amana Natural Reserve* Includes Ramsar site: Basse-Mana total area 590 km²)	(148)* 150	RNN138 Ramsar n° 643	Décret n° 98-165, 13/03/1998 1993	Parc Naturel Régional de la Guyane (PNR)
Marais de Kaw, incl. Ile du Grand Connetable (total area 1370 km²) with :	312	Ramsar n° 644 / Zones humides	1993	
Marais de Kaw-Roura* Ramsar Site (total area 947 km²)	(233)*	IV / RNN139	Décret n° 98-166, 13/03/1998	
Île du Grand-Connétable Natural Reserve*	(78.5)*	SPAW / RNN109	Décret 08/12/1992	Groupe d'Étude et de Protection des Oiseaux en Guyane (GEPOG)
Estuaire du fleuve Sinnamary Ramsar Site	284.3	Ramsar n°1828	2008	Conservatoire du littoral & SEPANGUY[15]
Total French Guiana (Amazonia region): 3	**746.3 km²**			

* included in marine area of Ramsar site

Sources: Agence Française pour la Biodiversité, Protected Planet website, Réserves Naturelles de France, DEAL Guyane, Ramsar website

Annex 2: Marine and coastal protected areas in the EU Overseas Caribbean region

Table A2.1: Marine and coastal protected area designations in French Caribbean entities

Name	Area (km²)	IUCN Category /Other Designation	Decree / Designation Year	Managed by
Agoa Sanctuary (all French Antilles waters)	143,256	SPAW	2010	AAMP
Guadeloupe (FR): 6	**1,366 km²**			
Grand Cul-de-Sac Marin (incl. Ramsar 295 km²) Core areas of Guadeloupe National Park (includes 6 îlets & Îlets Pigeon to the west) Adjacent Maritime Areas of National Park	40.9 1308	II (core area) / Ramsar n°642, MaB Reserve / SPAW	Décret n° 2009-614 du 03/06/2009	Park National de la Guadeloupe
RNN Iles de Petite-Terre (total area : 10km²)	8.4	IV / RNN142 / SPAW	Décret n° 98-801 du 03/09/1998	Association TITE & ONF
Grande Anse et Gros Morne	0.7	IV / Site classé (DEAL)	Arrêté ministériel du 25 avril 1980	Commune de la Saint Louis
Pointe des Châteaux Saint François	5.58	Site classé (DEAL)	Décret ministeriel du 27 Mai 1997	ONF
Baie de Pont-Pierre et Pain de Sucre Terre-de-Haut	1.43	Site classé (DEAL)	Décret ministerial, 14/05/1991	Commune de Terre-de-Haut
Anse à la Barque Vieux Habitant-Bouillante	ca. 1.0	Site classé (DEAL)	Arrêté ministeriel du 5 Mai 1980	Commune de la Saint Louis
Martinique (FR) : 3	**47,340 km²**			
Parc Naturel Marin de Martinique	47,340	PNM	Décret n° 2017-784, 5 mai 2017	*(Management to be set up)*
Marine du Prêcheur - Albert Falco Réserve naturelle régionale	6.85	RNR291	Deliberation n° 14-1624-1 14/10/2014	Conseil Régional du Martinique
Ilets de Sainte Anne Réserve naturelle nationale	0.3	IV / RNN125	Décret n° 95-915 11/08/1995	ONF Martnique
Etang des Salines	2.07	Ramsar n°1830 / SPAW	2008	Commune Sainte Anne / Conservatoire
Saint-Barthélemy : 1	**12 km²**			
Réserve Naturelle Nationale de St-Barthélemy	12	IV / RNN132	Décret n° 96-885 du 10 oct 1996	Agence Territoriale de l'Environnement de Saint-Barthelemy (ATE)
Saint-Martin : 1	**29 km²**			
Réserve naturelle de Saint-Martin / Zones humides et marines de Saint-Martin Ramsar site with marine/coastal connection included in RNN	29	IV / RNN143 / Ramsar n°2029 (2011)	Décret n°98-802 du 3 sept 1998	Association Gestion RN Saint-Martin (RNSM)
All French Antilles: 13	**143,256 km²**			

Table A2.2: Marine and coastal protected area designations in Caribbean Dutch entities

Name	Area (km²)	IUCN Category / Designation	Decree / Designation Year	Managed by
Aruba (NL) : 1	**0.7**			
Het Spaans Lagoen	0.7	Ramsar n°198;	1980 (2017 included in Parke Nacional Arikok)	Fundacion Parke Nacional Arikok (FPNA)
Bonaire (NL) : 4	**27**			
Bonaire National Marine Park includes marine area of 3 Ramsar sites: Het Lac Het Pekelmeer Klein Bonaire Island and adjacent area	27	II Ramsar n°199 Ramsar n°200 Ramsar n°201	1979 1980 1980 1980	Stichting Nationale Parken Bonaire (STINAPA)
Curaçao (NL): 4	**11.5**			
Curaçao Underwater Park	6	II	1983 (to be re-established in 2017 with specific regulations)	Carmabi Foundation
Rif Sint Marie (total area: 668 ha)	1.3	Ramsar n° 2120	2013	Foundation Uniek Curaçao; no management plan but considered as protected areas
Malpais/Sint Michiel (total area: 1100 ha)	0.6	Ramsar n° 2117	2013	
Northwest Curaçao (total area: 2441 ha)	3.6	Ramsar n° 2119	2013	Carmabi & Uniek Foundation; no management plan but considered as protected area
Saba (NL): 2	**2693**			
Saba National Marine Park	13	II	1987	Saba Conservation Foundation
Saba Bank National Park	2680	II	2010	Saba Bank Management Unit (SBMU)
St Eustatius (NL)	**27.5**			
Sint Eustatius National Marine Park	27.5	II	1996	St. Eustatius National Parks Foundation (STENAPA)
Sint Maarten (NL) : 2	**31.3**			
Man of War Shoal National Marine Park	31	n.a.	2010	St. Maarten Nature Foundation
Mullet Pond	0.3	Ramsar n° 2270	2014 (2016 designated)	St. Maarten Nature Foundation

Table A2.3: Marine and coastal protected area designations in Caribbean UK entities

Name	Area km² (acres)	IUCN Category / Designation	Decree / Designation Year	Managed by
Anguilla (UK): 7	**79.2**			
Dog Island Marine Park	10	(National Marine Parks)	Marine Parks Ordinance, 1982 & 1993	Department of Fisheries & Marine Resources (DFMR)
Prickly Pear & Sea Island Marine Park	33			
Sandy Island Marine Park	5			
Shoal Bay & Island Harbour Marine Park	19			
Sombrero Island Nature Reserve Marine Park	10.5			
Little Bay Marine Park	1			
Junks Hole Marine Park	0.7		2007	
British Virgin Islands[16]: 15	**62.6**			
Western Salt Ponds of Anegada	10.4	Ramsar n° 983	1999	Conservation and Fisheries Dept
RMS Rhone Marine Park	3.1 (766 acres)	III / NP / Marine Park	1980	BVI National Parks Trust
Horseshoe Reef, Anegada	41.1	IV / Marine Reserve	2003	Conservation and Fisheries Dept
Santa Monica Rock	0.04	Marine Park	2003	
The Sound, Ginger Island	0.3	Fisheries protected area	2003	
Taylor Bay, Virgin Gorda	2.6		2003	
South Sound, Virgin Gorda	1.3		2003	
Beef Island Channel	0.5		2003	
North Bay, Guana	1.5		2003	
Green Cay	0.4		2003	
Frenchman's Cay	0.3		2003	
Money Bay, Norman Island	0.2		2003	
The Sound, Salt Island	0.1		2003	
Hans Creek, Beef Island	0.3		2003	
Big Reef, Peter Island	1.5		2003	
Cayman Islands: 40	**109.8**			

Name	Area km² (acres)	IUCN Category / Designation	Decree / Designation Year	Managed by
12 - Mile Bank East Grouper Hole	2.58	IV	2003	Department of Environment
12 - Mile Bank West Grouper Hole	3.23	IV	2003	
Bloody Bay Marine Park - Jackson Point (Little Cayman) - **NTZ**	2.04	II	1986	
Booby Pond and Rookery (Little Cayman)	0.82	Ramsar n°702	1994	
Cayman Brac East	1.15	IV	1986	
Cayman Brac West	1.85	IV	2002	
Salt Water Point / Dennis Point Replenishment Zone (Cayman Brac)	0.21	IV	1986	
Dick Sessingers Bay - Beach Point Marine Park (Cayman Brac) - **NTZ**	2.18	II	1986	
East End Replenishment Zone / Cayman Dive Lodge (Grand Cayman)	0.05	IV	1986	
Frank Sound Replenishment Zone (Grand Cayman)	2.06	IV	1986	
George Town Marine Park / Old Pageant Beach - Sand Cay Apartments (Grand Cayman) **- NTZ**	2.47	II	1986	
Grand Cayman East Grouper Hole	0.89	IV	1985	
Grand Cayman West Grouper Hole	2.84	IV	2002	
Head of Barkers - Flats (Grand Cayman)	3.36	IV	1986	
Jennifer Bay - Deep Well Marine Park (Cayman Brac) **- NTZ**	0.71	II	1986	
Little Cayman East Grouper Hole	3.22	IV	1985	
Little Cayman West Grouper Hole	1.43	IV	2002	
Little Sound Environmental Zone (Grand Cayman) **- NTZ**	17.01	Ib	1986	
Mary's Bay - East Point Replenishment Zone (Little Cayman)	3.39	IV	1986	
No Dive Zone East	1.43	IV	1986	
No Dive Zone West	1.46	IV	1987	
North Sound Replenishment Zone (Grand Cayman)	30.57	IV	1986	
Pageant Beach Replenishment Zone	0.48	IV	1986	
Preston Bay Marine Park / Main Channel MP (Little Cayman) **- NTZ**	1.01	II	1986	
Rum Point Marine Park / Bowse Bluff - Rum Point (Grand Cayman) **- NTZ**	0.48	II	1986	
Sand Bluff Replenishment Zone / Radio Mast - Sand Bluff (Grand Cayman)	1.41	IV	1986	
Sandbar Prohibited Scuba Diving Zone	0.24	IV	2007	
Sandbar Wildlife Interaction Zone	5.52	IV	2007	
Seven Mile Beach Marine Park / Victoria House- Treasure Island Resort (Grand Cayman) **– NTZ**	5.36	II	1986	
South East Bay Replenishment Zone / Coral Isle Club (Cayman Brac)	0.08	IV	1986	
South Hole Sound Replenishment Zone (Little Cayman)	3.70	IV	1986	
South Hole Sound Replenishment Zone (Grand Cayman)	3.13	IV	1986	
Spanish Bay Marine Park / Spanish Cove Resort - Jetty (Grand Cayman) **- NTZ**	0.12	II	1986	
Spott Bay Replenishment Zone (Cayman Brac)	0.13	IV	1986	
Spotter Bay Replenishment Zone / Spotter Bay - Anchors Point (Grand Cayman)	0.57	IV	1986	
Spotts Bay Replenishment Zone / Bat Cave Beach	0.29	IV	1986	
Stingray City Wildlife Interaction Zone	0.35	IV	2007	
West Bay Bight Marine Park / North West Point - West Bay Cemetery (Grand Cayman) - **NTZ**	1.66	II	1986	
West Bay Replenishment Zone / West Bay Cemetery - Victoria House (Grand Cayman)	0.76	IV	1986	
White Bay Marine Park / Scotts Anchorage (Cayman Brac) **- NTZ**	0.38	II	1986	
Turks and Caicos Islands (TCI): 20	**681**			

Name	Area km² (acres)	IUCN Category / Designation	Decree / Designation Year	Managed by
Admiral Cockburn Land And Sea National Park (total: 11.8 km²) NP1	4.8 (1185 acres)	IV	1992	TCI National Trust & Gov Departments
Chalk Sound National Park (total: 3607 acres/14.6 km²) NP2	8.16	III	1987	
Columbus Landfall Marine Naxtional Park NP3	5.18 (1280 acres)	IV	1992	
East Bay Islands National Park NP5	35.4 (8746 acres)	II	1987	
Fort George Land and Sea National Park NP6	4.94 (1220 acres)	IV	1987	
Grand Turk Cays, Land and Sea National Park NP7	1.56 (386 acres)	IV	1987	
North West Point Marine National Park NP8	10.26 (2535 acres)	II	1987	
Princess Alexandra Land and Sea National Park NP9	26.43 (6532 acres)	V	1992	
South Creek National Park NP10	0.75 (183 acres)	III	1987	
West Caicos Marine National Park NP11	3.97 (980 acres)	IV	1992	
Admiral Cockburn Nature Reserve (total: 1065 acres/4.31 km²) NR12	1.04	IV	1992	
Bell Sound Nature Reserve (total: 2820 acres/11.42 km²) NR13	10.53	IV	1975	
North, Middle and East Caicos Nature Reserve (includes Ramsar site total size: 568 km²) NR17	544 (210 miles²)	IV / Ramsar n°493	1990	
Pigeon Pond and Frenchman's Creek Nature Reserve (total: 5910 acres/12.34 km²) NR19	12.34 (5910 acres)	IV	1992	
Princess Alexandra Nature Reserve NR20	1.82	III	1992	
Vine Point and Ocean Hole Nature Reserve NR22	7.57 (1870 acres)	IV	1987	
Big Sand Cay Sanctuary (total: 372 acres/1.51 km²) S23	1.21	IV	1987	
French, Bush and Seal Cays Sanctuary S24	0.2 (50 acres)	IV	1987	
Long Cay Sanctuary (total: 198 acres /0.8 km²) S25	0.37	IV	1987	
Three Mary Cays Sanctuary S26	0.13 (33 acres)	IV	1987	
Total UK Caribbean: 79	**884**			

Sources for data of Caribbean coastal and marine efforts: Parc national de la Guadeloupe, Réserve naturelle nationale de Petite-Terre, Agence Française pour la Biodiversité, Observatoire de l'Eau Martinique, DEAL Martinique, Agence Territoriale de l'Environnement Saint-Barthélemey, Dutch Caribbean Nature Alliance (DCNA), Ministry of Economic Affairs, National Office for the Caribbean Netherlands, Joint Nature Conservation Committee (JNCC), British Virgin Island (BVI) Conservation and Fisheries Department, National Park Trust (Protected Areas System Plan 2007-2017), Turk and Caicos National Park Ordinance, MPA Global, Protected Planet website.

Annex 3: Marine and coastal protected areas in the EU Overseas Arctic and subarctic region

Table A3.1a: Marine and coastal protected area designations for Greenland

Name	Area (km²)	IUCN Category / Other Designation	Decree / Code (Year)	Managed by
Ilulissat Icefjord Nature Reserve (part of WHS, total: 4,024 km²)	384	V / WHS n° 1149	2004	Ministry of Environment and Nature
Northeast Greenland National Park/ Nationalparken i Nord- og Østgrønland (total: 972,000 km²)	88,237	V / MaB	1974 (extended 1988)	
Melville Bay Nature Reserve[17] (total: 10,500 km²)	4970	Ib	1977	
Austmannadalen Nature Reserve (total: 598.2 km²)	32	Ib	2008	
Kitsissunnguit /Grønne Ejland Nature Reserve (total 70.7 km², 86% marine)	60.8	V/VI Ramsar n°384	1988	
Ikkattoq and adjacent archipelago (total: 448.8 km², 50% marine)	224.4	V / VI Ramsar n°387	2000 (Ramsar since 1988)	
Qinnguata Marra and Kuussuaq (total: 64.8 km²,28% marine)	18.1	Ramsar n°382	1988	
Naternaq (Lersletten) (total: 1,840.1 km²,16% marine)	294.4	Ramsar n°385		
Aqajarua (Mudderbug (total: 1,840.1 km2, 20% marine)	44.7	Ramsar n°381		
Eqalummiut Nunaat and Nassuttuup Nunaa (total: 5,795.3 km², 5% marine)	289.8	Ramsar n°386		
Kitsissut Avalliit (Ydre Kitsissut) (total: 44.7 km², 96% marine)	42.9	Ramsar n°388		
Heden (Jameson Land) (total: 2,523.9 km², 5% marine)	126.2	Ramsar n°389		
Hochstetter Forland (total: 1848.2 km², 7% marine)	129.4	Ramsar n°390		
Kilen (total: 512.8 km², 28% marine)	143.6	Ramsar n°391		
Important Bird Areas (bird cliffs)	8	n.a.	n.a.	Ministry of Fisheries, Hunting and Agriculture
Total Greenland : 15	**95,005**			

Sources: Ministry of Independence, Nature, Environment and Agriculture / Department of Nature and Climate, Ramsar website, ASIAQ, Martin Schiøtz, Protected Planet website

Table A3.1b: Marine and coastal protected area designations for Saint Pierre & Miquelon

Name	Area (km²)	IUCN Category / Other Designation	Decree / Code (Year)	Managed by
Domaine public maritime du Grand Barachois (Incl. in Isthme de Miquelon-Langlade, total area 14 km²)	6	IV / domaine public maritime du Conservatoire du littoral	2005	Commune de Miquelon-Langlade / Conservatoire du littoral
Total Saint Pierre & Miquelon: 1	**6**			

Sources: Conservatoire Littoral, Agence Française pour la Biodiversité.

Annex 4: Marine and coastal protected areas in the EU Overseas North Atlantic region

Table A4.1: Marine and coastal protected area designations in the Sargasso Sea and Bermuda: most MPAs are no-take (NTZ) with the exception of North and South Shore Coral Reef Preserve (fishing allowed). The North Eastern Area (39.9 km^2) and South Western Area (49.6 km^2) are seasonally closed (May-August) to fishing and not listed as MPAs.

Note: The DENR is currently applying the IUCN protected area categories more stringently, which may lead to some changes on the IUCN category of some MPAs, although all sites will remain protected. As most were primarily set up as dive sites, the DENR is looking at the OECM[176] category for some of these sites.

Name	Area (km^2)	IUCN Category / Designation	Year of Designation	Managed by
Airplane	0.283	III	2000	
Aristo	0.283	III	2000	
Blanche King	0.023	III	2000	
Caraquet	0.283	III	2000	
Commissioner's Point Area	0.126	III	2000	
Constellation Area	0.785	III	1988	
Cristobal Colon	0.283	III	2000	
Darlington	0.283	III	2000	
Eastern Blue Cut	1.13	II	2000	
Hermes and Minnie Breslauer	0.785	III	1989	
Hog Breaker	0.283	III	2000	
Kate	0.283	III	1989	
Lartington	0.283	III	2000	
L'Herminie	0.023	III	2000	
Marie Celeste	0.283	III	2000	
Mills Breaker	0.283	III	2000	**DENR**
Montana	0.283	III	2000	
North Carolina	0.283	III	2000	
North East Breaker	0.283	III	2000	
North Rock	3.142	II	1990	
North Shore Coral Reef Preserve	130.5	IV	1966	
Pelinaion and Rita Zovetto	0.785	III	1989	
Snake Pit	0.283	III	2000	
South Shore Coral Reef Preserve	4.5	IV	1966	
South West Breaker Area	1.131	III	1986	
Tarpon Hole	0.283	III	2000	
Taunton	0.283	III	2000	
The Cathedral	0.283	III	2000	
Vixen	0.031	III	1973	
Walsingham Marine Reserve	0.249	II	1991	
Xing Da Area	0.126	III	1997	
Total Bermuda: 32	**150**			

Sources: Bermuda Fisheries Protected Areas Order 2000; Protected Planet website, Bermuda National Parks Act, 1986. Amendment Act 2009 not enacted yet and currently on hold, which would include the marine parks Astwood, Castle Island, Church Bay, Cooper's Island, Daniel's Island and John Smith Bay/Smith's Island (*personal comm. Government of Bermuda*)

176 OECM – Other Effective-Area-Based Conservation Measures

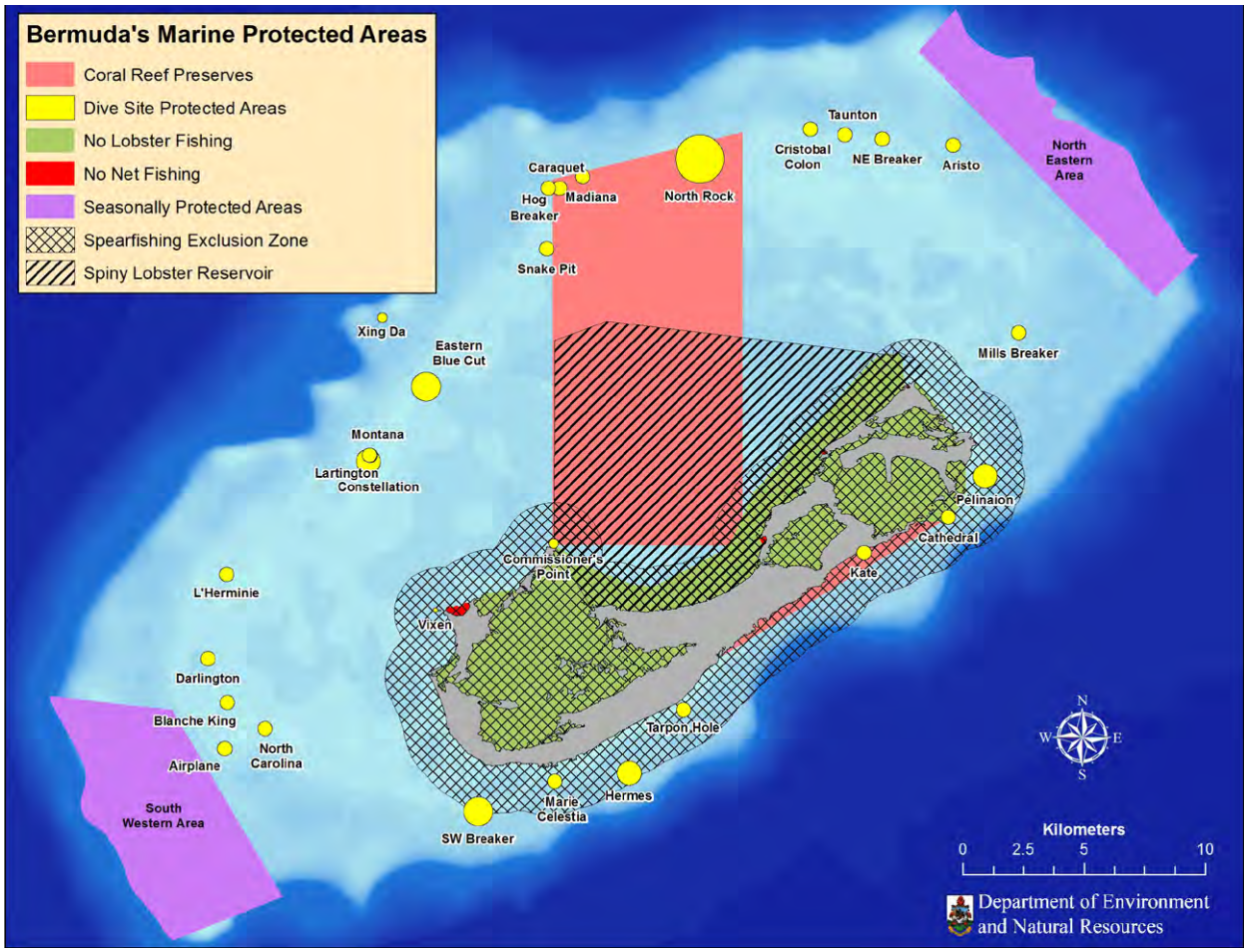


Figure 33: Bermuda's MPAs and other protected sites (Source: Government of Bermuda, 2016)

Table A4.2a: Marine and coastal protected area designations in Madeira

Name	Area (km²)	IUCN Category / Other Designation	Year of Designation	Managed by
Ilhas Selvagens: Special Protection Area (SPA), incl. Natural Reserve (terrestrial) and Special Area of Conservation (SAC, 91.9 km²)	1245.3		1988	Secretaria Regional do Ambiente e Recursos Naturais Instituto das Florestas e Conservação da Natureza (IFCN)
Ilhas Desertas (SAC), incl. Nature Reserve	100.6	Ia	1990	
Sítio da Rocha do Navio Nature Reserve	17.1	Ib	1997	
Garajau Partial Nature Reserve	3.75	Ia	1986	
Ponta de S. Lourenço Special Protection Area (SPA)	24.11		2014	
Rede de Áreas Marinhas Protegidas do Porto Santo	26.75	Ib	2008	
Ilhéu da Viúva, SCI	17.1		1995	
Total Madeira: 7	**1435**			

Sources: Instituto das Florestas e Conservaçao da Natureza - Madeira Government, Instituto da Conservaçao da Natureza e das Florestas, Madeira Natural Park services, Protected Planet website.

Table A4.2b: Marine and coastal protected area designations in the Canary Islands:

Not all local MPAs are provided in this table as most of them are covered by the Natura 2000 network sites. The total MPA size (25,749 km²) was calculated with GIS data, including marine Special Protected Areas (SPAs), Special Areas of Conservation (SACs) and Sites of Community Interest (SCIs).

Name	Area (km²)	IUCN Category / Designation	Year of Designation	Managed by
Espacio marino de la zona occidental de El Hierro (SPA)	223.6		2014	Canarian Autonomous Community
ZEPA de los Roques de Salmor (El Hierro)	6.6		2014	
ZEPA del norte de La Palma	391.6		2014	State Administration
ZEPA de La Gomera-Teno	2093.2		2014	Canarian Autonomous Community
ZEPA de los Acantilados de Santo Domingo y Roque de Garachico	21.1		2014	
ZEPA del Roque de la Playa	1.9		2014	
ZEPA de Anaga	7.7		2014	
ZEPA de Mogán-La Aldea	187.1		2014	
ZEPA de La Bocayna	834.1		2014	
ZEPA de los Islotes de Lanzarote	1301.8		2014	
SCI Espacio marino del oriente y sur de Lanzarote-Fuerteventura (partially overlapping with ZEPA)	14,328		2015	
ZEPA Banco de la Concepción SCI Banco de la Concepción (partially overlapping)	4523.1 6100.7		2014	
Total Canary Islands (incl.local): 46	**25,749**			

Sources: Ministerio de Agricultura y Pesca, Alimentacion y Medio Ambiente, Protected Planet website, University of Las Palmas de Gran Canaria

Table A4.2c: Marine and coastal protected area designations in the Azores:

Name	Area (km²)	IUCN Category / Designation	Year of Designation	Managed by
Caldeirinhas Nature Reserve, Faial	0.1	Ia	1984	Faial Natural Park; Regional Directorate for Sea Affairs
Castelo Branco Resource Management Protected Area (Faial)	1.33	VI	2008	
Capelinhos Resource Management Protected Area (Faial)	5	VI	2008	
Cedros Resource Management Protected Area (Faial)	8.91	VI	2008	
Canal Faial-Pico/Sector Faial Resource Management Protected Area (Faial)	173.9	VI	2008	
Canal Faial-Pico/Sector Pico Resource Management Protected Area (Pico)	66.9	VI	2008	Pico Natural Park; Regional Directorate for Sea Affairs
OSPAR MPA Faial-Pico Channel (240 km², 2006), covers both sectors	(240)	OSPAR MPA	2006	
Porto das Lajes Resource Management Protected Area (Pico)	1.53	VI	2008	Pico Natural Park; Regional Directorate for Sea Affairs
Ponta da Ilha Resource Management Protected Area (Pico), incl. SCI Ponta da Ilha (3.98 km²)	5.96	VI	2008	
Baía de São Lourenço Resource Management Protected Area (Santa Maria)	1.78	VI	1987	Natural Park Santa Maria; Regional Directorate for Sea Affairs
Costa Norte Resource Management Protected Area (Santa Maria)	24.6	VI	1987	
Costa Sul Resource Management Protected Area (Santa Maria)	21.6	VI	1987	
Ilhéu de Baixo Nature Reserve (Graciosa)	1.39	Ib	2008	Regional Directorate for the Environment; Regional Directorate for Sea Affairs
Ilhéu da Praia Nature Reserve (Graciosa)	2.19	Ib	2008	
Costa Sudeste Resource Management Protected Area (Graciosa)	1.36	VI	2008	
Costa Noroeste Resource Management Protected Area (Graciosa)	2.83	VI	2008	
Ilhéu de Vila Franca do Campo Habitats or Species Management Protected Area (São Miguel)	0.02	IV	1983	
Caloura – Ilhéu de Vila Franca do Campo Resource Management Protected Area (São Miguel)	13.49	VI	2004	
Costa Este Resource Management Protected Area (São Miguel)	3.63	VI	2008	
Ponta do Cintrão – Ponta da Maia Resource Management Protected Area (São Miguel)	23.1	VI	2008	
Porto das Capelas – Ponta das Calhetas Resource Management Protected Area (São Miguel)	14.99	VI	2008	
Ponta da Ferraria – Ponta da Bretanha Resource Management Protected Area (São Miguel)	19.55	VI	2008	
Costa Norte Resource Management Protected Area (Flores)	39.74	VI	2011	
Costa Oeste Resource Management Protected Area (São Jorge)	2.09	VI	2011	
Entre Morros Resource Management Protected Area (São Jorge)	2.47	VI	2011	
Costa das Fajãs Resource Management Protected Area (São Jorge)	8.76	VI	2011	
Topo Resource Management Protected Area (São Jorge)	6.1	VI	2011	
Quatro Ribeiras Resource Management Protected Area (Terceira)	3.57	VI	2011	
Costa das Contendas Resource Management Protected Area (Terceira)	1.81	VI	2011	
Ilhéus das Cabras Resource Management Protected Area (Terceira)	1.12	VI	2011	
Cinco Ribeiras Resource Management Protected Area (Terceira)	0.03	VI	2011	
Baixa da Vila Nova Resource Management Protected Area (Terceira)	0.42	VI	2011	
Monte Brasil Resource Management Protected Area (Terceira)	0.48	VI	2011	

Name	Area (km²)	IUCN Category / Designation	Year of Designation	Managed by
Banco D.João de Castro Nature Reserve	16.31	Ib	2011	Azores Marine Park Regional Directorate for Sea Affairs
Oceânica do Corvo Habitats or Species Management Protected Area; *off-shore*	2680	IV	2011	Directorate for Sea Affairs (part of Azores Marine Park)
Oceânica do Faial Habitat or Species Management Protected Area	2607	IV	2011	
Costa do Corvo Resource Management Protected Area (Corvo), also designated OSPAR MPA Corvo Island (257km², since 2006) & MaB (since 2007)	257.4	VI / OSPAR MPA/ MaB	2006	Regional Directorate for Sea Affairs
Banco Princesa Alice Habitats or Species Management Protected Area, *off-shore*	370	IV	2016	Directorate for Sea Affairs (part of Azores Marine Park)
Banco Condor Resource Management Protected Area, *off-shore*	242	VI	2016	
Arquipélago Submarino do Meteor Resource Management Protected Area, *off-shore (108,823 km² located in ABNJ)*	14,415 (total: 123,238)	VI	2016	
MPA southwest of the Azores Resource Management Protected Area, *off-shore (2,151 km² located in ABNJ)*	8,879 (total: 11,030)	VI	2016	
Banco D.João de Castro Resource Management Protected Area and OSPAR MPA, *off-shore*	330	VI OSPAR MPA	2011	Azores Marine Park Regional Directorate for Sea Affairs
Campo Hidrotermal Menez Gwen Nature Reserve, includes OSPAR MPA Menez Gwen hydrothermal vent field (95 km², since 2006), *off-shore*	264.5	Ib OSPAR MP	2011	
Campo Hidrotermal Lucky Strike Nature Reserve and OSPAR MPA Lucky Strike hydrothermal vent (191.37 km², 2006), *off-shore*	300.52	Ib / OSPAR MPA	2011	
Monte Submarino Sedlo Nature Reserve and OSPAR MPA Sedlo Seamount (2007), *off-shore*	4093	Ib / OSPAR MPA	2011	
Ilhéus das Formigas Nature Reserve (Santa Maria), also designated OSPAR MPA Formigas Bank (525 km², since 2006); Includes Ramsar site n° 1804	524	Ib OSPAR MPA	1988 2006	Natural Park Santa Maria; Regional Directorate for Sea Affairs
Total Azores: 45 (without MPAs in ABNJ)	**35,440**			

Sources: Government of the Azores (Direção Regional dos Assuntos do Mar- Secretaria Regional do Mar Ciência e Tecnologia – Governo Regional dos Açores), Protected Planet website, OSPAR Commission

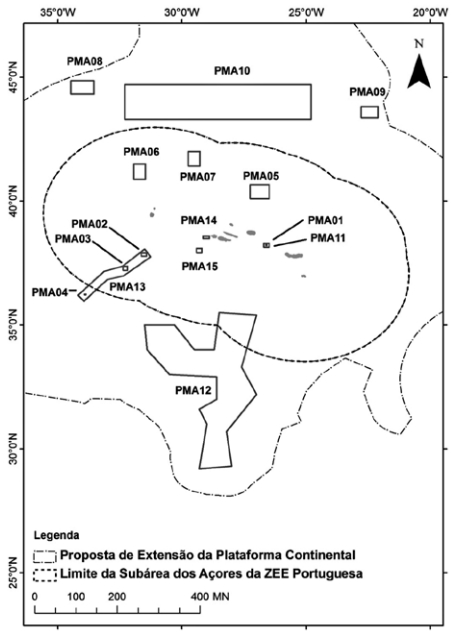


Figure 34: PMA01- Banco D. João de Castro Nature Reserve; PMA02- Campo Hidrotermal Menez GwenNature Reserve; PMA03- Campo Hidrotermal Lucky Strike Nature Reserve; PMA04- Campo Hidrotermal Rainbow Nature Reserve; PMA05-Monte Submarino Sedlo Nature Reserve; PMA06- Oceânica do Corvo; PMA07- Oceânica do Faial; PMA08- Altair Seamount High Seas; PMA09- Antialtair Seamount High Seas; PMA10- MARNA High Seas; PMA11- Banco D.João de Castro Resource Management Protected Area; PMA12-Meteor; PMA13-MPA Southwest of the Azores; PMA14-Banco Condor; PMA15-Banco Princesa Alice (Source: Decreto Legislativo Regional 13/2016/A, de 19 de Julho; Região Autónoma dos Açores - Assembleia Legislativa)

Table A4.2d: Marine protected area designations in areas beyond national jurisdiction (ABNJ) in the North Atlantic region:

Name	Area (km^2)	IUCN Category / Designation	Year of Designation	Managed by
Campo Hidrotermal Rainbow Nature Reserve and OSPAR MPA Rainbow hydrothermal vent field	22.2	Ib / OSPAR MPA	2006	Benthic zone (sea floor) managed by Azores Marine Park; Pelagic zone (water column) remains unprotected (OSPAR, 2015)*
Monte Submarino Altair Habitats or Species Management Protected Area and OSPAR Altair Seamount High Seas MPA	4380.9	IV / OSPAR MPA	2010	Benthic zone (sea floor) managed by Azores Marine Park (Regional Directorate for Sea Affairs); Pelagic zone (water column) managed by OSPAR
Monte Submarino Antialtair Habitats or Species Management Protected Area or OSPAR Antialtair Seamount High Seas MPA	2855.4	IV / OSPAR MPA	2010	
OSPAR MAR North of the Azores High Seas MPA	93,568	OSPAR MPA	2010	
OSPAR Milne Seamount Complex MPA (Northwest of the Azores)	20,913	OSPAR MPA	2010	OPSAR
OSPAR Josephine Seamount High Seas MPA, between EEZ of Madeira and Portugal	19,370	OSPAR MPA	2010	
OSPAR Charlie-Gibbs South High Seas MPA	145,420	OSPAR MPA	2010	
OSPAR Charlie-Gibbs North High Seas MPA	178,651	OSPAR MPA	2012	
Arquipélago Submarino do Meteor Resource Management Protected Area *(14,415 km^2 located within Azorean EEZ)*	108,823 (total: 123,238)	VI	2016	Water column managed by Azores Marine Park (Regional Directorate for Sea Affairs)
MPA southwest of the Azores Resource Management Protected Area *(8,879 km^2 located within Azorean EEZ)*	2,151 (total: 11,030)	VI	2016	
MPAs in ABNJ: 10	**575,335**			

*The Rainbow hydrothermal vent field MPA was assigned to Portugal in terms of number and area coverage, which "*recognised its obligations under UNCLOS Article 192 to protect and preserve the marine environment, as well as the precautionary principle, and assumed responsibility for protecting the seabed and the sub-soil even prior to the final conclusion of the UN CLCS. It has to be noted that this MPA encompasses only the seabed with no scientific case to extend the MPA to the water column.*" (OSPAR, 2015; p. 18).
Sources: OSPAR Commission, Government of the Azores, Protected Planet website

Annex 5: Marine and coastal protected areas in the EU Overseas South Atlantic region

Table A5: Marine and coastal protected area designations in the South Atlantic region

MPA name	MPA area (km^2)	IUCN Category / Designation	Year of Designation	Managed by
Sea Lion Island, Falkland Islands	27.4	Ramsar n°1104	2001	Department of Environmental Planning, Falkland in collaboration with landowner (farmer)
Bertha's Beach, Falkland Islands	21.2	Ramsar n°1103	2001	
Saint Helena's MPA	445,224 *(200 nm zone around St Helena)*	VI	Environmental Protection Ordinance 2016	Environment and Natural Resources Directorate, St Helena Government
Inaccessible Island, Tristan da Cunha	1265.24	Ramsar n° 1869	2008	Tristan Conservation Department, Government of Tristan da Cunha
Gough Island, Tristan da Cunha	2298.11	Ramsar n° 1868	2008	
Gough and Inaccessible Islands WHS (covering Ramsar sites)	(3,900)	WHS n° 740	1995 Gough Island; 2004 extension to Inaccessible Island	
Total South Atlantic region: 5	**453,836**			

Sources: SAERI, Ramsar website, UNESCO WHS website, Falkland Government, Ascension Island Government, Protected Planet website

Annex 6: Marine and coastal protected areas in the EU Overseas Antarctic and Subantarctic region

Table A6a: EU Overseas marine and coastal protected area designations in the Antarctic and Subantarctic region

Name	Area (km²)	IUCN Category / Other Designation	Decree / Code (Year)	Managed by
Terres Australes Françaises National Nature Reserve* (TAAF district) *with 5 special protected sites (no-take)*	545,060 *127,919*	VI / RNN; *(Ia)***	Décret n°2006-1211 du 3 octobre 2006; Extension: Décret no 2016-1700 (2016)	TAAF
Périmètre de protection de la Réserve Naturelle Nationale des Terres australes françaises / Protection zone around the Nature Reserve	989,787	VI	Arrêté n° 2017-28 du 31 mars 2017	
South Georgia and South Sandwich Islands MPA	1,070,000	VI	2012	Government of SGSSI
Total Antarctic & Subantarctic: 3	**2,732,766**			

Sources: TAAF, Agence Française pour la Biodiversité, Protected Planet website.

* Extension of the National Nature Reserve (545,060 km²) in 2016 and designation of protection zone around the Reserve (989,787 km²) in 2017 are both IUCN management category VI.
** The territorial waters of Crozet archipelago and in parts of the EEZ of Kerguelen island are classified as enhanced marine protection zone (an area of over 120,000 km²), in which no kind of fishing, commercial and industrial activities is allowed. This area would correspond to the IUCN management category for a strict nature reserve (Ia).

Table A6b: Marine protected area designations in areas beyond national jurisdiction (ABNJ) in the Antarctic and Subantarctic region:

Name	Area (km²)	IUCN Category / Designation	Year of Designation	Managed by
South Orkney Islands Southern Shelf MPA	94,000	Ia	2009	CCAMLR
Ross Sea Region MPA (to be enforced in Dec. 2017) with *General Protection Zone (i)* *General Protection Zone (ii) 74,765* *General Protection Zone (iii)* *Krill Research Zone* *Special Research Zone*	2,090,027 *(1,555,851)* *(74,765)* *(21,098)* *(328,750)* *(109,563)*	n.a.	(to be enforced in Dec. 2017)	CCAMLR
MPAs in ABNJ: 2	**2,184,027**			

Sources: CCAMLR, Protected Planet website.

Annex 7: Marine and coastal protected areas in the EU Overseas Indian Ocean region

Table A7.1: Marine and coastal protected area designations in La Réunion

Name	Area (km²)	IUCN Category / Other Designation	Decree / Code (Year)	Managed by
Reserve naturelle marine de la Réunion	35.5	IV / RNN	RNN164 (2007) / arrete prefectoral n° 1742	GIP RN Marine de la Réunion
La Réserve de Pêche de Sainte Rose	0.3		(2012)	
Total Réunion : 2	**35.8**			

Sources: Réserve naturelle nationale de la Réunion, Agence Française pour la Biodiversité, Inventaire National du Patrimoine Naturel (INPN), Ifremer, Protected Planet website.

Table A7.2: Marine and coastal protected area designations in Mayotte

Name	Area (km²)	IUCN Category / Other Designation	Decree / Code (Year)	Managed by
Parc naturel marin de Mayotte*	68,381	V / PNM	Décret n° 2010-71 (2010)	Board of management[18]
îlot Mbouzi National Nature Reserve (total area incl. terrestrial: 1.43 km²)	(0.6)*	IV / RNN	RNN162 (2007)	Les Naturalistes de Mayotte
Réserve de la Passe en S Réserve de la Passe en S	(14)*	Not officially reported	1990	n.a.
Parc marin de Saziley	(28)*	IV	Arrêté du préfet de Mayotte 518 (1991)	n.a.
Plage de Papani	(0.7)*	IV (Biotope Protection Order)	2005	n.a.
La Vasière des Badamiers	(1.15)*	Ramsar n°2002	Ramsar n° 2002 (2011)	Conservatoire à Mayotte
Total Mayotte: 6	**68,381**			

*The area of the marine park covers the other marine protected areas
Sources: Agence Française pour la Biodiversité, Legifrance (service public de la diffusion du droit) – French Government, Protected Planet website, Ramsar website, Réserves naturelles de France.

Table A7.3: Marine and coastal protected area designations for the Scattered Islands (Îles Eparses)

Name	Area (km²)	IUCN Category / Other Designation	Decree / Code (Year)	Managed by
Parc naturel marin des Glorieuses*	43,614	V / PNM	Décret n° 2012-245 (2012)	TAAF
Glorieuses 12 nm no-take MPA*	*	Not officially reported	Arrêté n° 2013-24 (2013)	
Geyser bank (10 nm no-take MPA)*	*			
Juan da Nova* 12 nm no-take MPA	1849			
Tromelin* 12 nm no-take MPA	1653			
Bassas da India* 12 nm no-take MPA	2209			
Europa* 12 nm no-take MPA	2065			
Île d'Europa Ramsar Site (Ramsar area extends to territorial waters and is hence included in no-take MPA)		Ramsar n°2073	Ramsar site 2073 (2011)	TAAF
Total Scattered Islands: 8	**51,390**			

Sources: Agence Française pour la Biodiversité, TAAF, Ramsar website, Legifrance (service public de la diffusion du droit) – French Government.

Table A7.4: Marine and coastal protected area designations for the British Indian Ocean Territory (BIOT)

Name	Area (km²)	IUCN Category / Other Designation	Decree / Code (Year)	Managed by
British Indian Ocean Territory (Chagos) MPA (area includes the restricted areas and strict nature reserves)	638,556	I	2010	BIOT Administration
Diego Garcia Ramsar site (354 km²) includes Restricted area, IUCN cat. V (77 km²)	(354) (77)*	Ramsar n°1077 V	2001 1997	
Three Brothers and Resurgent Islands Strict Nature Reserve	(187)*	II	1998	
Nelson Island Strict Nature Reserve	(119)*	II		
Danger Island Strict Nature Reserve	(133)*	Not reported		
Cow Island Strict Nature Reserve	(113)*	II		
Eastern Peros Banhos Atoll Strict Nature Reserve	(823)	II		
Total BIOT: 8	**638,556**			

*Since 2010 the areas are part of the BIOT (Chagos) MPA
Sources: Chagos Conservation Trust, Ramsar website, Protected Planet website.

Annex 8: Marine and coastal protected areas in the EU Overseas Pacific region

Table A8.1a: Designation of coastal and marine protected and marine managed areas in French Polynesia. The categories given in this table represent the 6 categories for marine protected areas (MPAs) under the French Polynesian Code for the Environment, which are comparable to the 6 IUCN Protected Area Management Categories.

Name	Area (km²)	Category / Other Designation	Decree / Code (Year)	Managed by
Society Islands: 12	**180.3**			
Scilly Atoll Reserve / Réserve territoriale Scilly (Manuae)	113	IV / Territorial Reserve	arrêté n° 2559/ DOM (1971) arrêté n°1230 CM (1992); arrêté n°1460 CM (1996) ; arrêté n°1225 PR (2000)	Management committee[19]
Réserve territoriale Bellinghausen (Motu One)	9.6			
Lagon de Moorea	50	Ramsar n°1834	Ramsar Site 1834 (2008)	PGEM Moorea
PGEM[20] de Moorea (all 8 sites included in Lagon de Moorea): Motu Ahi, Maatea, Taotaha, Tiahura, Tetaiuo, Pihaena, Aroa, Nuarei	(10)	Different categories: II, IV, VI / PGEM	Arrêté n° 410 CM (2004)	Ministry for development
Rahui du Fenua Aihere / Teahupoo (Tahiti)	7.7	VI[21] / *rahui*	Arrêté n° 864 CM (2014)	Management committee, Commune de Taiarapu-Ouest (arrêté n°971 CM. 2014)
Rahui de Maiao	n.a.	*rahui*	n.a.	Local community
Tuamotu Archipelago : 18	**19,785.3**			
La biosphere de la commune de Fakarava: includes MaB, distributed over 7 atolls (total of 3837 km²) *Fakarava (4 sites, cat. III, IV, V, VI)* *Toau (3 sites, cat. IV, VI)* *Niau (2 sites, cat. Ib, VI)* *Kauehi (3 sites, cat. IV, VI)* *Aratika (2 sites, cat. IV, VI)* *Raraka (2 sites, cat. IV, VI)* *Taiaro (1 site, VI, incl. la reserve)* + *intracommunal maritime area (marine area between 7 atolls, cat. VI)*	19,785 (3837) *1535.5* *857.4* *97.7* *468.2* *289.4* *535.4* *53.5* *15,948.3*	Different categories: Ia, Ib, III, IV, V, VI / MaB Biosphere includes extension of transition zone (common marine area).	Arrêté n° 949 CM du 18/07/2016 replacing Arrêté n° 976 CM (2007) Arrêté n°951 CM du 18/07/2016 repeals Arrêté n° 950 - 956	Commune de Fakarava
Marquesas Islands: 1	**5529**			
Aire de gestion des habitats ou des espéces (AGHE) – 4 îlots de Marquises : Motu One, Eiao, Hatutu, Mohotani	5529	IV / Domaine public maritime (DPM)	Arrêté n° 2559 DOM (1971)	DIREN / SDR
Ua Pou *Rahui*	n.a.	*rahui*	n.a.	Local community
Austral Islands				
Rapa *Rahui*	n.a.	*rahui*	n.a.	Local community
Total French Polynesia: 31	**25,495**			

Sources: Government of French Polynesia (DIREN, Direction des ressources marines et minieres) Lexpol (service public d'acces au droit en Polynésie Française), Secretariat of the Pacific Regional Environment Programme (SPREP), Agence Française pour la Biodiversité, Protected Planet website, Ramsar website, UNESCO Man and Biosphere

Table A8.1b: Designation of regulated fishing areas in French Polynesia

Name	Area (km^2)	Type of site and Decree / Code (Year)	Comments	Managed by
Society Islands: 11	**24**			
Baie de Muriavai', Mahina - Tahiti	7.77	ZPR, Arrêté n°76 CM, 23/01/1997	No netfishing	DRMM
Hotu Ora, **Mahina** - Tahiti	0.3 (est.)	ZPR, Arrêté n°358 CM, 26/03/2015	**No fishing (NTZ*)**	DRMM
Baie de Matavai, **Arue** - Tahiti	1.4	ZPR, Arrêté n° 768 CM, 04/06/2007	Restricted fishing	DRMM
Baie de Taaone, **Pirae** - Tahiti	0.6	ZPR, Arrêté n° 1813 CM, 09/12/2003	No netfishing	DRMM
Moana na'ina'i, **Faa'a** - Tahiti	0.6	ZPR, Arrêté n°804 CM, 01/08/2006	**No fishing (NTZ*)**	DRMM
Tata'a, Nuuroa et Atehi, Punaauia - Tahiti	5 (est.)	ZPR, Arrêté n° 208 CM, 29/02/2016	Restricted fishing in all 3 zones	DRMM
Teva I Uta - Tahiti (Mataiea et Papeari)	2 (est.)	ZPR, Arrêté n°434 CM, 17/04/2015	Restricted fishing	DRMM
Teahupoo et Tautira, Pari - Tahiti	1.6 (est.)	Arrêté n°57 AA, 08/01/1962 & Arrêté n°391 AA, 15/02/1964	Conservation site	
Tetiaroa (lagon)	10.76	ZPR, Arrêté n°952 CM, 26/06/2014	Restricted fishing	DRMM
Motu Tapu - Bora Bora	<1 (est.)	Arrêté n°2256 AA, 11/09/1963 & Arrêté n°715 AA, 21/03/1964	Conservation site (Natural monument)	
Lagune de Faauna Rahi - Huahine	3 (est.)	ZPR, Délibération n°70-50, 18/06/1970	Restricted fishing	DRMM
Tuamotu Archipelago: 3	**130 (est.)**			
Tatakoto – Tuamotu (Hopue, Pokego/Tahuna Arearea/Kivakiva Tekoroa)	1 (est.)	ZPR, Arrêté n°388 CM, 20/10/2004 ; Arrêté n° 586 CM, 04/04/2014	No giant clam taking in all 4 zones	DRMM
Te Roto Uri Fa'ahotu, Rangiroa - Tuamotu	128 (est.)	ZRP, Arrêté n°1688 CM, 02/11/2015	Restricted fishing	DRMM
Reao - Tuamotu	0.163	ZRP, Arrêté n°238 CM, 04/03/2016	No giant clam taking	DRMM & commune Reao
Total: 14	**154 (est.)**			

* NTZ – Any type of fishing or extraction prohibited with the exception of starfish removal (preventive measures).
Source: Direction des Ressources Marines et Minières (DRMM, 2016)

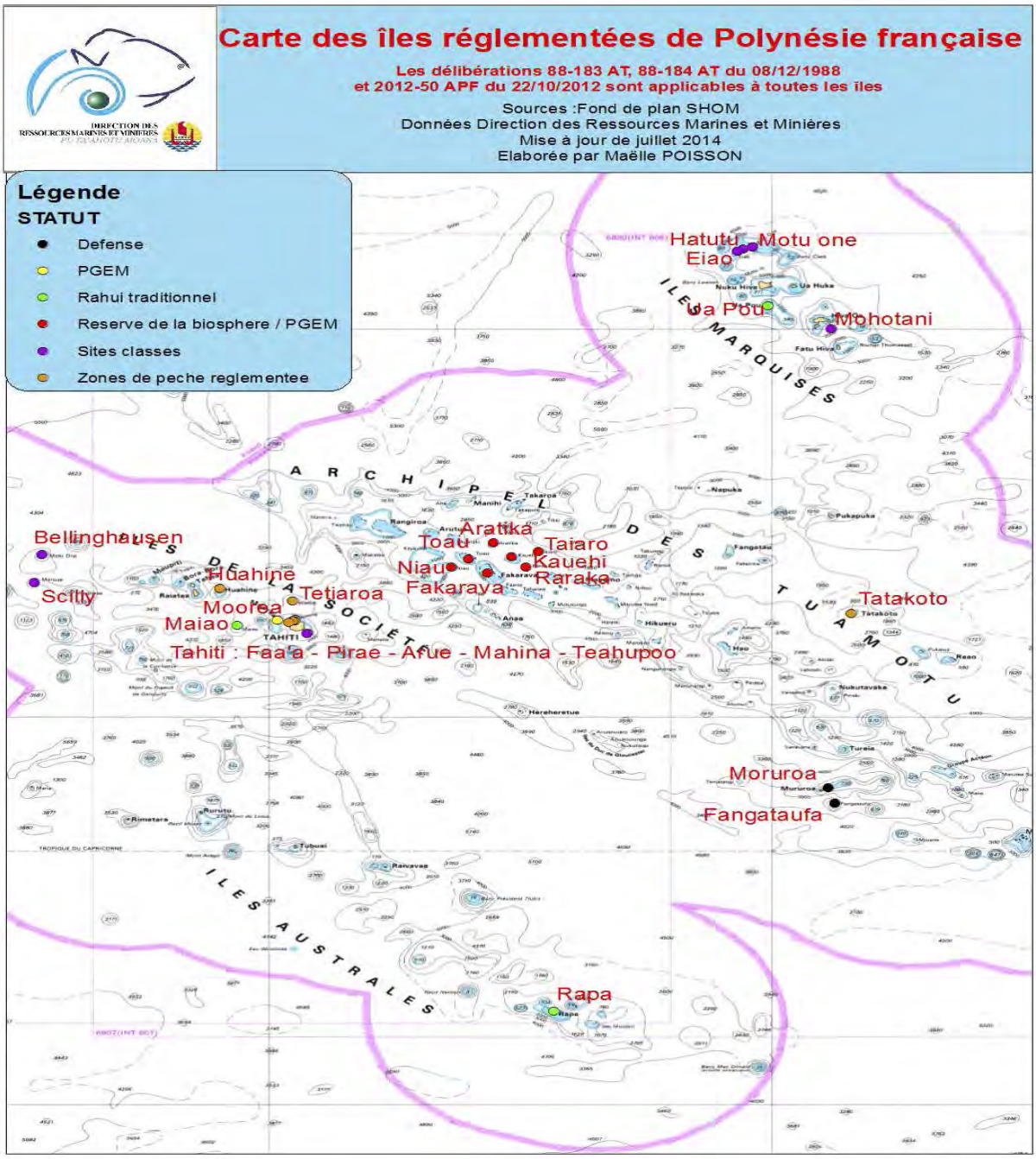


Figure 35: Map of regulated marine areas in French Polynesia. Source: Direction des Ressources Marines et Minières (DRMM, 2016)

Table A8.2: Designation of coastal and marine protected areas in New Caledonia

Name	Area (km²)	IUCN Category / Other Designation	Decree / Code (Year)	Managed by
Lagoons of New Caledonia World Heritage Site (WHS) includes 6 sites in territorial waters (except for Entrecasteaux – extends to EEZ): Zone Côtière Ouest *(Province Sud)* Grand Lagon Sud *(Province Sud)* Zone Côtière Nord-Est *(Province Nord)* Grand Lagon Nord *(Province Nord)* Atolls d'Entrecasteaux *(Province Nord)* incl. In Parc Naturel de la Mer de Corail Atoll d'Ouvea et Beautemps-Beaupre *(Province des Îles Loyauté)*	**15,743** (+12,871 km² buffer zone, not included in calculation)	WHS n°1115	2008	
Exclusive Economic Zone (12 – 200 nm)	**1,289,419**			
Parc Naturel de la Mer de Corail, includes zone des récifs d'Entrecasteaux	1,289,419	VI	Arrêté ,°2014-1063/GNC, 23/04/2013	Direction des affaires maritimes de la Nouvelle-Calédonie
Zone des récifs d'Entrecasteaux with	(3,504)	II	Arrêté n°2013-1003/GNC, 23/04/2013	
Atolls d'Entrecasteaux (Natural Park)	(3,240)			
Atoll de la Surprise (Reserve) with 3 islands (îlots) : Le Leizour, Surprise, Fabre Atoll de Huon (with île Huon) Atoll Petolas Atoll du Portail	(264)	Ia		
Territorial waters (up to 12 nm)	**1,786**			
Province Sud				
Grand port de Prony (incl. Ilot Casy, Aiguille de Prony)	12.9	IV	1993	Service de l'environnement; bureau pour l'environnement marin
L'Aiguille de la Baie de Prony Parc Provincial *(incl. In Grand Port de Pony)*	(0.13)	II	1993	
Îlot Casy Special Marine Reserve *(incl. In Grand Port de Pony)*	(1.45)	II	1993	
Épave de Humboldt Nature Reserve	0.13	IV	1996	
île Bailly Nature Reserve	3	V	1989	
îlot Larégnère Nature Reserve	6.64	V	1989	
Baie de Port Bouquet	4.3	VI	2010	
Zone du Grand Lagon Sud (Provincial Park, includes Yves Merlet) *(part of WHS)*	(7,574.2)	II / National	2009	
Yves Merlet Strict Nature Reserve *(incl.in Grand Lagon Sud)*	(170.9)	Ia	1970	
Grand Récif Aboré et passe de Boulari Reserve Naturelle	149.0	IV	1996	
îlot Amédée *(incl. in Grand Récif Aboré)*	(0.4)	VI	1981	
île Leprédour	2	IV	2009	
îlot Goéland (Seasonal strict nature reserve)	0.01	Ia	1995	
îlot Canard (Area of sustainable management of resources)	1.42	V	1989	
îlot Maître (Area of sustainable management of resources)	8.11	IV	1981	
Pointe Kuendu Area of sustainable management of resources	0.48	VI	1998	
îlot Moindé-Ouémié	0.5	VI	2010	

Name	Area (km²)	IUCN Category / Other Designation	Decree / Code (Year)	Managed by
îlot Signal (Nature Reserve)	2.44	V	1989	
îlot Ténia Special Marine Reserve	150	VI	1998	
Passe de Dumbéa	5.4	IV	2005	
Reserve de la passe Amïdïe Special Marine Reserve	27.8	V	1991	
Récifs de Sèche-Croissant Strict Nature Reserve	0.4	Ia	1994	
Zone Côtière Ouest Provincial Park *(part of WHS)*	(3,090)	II	2009	
Roche Percee and Baie des tortues Special Marine Reserve *(incl. in Zone Côtière Ouest)*	(120)	III	1957	
Ouano Nature Reserve *(incl. in Zone Côtière Ouest)*	(35)	IV	2004	
Poé Nature Reserve *(incl. in Zone Côtière Ouest)*	(31)	IV	1993	
île Verte Nature Reserve *(incl. in Zone Côtière Ouest)*	(2.1)	IV	1993	
îlot N'Digoro *(incl. in Zone Côtière Ouest)*	0	Ia	2009	
Province Nord				
Grand Lagon Nord *(part of WHS)*	(6,357)	(National designation)	2008	
Zone Côtière Nord-Est *(part of WHS)*	(3,714)	(National)	2008	
Hyabé-Lé Jao (Area of sustainable management of resources)	69.9	VI	2009	
Péwhane Reserve de Nature Sauvage *(incl. in Hyabé-Lé Jao)*	(3.7)	Ib	2009	
Whan-denece Pouarape Reserve de Nature Sauvage *(incl. in Hyabé-Lé Jao)*	(2.4)	Ib	2009	
Whanga lédane Reserve de Nature Sauvage *(incl. in Hyabé-Lé Jao)*	(6.9)	Ib	2009	
Kan-Gunu	37.5	VI	2014	
Hyega Parc Provincial	6.6	II	2009	
Dohimen Reserve de Nature Sauvage	37.1	Ib	2009	
Nekoro (Special Marine Reserve) Baie de Nékoro	1,260 15.9	Ia	2009	
Province des Îles Loyauté				
Atoll d'Ouvea et Beautemps-Beaupre *(part of WHS)*	(977)	(national)	2008	

Sources: Observatoire de l'environnement Nouvelle Calédonie (OEIL), Géorep (Portail de l'information géographique de la Nouvelle Calédonie), Secretariat of the Pacific Regional Environment Programme (SPREP), Agence Française pour la Biodiversité, UNESCO World Heritage Sites, Protected Planet website, Ramsar website

Table A8.3: Marine and coastal protected area designations for Pitcairn Islands

Name	Area (km²)	IUCN Category / Other Designation	Decree / Code (Year)	Managed by
Pitcairn Islands Marine Reserve (EEZ, excluding 12 nm territorial waters)	834,000	Not reported	Ordinance 13/09/2016	
Henderson Island (*mostly terrestrial)	(37)*	WHS n°487	1988	n.a.
Total Pitcairn: 2	**834,000 km²**			

* mostly terrestrial

Annex 9: Assessment of EU Overseas MPAs and MPA networks

Table A9: EU Overseas MPAs and MPA networks assessed against resilience criteria.

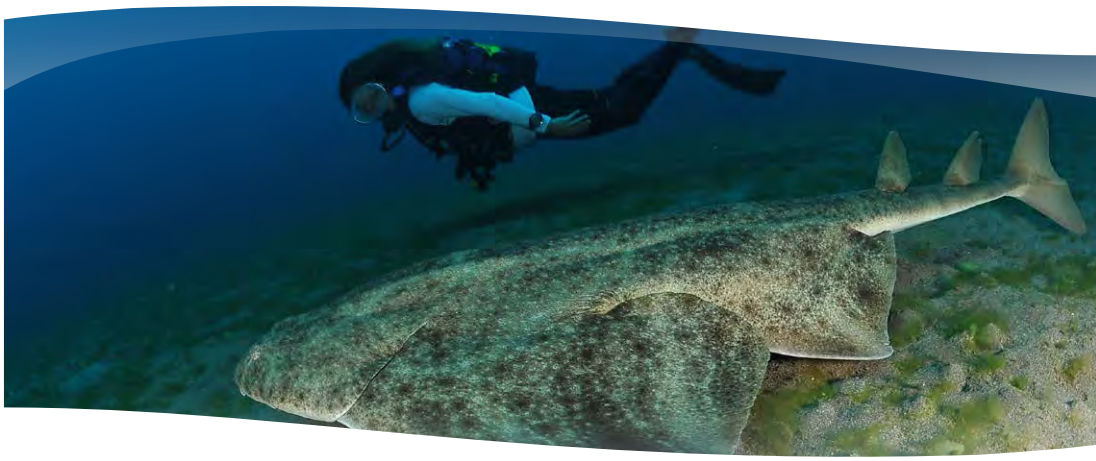
good support to resilience
medium support to resilience
low support to resilience
Insufficient data for assessment

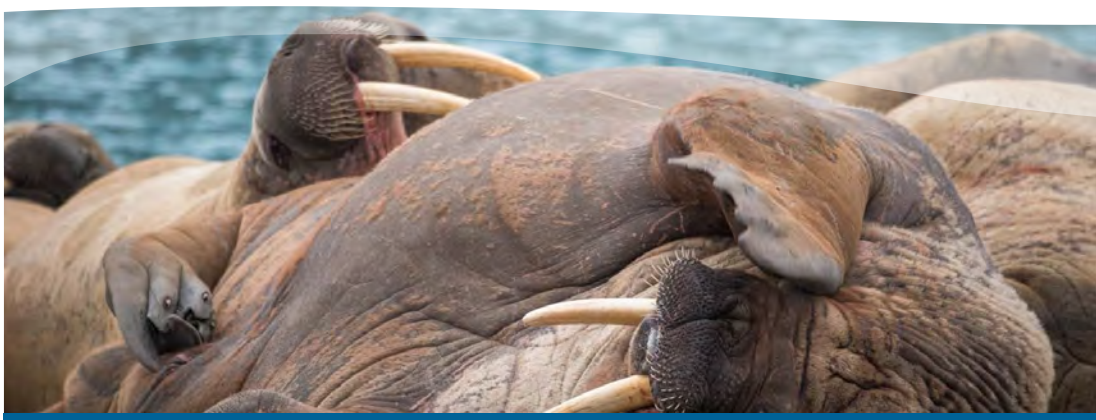
OR/OCT	Habitat replication	Management Effectiveness	Connectivity	Full protection of key sites	Issues / Comments	Project(s) or initiatives to assess and improve resilience
Tropical and sub-tropical habitats						
French Guiana (FR)					Existing MPAs (all coastal wetlands) do not guarantee the protection of enough key sites, especially regarding fishing reserves and marine mammals No current data on connectivity. Data on functional coastal and offshore areas to be further used in new conservation and sustainable management actions.	
St Barthélemy (FR)					No key habitats protected outside single reserve. Single reserve too small and isolated to guarantee connectivity and resilience.	
Martinique (FR)					Management plan for the new EEZ-wide marine park to be developed. No connectivity studies.	
Guadeloupe (FR)					Lack of knowledge to assess proper habitat replication although current location of PA includes various habitats. No connectivity studies.	BEST project on ecosystem services from sea grasses and large algae in the face of climate change.
Saint Martin (FR)					No key habitats protected outside single reserve. Single reserve too small and isolated to guarantee connectivity and resilience. No connectivity studies.	
Sint Maarten (NL)					No key habitats protected outside single marine park, which is too small and isolated to guarantee connectivity and resilience. No connectivity studies.	
Bonaire (NL)					No key habitats protected outside single marine park, which is too small and isolated to guarantee connectivity and resilience. No connectivity studies.	
Curaçao (NL)					No key habitats protected outside single marine park, which is too small and isolated to guarantee connectivity and resilience. Weak enforcement. No connectivity studies.	
Sint Eustatius (NL)					No key habitats protected outside single marine park, which is too small and isolated to guarantee connectivity and resilience. No connectivity studies.	
Saba (NL)					Lack of protection of key habitats and important sites outside coastal marine park. All other criteria in green due to the protection of Saba Bank. No connectivity studies.	
Aruba (NL)					Only one existing MPA - Ramsar Spanish Lagoon site recently included in National Parque Arikok Marine park under process of creation. No connectivity studies.	Project to establish Aruba's first multi-use marine park. Mangrove restoration project in Spaans Lagoen started 04/2017

OR/OCT	Habitat replication	Management Effectiveness	Connectivity	Full protection of key sites	Issues / Comments	Project(s) or initiatives to assess and improve resilience
Anguilla (UK)					No active management[22] and old MPA design not guaranteeing good representativeness and protection of key sites	Enhancing MPA management (OTEP funded project, assisted by TNC)
British Virgin (UK) Islands					Lack of offshore protection and connectivity data	Management plan currently developed for the network Climate change policy
Cayman Islands (UK)					Land-based pollutions. Lack of offshore protection. No connectivity studies.	OTEP project on assessing resilience of reef covered by current MPA system
Turk and Caicos Islands (UK)					Lack of data. MPA enforcement weakened by lack of funds	Efforts to increase resilience focus on improved knowledge on habitats and IAS, improved enforcement and coral reef restoration. BEST-funded RESCQ project (2016-2019) to restore coral reef quality and ecosystem services
Bermuda (UK)					"Virtually none of the ecologically-significant areas are currently protected through the MPA delineations" (BREAM, 2008). Lack of management on land and offshore protection	Baseline study on reefs and fish (2009-2011) recommended developing MSP approaches for enhanced conservation benefits & reef predator restoration to improve reef resilience (BREAM, 2016). Ongoing reef resilience monitoring project & MSP work for healthier marine ecosystems, led by BIOS (see Table 13)
Reunion Island (FR)					Protection is focused on a single habitat and provides very limited full protection Insufficient data on key sites in need of protection Land-based pollution sources	Regional Connectivity analysis be further capitalised for the development of a network
Mayotte (FR)					Lack of knowledge on habitats, key sites and connectivity. Management plan adopted but only partially enforced -further protection efforts beyond 12nm needed Recovery from past and recent coral bleaching events.	Mayotte Marine Park creation should have fostered resources to fill knowledge gaps but little done apart from regular surveys on reefs, marine mammals and turtles and some poaching; Coral monitoring expedition after 2016 bleaching to provide further data for biodiversity mapping and resilience of corals (IRD SIREME); Data on regional and sub-regional connectivity to be used further.
Scattered Islands (TAAF) (FR)					Lots of scientific knowledge has been gathered but not formalized yet in a PA network. Relatively recent management plan. Challenges with illegal fishing in the MPA. Recent order (March 2017) licenses mining for research purposes	Glorioso Marine Park creation based on strong scientific data and should result in a resilient PA network; project on establishing an integrated marine conservation network planned Monitoring of coral reefs and fish communities (2011-2013); COPRA project (BEST, 2017-2019) on seagrass conservation and management
BIOT (UK)					2016 coral bleaching event potentially killed large part of the coral reef in MPA	Expedition (04/2017), funded by Bertarelli Foundation assessed effects of 2016 coral bleaching. Follow-up project will assess changes in reef and marine biodiversity

OR/OCT	Habitat replication	Management Effectiveness	Connectivity	Full protection of key sites	Issues / Comments	Project(s) or initiatives to assess and improve resilience
French Polynesia (FR)					Except for MAB reserve, current PAs too small and isolated to address any of the resilience criteria satisfactorily	
New Caledonia (FR)		*			Habitat replication in existing local MPAs could be further improved. Consultations for management plan of Marine Park (designated in 2014) launched (Feb 2017). Management effectiveness yet to be seen. *The Lagoons under World Heritage were assessed by IUCN's World Heritage Outlook as effectively protected and managed.	Studies undertaken to assess connectivity between MPAs Current management aims to protect some coastal habitats such as mangroves through mitigation of land-based threats.
Wallis and Futuna (FR)					No MPA established Unsustainable fishing practices and land-based pollution	Marine Spatial Management Plan study (2007) provided useful data for MPA creation. New Biodiversity and Climate Change adaptation strategy prioritize creation of MPA and marine resource management plan
Pitcairn (UK)		*			Very large no-take MPA, only allowing local subsistence fishing within 12nm radius – surveillance and enforcement difficult. *Management effectiveness of 2016 designated full-EEZ MPA to be seen. The WHS Henderson Island was assessed by IUCN's World Heritage Outlook as generally sufficiently well-protected but there are significant threats to seabird populations by invasive rats on the island.	Long-term surveillance plan under development
Clipperton (FR)					It was suggested to create a larger MPA, covering 100nm around Clipperton	French Government announced support for scientific mission in 2017[23]
Ascension (UK)	*			**	*Official MPA declaration pending but currently closed zone (50% of EFZ) with a wide range of habitats (incl. seamounts) justifies medium. **Key species protected under Wildlife Protection Ordinance but not all key sites (inshore KBAs). Lack of data and management; ongoing marine tracking project to strengthen evidence base for policy and management and data collection to protect inshore areas (<12nm) from recreational fishing.	Habitat and biodiversity mapping underway (Darwin) to improve protection and management;
Saint Helena (UK)					Management effectiveness of 2016 designated full-EFZ MPA to be seen	Results from marine biodiversity mapping project (2012-2014) used to establish marine management plan
Circumpolar Habitats						
French Southern Territories (TAAF) (FR)					Entire EEZ protected and key sites designated as NTZs. Management effectiveness of 2017 designated full-EEZ MPA to be seen	Programme on knowledge improvement in the 2nd management plan (2017-2027). BEST project identified penguins habitats for the design of new MPAs
SGSSI (UK)					The 13% of EEZ South of the 60°S (not included in MPA) are a *de facto* NTZ. All fishing regulated in accordance with CCAMLR system and most revenue from fishing licenses is invested in fishery protection and research.	OTEP project (2010/2011) identified important, marine areas to establish representative MPA network; Darwin+ project (2013-2015) to define region-wide candidate special protection MPAs; BEST project identified penguins habitats for the design of new MPAs
Falklands (UK)		-			Currently only 2 Ramsar sites (not actively managed) and several IBAs, but no offshore protection	BEST project on Sei Whales to define key sites for future marine spatial planning

OR/OCT	Habitat replication	Management Effectiveness	Connectivity	Full protection of key sites	Issues / Comments	Project(s) or initiatives to assess and improve resilience
South Orkney (no sovereignty claims)					Lack of coastal protection. High seas MPA.	CCAMLR pursued studies since 2005 to set up a network of MPAs in the Southern Ocean
Greenland (DK)					Lack of key areas protection outside the park and reserve; limited data on offshore marine areas. *No management plan, no comprehensive monitoring in Greenland National Park. IUCN's World Heritage Outlook assessed that the Ilulissat Icefjord (WHS) appears to be well managed.	Biodiversity report in preparation. BEST project on benthic ecosystems
Warm Temperate Habitats						
Canary Islands (ES)					Lack of deep habitat protection, which is most of the marine area of the Canary Islands. *Good for shallow coastal habitats, low for deeper coastal habitats (circalitoral) and deep sea habitats	BEST project on ecosystem services from sea grasses and large algae in the face of climate change. Ongoing study on marine resilience and resistance to anthropogenic impacts; Evaluation of benthic communities as carbon sinks (Botanica Marina, ULL[24]); PELAGOS project (see Azores);
Madeira (PT)					Lack of data on connectivity, lack of funds for effective management and lack of protection for key offshore areas	PELAGOS project (see Azores); LIFE projects to recover species and habitats around several islands; GESMAR project to develop a strategy for Macaronesian coast and marine environment integrated management;
Azores (PT)					Lack of management effectiveness and connectivity data; lack of coordinated stakeholder involvement. *Good for shallow coastal habitats, low for deeper coastal habitats (circalitoral) and medium/low for deep sea habitats	BEST project on ecosystem services from sea grasses and large algae in the face of climate change. PELAGOS project (2007-2013) for coordinated management of marine resources in Macaronesia (Interreg-MAC); ATLAS project - Trans-Atlantic assessment and deep-water ecosystem-based spatial management plan; Programs on marine invasives and biodiversity of coastal environment;
Cold Temperate Habitats						
St Pierre & Miquelon (FR)					Lack of data and management tools for marine biodiversity protection	BEST project on seabird feeding grounds
Tristan da Cunha (UK)					Currently only coastal/island level protection due to lack of data Data on marine environment and resources was collected to support the establishment of a management plan. *IUCN's World Heritage Outlook raised some concern about the overall effectiveness of the management system and legal framework enforcement of the WHS Gough and Inaccessible Islands.	Darwin+ project (2013-2015) collected data on marine environment and resources for management plan





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