IUCN

MARINE NEWS

GLOBAL MARINE AND POLAR PROGRAMME

ISSUE 14 | September 2017

COOK ISLANDS

ROSS SEA

Big gains for Marine Protection...

What more can be done?

Ocean warming, deoxygenation, ocean acidification, marine plastics... Tackling major ocean threats

MARINE NEWS

Issue 14 - September 2017

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Back issues available at: http://www.iucn.org/theme/marine-and-polar/contact/newsletter

Front cover: Aitutaki, Cook Islands
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Editorial Photo: © Eric Mathon, Palais Princier

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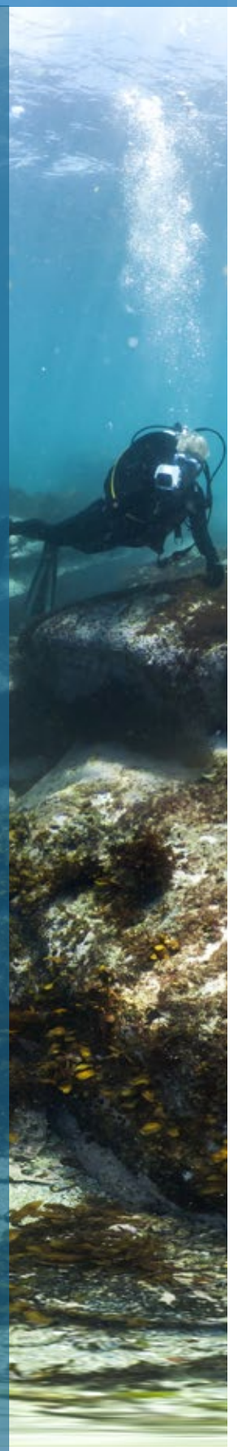
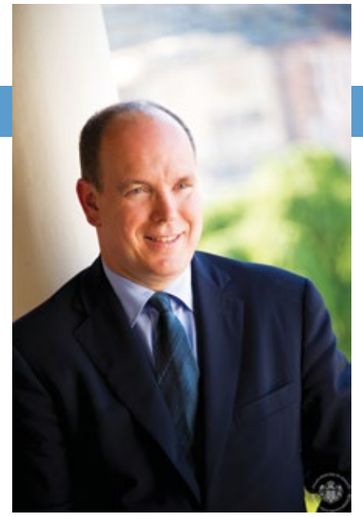


Editorial



HSH Prince Albert II of Monaco:

> "I plead the cause of marine protected areas whenever I am given the opportunity."

For centuries, the seas have eluded our understanding and our knowledge. We used to think humans were vulnerable and the ocean was immutable. We now understand the importance of the oceans, and we know the extent to which our mistakes are damaging them.

In order to reconcile humanity and the sea, we in Monaco are working on the development of marine protected areas (MPAs). My Government and my Foundation have made a full commitment to the Mediterranean, in partnership with other countries and donors, through a trust fund that we set up, whose first projects, in Morocco and Tunisia, were given support in 2016. We are also upholding the implementation of many MPAs in the world, in Cambodia, Madagascar and Palau. I personally plead the cause of marine protected areas, the ideal meeting point between humans and the sea, whenever I am given the opportunity.

Last June, the UN hosted its first World Conference on the Ocean, in New York, linked to the climate issue, and at this event it supported, in the form of a "call to action", the implementation of sustainable development goal number 14 (SDG 14) which aims to "conserve and sustainably use the oceans, seas and marine resources for sustainable development". This conference was the first of its kind to discuss the problems that the oceans are facing, from coral bleaching to plastic pollution, as well as overfishing and the rise in water levels as a result of climate change.

In New York, I was particularly pleased that we are finally resolved to lay down rules to meet the challenges of ocean preservation. We now know the tremendous opportunities that the oceans offer, as long as we prove capable of protecting them and exploiting them sustainably.

After the World Congress of Marine Protected Areas in Chile, IMPAC4, I shall attend, on 5th and 6th October this year, the "Our Ocean" conference, organised by the European Union in Malta. This is a major event launched by John Kerry three years ago and will highlight the commitments of States and civil societies - at the forefront of which I am delighted to see the IUCN and some NGOs - in support of the sea.

HSH Prince Albert II of Monaco

FONDATION PRINCE ALBERT II DE MONACO

IUCN

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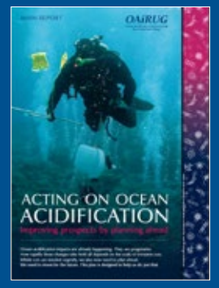
Hand in hand towards a sustainable future

Over 10 years ago, HSH Prince Albert II of Monaco set up a foundation with a simple mission: To establish partnerships in order to carry out projects and implement concrete activities in its priority action areas, to raise both the public's and authorities' awareness of the impact of human activities on the natural environment and to encourage more environmentally-friendly behaviour, to promote and encourage outstanding initiatives and innovative solutions by awarding prizes and grants. Through its intimate partnership with IUCN over the last seven years, the Prince Albert II of Monaco Foundation has collaborated on numerous projects encapsulating a range of themes that have made a dramatic footprint into the sustainable future that both parties wish to be a part of. A summary of these projects, in addition to two currently ongoing, is presented below. IUCN would like to thank all at the Foundation for their continued support for our work and for the generous efforts of HSH Prince Albert II.



Ocean Acidification

In conjunction with IUCN, among others, the Ocean Acidification International Reference User Group (OAiRUG) produced a comprehensive report on the current crisis that is Ocean Acidification. A detailed breakdown of the facts and figures that currently summarise the state of the world's oceans was accompanied by a list of key aims to secure the following outcomes by 2025 including an ocean acidification forecasting system, appropriately scaled computational models to predict ocean acidification effects, comprehensive, coordinated, networked national science programmes, better understanding of the impacts of ocean acidification on human health, and a fully coordinated international ocean acidification outreach, education and communication effort.

As part of an effectively-resourced and managed coordination network for international and regional science, this work is conducted in full cooperation with the AMAO (Association Monégasque sur l'Acidification desOcéans), of which IUCN is a member.

Aquaculture and Marine Protected Areas

In the framework of meeting the Sustainable Development Goals on food security, IUCN produced a report on MPAs and Aquaculture, after 2 years of work conducted with the support of the Prince Albert II Foundation and in collaboration with the Monaco Blue Initiative. The report concludes that creating a better understanding of aquaculture and its impacts, as well as of the role and importance of MPAs, will bring benefits to all and will trigger new innovative projects and perspectives for the common good.

Arctic

Writing the preface for the report, HSH Prince Albert II himself explains the dire situation facing the Arctic and the numerous threats that will continue to cause irrefutable damage unless serious action is taken immediately. Building on the findings of an expert workshop, the report identifies unique marine features and species in the Arctic and concludes by presenting a number of sites worthy of consideration for nomination as UNESCO World Heritage Sites. Produced in both English and Russian, it is expected that the report will heighten awareness and future protection of these vulnerable areas.

These include the Svalbard Archipelago (Norway), Quttinirpaaq (Canada) and Asaivissuit (Denmark).

Blue Carbon

The FPA2 supported IUCN's work to improve our global understanding about and inclusion of so-called coastal (blue) carbon sinks into climate change policy and coastal management responses, for example in Scotland. IUCN and partners were able to produce the National Blue Carbon Policy Assessment Framework, allowing countries to assess policy and management measures which are most suited for their coastal carbon ecosystems as well as submit peer-reviewed articles such as *Clarifying the role of coastal and marine systems in climate mitigation into Frontiers in Ecology and the Environment*. The FPA2 Blue Carbon work also supported capacity building and training workshops in developing countries as well as outreach at international conferences such as those related to the UNFCCC.

Islands, MPAs and Climate Change

Still ongoing, this project aims to develop, improve and implement adaptation and resilience strategies to climate change for the coastal ecosystems surrounding islands to ensure island communities take better account of not only the risks to these ecosystems but also to their assets. This project focuses on the island of Corsica. See page 23 for more information.

Monaco Blue Initiative (MBI)

Every year, the FPA2 and the Oceanographic Institute (Fondation Albert Ier) organise a one-day event about key topics centered around Ocean Conservation. About 200 high-level participants discuss solutions and agree on actions covering multiple conservation issues such as Climate Change, High Seas or Marine Protected Areas. IUCN has served as an advisor for the MBI since its launch in 2010.

Beyond Plastic Med (BeMed)

Considering the impact of plastic pollution on marine ecosystems and resources, as well as on the quality of water and human health, the Prince Albert II of Monaco Foundation, Surfrider Foundation Europe, Tara Expeditions Foundation, Mava Foundation and IUCN decided to join forces within the "Beyond Plastic Med" (BeMed) Task Force, in order to mobilise and raise the awareness of civil society through concrete actions. In June 2016, BeMed launched a call for micro-initiatives involving all the countries in the Mediterranean Basin, in order to provide financial support to local projects aiming to reduce the plastic pollution on shores and in the sea.

© Evaline Cho

In preparation for the implementation of Sustainable Development Goal 14 – Conserve and sustainably use the Oceans, Seas and Marine Resources - the United Nations Ocean Conference took place in June of this year in New York. Co-hosted by the Governments of Fiji and Sweden, the conference aimed to:

- Build on existing successful partnerships and stimulate innovative and concrete new partnerships
- Involve all relevant stakeholders to assess challenges and actions taken towards implementation of SDG 14
- Share experiences gained at the national, regional and international levels in the implementation of SDG 14
- Provide input to the high-level political forum on sustainable development, including on opportunities to strengthen progress in the future

All ocean stakeholders were asked to register Voluntary Commitments (VC). At the end of the conference, there were 1,372 in total, with most coming from governments and then NGOs. IUCN was mentioned in over 50 of those, including some where IUCN is one of the lead implementers. The success of these VCs will have to be measured in a few years' time.

IUCN was pleased to see many of its positions reflected in the Conference Outcome document: Our Ocean, Our Future: Call for Action. A couple of highlights include a strong commitment to oceans and climate as well as closing the tap on plastics entering the marine environment.

IUCN organised one main side-event, "From Problems to Solutions: stewarding our oceans between major climate change impact and nature based solutions to adaptation and mitigation". The government representatives highlighted the role of nature-based solutions in their efforts to adapt and mitigate climate change. IUCN was also a co-organizer of many other side-events. Jointly with WWF Germany, IUCN presented, for example, new work supported by the German BMZ to protect and restore mangrove ecosystems (see picture) and page 8 and 9.

Blue Action Fund - a focus on results on the ground

The Blue Action Fund is a conservation trust fund created by BMZ (The German Federal Ministry for Economic Cooperation and Development) and KfW. Dedicated to supporting marine protected areas and the most sensitive coastal areas of Africa, Latin America and Asia. The Blue Action Fund plans to work through a programme of medium- to large-sized grants to NGOs working on marine and coastal conservation. The overall goal of the programme will be to contribute to reducing the dramatic loss of marine biodiversity and stabilizing incomes in coastal fishing communities. IUCN has been working with BMZ and KfW throughout 2017 and, through its diverse membership and network of envionmental expertise, hopes to play a major role in the future roll-out of the Blue Action Fund.

International
Marine Protected Areas
Congress Chile 2017

IMPAC4

4th-9th September 2017

The 4th International Marine Protected Areas Congress (IMPAC4) will be a global gathering of the world's leading experts and practitioners on all aspects of marine protection. The aim of the Congress is to address the intricate nature of ocean-human interactions and the benefits of MPAs. Acting as one of the final milestones before 2020, the deadline for achievement of the Aichi Targets, this congress is one of the most important that the IMPAC congress series has seen.

IUCN will have a strong presence at La Serena and will host a pavilion with a full programme of events centred around six MPA-related themes:

1. MPA Networks
2. Large MPAs
3. MPA Funding
4. Blue Solutions
5. MPAs and Technology
6. MPAs and People

With the hope of inspiring future generations of MPAs leaders and high levels of youth involvement, this congress also aims to boost innovative ideas and community-based initiatives as well as increasing networking on both a regional and global scale. Deeper discussions will be held on emerging issues such as:

- The role and contribution of MPAs to ecosystem and social resilience, ocean recovery and rebuilding of fisheries
- Conservation in polar and temperate seas
- MPAs and climate change
- MPAs and marine spatial planning
- MPA challenges in the developing world
- The protection of Areas Beyond National Jurisdiction (ABNJ)

IUCN will also participate to the high-level segment will be held on September 9. This event will bring together global decision makers and environment ministers to craft a *Valparaiso Declaration* that will highlight aspirations for meeting Aichi Target 11 and Sustainable Development Goal 14.

Marine Protected Areas: Bringing the people and ocean together

Partners:

Donors:

GMPP 2017-2020 programme highlights

Global Coasts

Current thematic priorities

- Protect EU Overseas territories
- Coastal ecosystem resilience
- Research & capacity building of local practitioners
- Foster a global network of marine protected areas
- Promote sustainable aquaculture and fish feed solutions

Main projects

- **EU Overseas** (European Union): A sustainable funding mechanism to support on-the-ground activities covering ecosystem services valuation; species conservation; invasive species control; capacity building for improved governance & resilience to climate change; & designation of protected areas
- **Mangrove restoration** (Luxembourg/BMZ/KfW): Work with international partners to promote sustainable financing of coastal ecosystem restoration and international cooperation to implement best-practice restoration techniques.
- **Maldives (USAID)**: Enhance local reef monitoring & science education to support marine spatial planning & protect threatened marine species

Global Threats

Current thematic priorities

Threats: Ocean warming, ocean acidification, marine plastics, deep sea mining, deoxygenation

Activities: Promote nature-based solutions to the challenges of climate change, disaster risk reduction & food security, “Science to governance” policy guidance, Review of ocean risks partnering with private sector

Main projects

- **Ocean Acidification:** Host a high-level scientific committee to deliver latest knowledge, to apply science to resource management issues & provide sound policy advice
- **Marine microplastics:** Build a cross-sector coalition to conduct research and seek innovative & practical solutions to the problem of marine plastics
- **Blue carbon:** Scope, facilitate & generate recognition of the role of blue carbon in countering climate change whilst delivering ecosystem services of critical importance

Global Commons

Current thematic priorities

- Design a legally-binding Implementing Agreement for conservation & sustainable use of marine biodiversity beyond national jurisdiction for international ratification
- Enhance the scientific knowledge of seamounts & ridge ecosystems to stimulate improved management

Main projects

- **South West Indian Ocean project** (FFEM): Conservation & sustainable exploitation of seamount & hydrothermal vent ecosystems of the South West Indian Ocean in areas beyond national jurisdiction. The project seeks to explore regional approaches to ocean governance
- **Polar Conservation**: Support designation of new protected areas in both polar regions using tools such as World Heritage
- **Sargasso Sea Commission**: Hosted & partnered by IUCN & pioneering an intergovernmental mechanism for the Sargasso Sea to keep its health, productivity & resilience under continual review

MANGROVES – A LIFE-SAVING COASTAL ECOSYSTEM

Scaling up protection and restoration for achieving the SDGs

Coastal areas are the crucial interface between the two major elements that cover our planet. They provide ground for various ecosystems and biodiversity. In developing countries, many coastal communities live within the vicinity of these areas and rely on the resources of marine and coastal ecosystems to secure food and income. Ecosystems close to the shore are, however, under great pressure from varying economic interests and development needs.

Almost half of the global population lives within a distance of 100 km from the coast. Urban development is concentrated at coastal locations due to trade traffic and fishery. In addition, coastal areas serve a variety of recreational purposes, attracting millions of tourists who leave behind their environmental footprints. As a consequence, massive utilization pressure bears down on coastal ecosystems, which are easy to exploit and can be competitors in terms of land use – as in the case of mangroves. This has led to a continuous overexploitation, degradation and destruction of the world's mangrove forests over the past decades.

A global commitment to conserve, protect and restore mangroves is needed to safeguard these unique ecosystems. The German Federal Ministry for Economic Cooperation and Development (BMZ), World Wide Fund for Nature (WWF) and the International Union for the Conservation of Nature (IUCN) join their forces through a new cooperation on mangrove conservation to support global efforts towards the long-term, sustainable management of these precious ecosystems. IUCN and WWF, together with Conservation International, the Nature Conservancy and Wetlands International, are through their efforts also proudly supporting the newly formed Global Mangrove Initiative.

Mangroves secure coastal livelihoods

Mangroves are salt tolerant plants that cover more that 15 million ha of tropical coastal areas worldwide. They are some of Earth's most climate resilient and productive flora and host uniquely biodiverse ecosystems on which the local communities thrive. Conserving and restoring mangroves plays a crucial role in achievement of the Agenda 2030 of the United Nations and therein defined Sustainable Development Goals (SDGs) – above all SDG 14 on the protection and sustainable use of our oceans and marine resources.

Biodiversity and productivity

With their high nutrient supply and ability to provide protection for species, mangroves not only play host to endangered mammals such as the Bengal tiger, but also provide an important nursery ground for fish and crustaceans. The symbiotic relationship between coastal and marine ecosystems, for example coral reefs and seagrass beds, occurs via the mangroves in the form of migration and nutrient exchange. Mangrove protection is thus vital for the prevention of biodiversity loss, outlined by SDG 15.

Climate change mitigation and adaptation

Mangroves provide a unique opportunity to tackle SDG 13 (climate change adaptation and mitigation) with the ability to capture and store up to 5 times more carbon that terrestrial forest, and to 'grow up' as sea levels rise by trapping sediments in their root systems. Furthermore, developing coastal states and small islands are benefited by their ability to reduce wave height by up to 16% per 100m and storm surge depth by 5-50cm per km.

Food and income security

Through forestry products such as mangrove wood and charcoal, in addition to direct or indirect (through food chain links) fishery activity, mangrove forests provide at least US $1.6 billion each year. Small scale fishery, like that taking place in mangrove forests, accounts for 90% of the people working in fishery worldwide and thus the area and status of the mangroves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mangroves plays a key role in the food and income securities of the developing countries in which this takes place. For this reason, SDGs 1, 2 and 8 (end poverty and hunger, foster decent work and economic growth) rely on the preservation of mangroves.

The global destruction of mangroves continues

Nearly half of all mangrove forests have disappeared since the mid-twentieth century. The global loss rate of mangroves is up to 5 times higher than that of terrestrial forests and as such, the destruction of mangrove forests is responsible for 10% of global CO_2 emissions caused by deforestation, 240 million tons of CO_2 per year, with loss rates highest in South-East Asia, the Caribbean, the Pacific and Sub-Saharan Africa. Only 25% of remaining mangrove areas worldwide are managed as part of an estimated 1,200 protected areas. Although many international and local organizations, e.g. in Puerto Rico, Brazil and Bangladesh have put on-going effort into the protection and restoration of mangroves over the past decades their successes do not counterbalance the overall mangrove cover decrease, and the situation is still in a desperate state.

BMZ, WWF and IUCN engagement for mangrove protection

Currently, German development cooperation supports about 40 projects in more than 15 countries that contribute to the protection or restoration of mangroves. This engagement tackles e. g. the improvement of the institutional settings, the introduction of integrated planning approaches or the establishment of coastal protected areas. WWF's existing activities on mangrove restoration and protection includes active work with local communities in more than 20 countries. WWF is also active in global partnerships on mangrove conservation including the Partnership on Coastal Resilience and the International Partnership for Blue Carbon). The conservation and restoration of mangroves play a significant role in the climate mitigation efforts of IUCN, such as through the Blue Carbon Initiative (see page 8) and its work on Forest Landscape Restoration and Ecosystem based Adaptation (EbA). IUCN supports governments of Asian mangrove countries through investing and managing coastal ecosystem conservation as part of the "Mangroves for the Future" (MFF) initiative.

SAVE OUR MANGROVES NOW!

With a view to enhancing awareness, commitment and cooperation for mangrove protection among partner countries, donors and civil society, BMZ and its partners are beginning a new cooperation on mangrove conservation.

Major goals:

- The international community is aware of the importance of mangroves for our planet.
- Mangrove protection and restoration are an integral part of relevant international agreements.
- The work of existing initiatives on mangroves is broadly supported and up-scaled.
- Mangrove protection in the Western Indian Ocean Region is enhanced.

Fields of action:

1. Embed a global goal for mangrove protection in political agendas
The GMA set a target of increasing the global area of mangrove habitat by 20 % of current extent by 2030. BMZ, WWF and IUCN support this target and will work towards its integration in relevant international agreements as well as national political agendas. Raising awareness among political decision-makers about the importance of mangroves on a global scale is part of our core Ideology.

2. Pool leading expertise and enhance knowledge-sharing
To foster synergies, existing mangrove protection efforts of relevant stakeholders such as the GMA will be supported. Enhanced knowledge exchange and the closure of existing knowledge gaps through the elaboration of target-oriented studies will be a major contribution of the new cooperation. The establishment of a joint online platform will simplify access to information and collected knowledge on mangrove conservation – for practitioners as well as for political decision-makers.

3. Identify, apply and disseminate best practices in the Western Indian Ocean
The newly initiated cooperation will apply best practices, develop regional networks as well as mainstream mangrove protection into national development plans and Nationally Determined Contributions (NDCs) under the Paris Agreement in the Western Indian Ocean Region. Thereby, BMZ and its partners aim at the development of local, national and regional capacities and the improvement of political framework conditions for the effective protection and restoration of mangroves.

For more information, please contact Dorothée Herr (Dorothee.Herr@iucn.org) or Julika Tribukait (julika.tribukait@wwf.de)

Investing in Blue Natural Capital

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As climate change gathers pace there is an urgent need to explore new ways to finance the conservation of biodiversity and ecosystem services we as a society rely upon. The IUCN and the Ministry for Sustainable Development and Infrastructure of Luxembourg are exploring means to engage with private and institutional investors to increase the resilience of low lying coastal developing countries to climate change. By developing and investing in projects that conserve and restore coastal ecosystems, climate change adaptation and mitigation services can be provided together with a host of additional benefits including increased biodiversity and sustainable local livelihoods.

The world's coasts are some of the most densely populated places – with half of the world's population living within 100 km of the sea. Historically, people were attracted to settle by the coasts for the abundance of food resources from the rich coastal waters and flat and fertile river flood plains, yet these populations are increasingly affected by salt water flooding from storm surges and rising sea levels driven by climate change. Worryingly, both of these threats are projected to intensify over time, placing populations on low lying tropical islands where there is limited opportunity to migrate inland at particular risk. There is therefore a rapid need to find solutions to help coastal communities adapt to climate change. Coastal ecosystems – including mangrove forests, salt marshes and sea grass meadows – act as cost-effective shields against powerful waves caused by tropical storms, as their flexible vegetation absorbs the wave energy and protects the coastline from erosion. By trapping silt in their vegetation they can even form new land over time and can therefore buffer against sea level rise. These ecosystems also provide important resources for local people, including timber, and food, by acting as a nursery grounds for reef fishes and providing a habitat for a number of other edible organisms including molluscs and crabs. Intact, functioning ecosystems are therefore the lifeblood of coastal communities. Recent studies also show that the vegetation and soils of coastal ecosystems store more carbon on a per hectare basis than tropical forests. The conservation and restoration of such 'blue carbon' ecosystems can therefore help reduce the severity of future climate change by capturing and storing carbon from the atmosphere, and by avoiding carbon emissions from their degradation.

Despite recognition of the critical role that coastal ecosystems play in improving the resilience of coastal communities to climate change, the demand of competing land uses such as agriculture, aquaculture and coastal development has driven the destruction of natural coastal ecosystems around the tropics. Estimates suggest that at least 35% of tidal marshes and 29% of seagrass meadows have been lost, together with 30-50% of mangroves, leaving coastal countries and particularly small island developing states vulnerable to rapid climate change.

The protection and restoration of coastal ecosystems is therefore critical in the drive to create climate resilient communities and meet the sustainable development goals (SDGs) including ending hunger and poverty (SDGs 1 and 2), providing climate action (SDG 13), and supporting life on land and below water (SDGs 14 and 15). To help meet

Harvesting crab in mangroves © TNC

these goals and expand efforts to restore these ecosystems, the IUCN and the Ministry for Sustainable Development and Infrastructure of Luxembourg are developing novel means to unleash opportunities in the blue natural capital economy. This collaboration aims to develop and provide technical support to blue natural capital projects which provide ecosystem based climate change adaptation and mitigation services to the benefit of both biodiversity and local livelihoods.

Tapping into private investment offers a serious opportunity to catalyse the conservation of natural ecosystems and biodiversity. Efforts to reverse the loss of global biodiversity have been hindered by a substantial shortfall in the availability of finance for conservation projects. Yet there is substantial demand from private (individuals) and institutional (e.g. pension funds, insurance companies) investors for investments which deliver both financial returns and a positive environmental or social return – so called 'impact investments'. Estimates suggest that such private finance could mobilise up 200-400 billion US dollars for nature conservation . There is thus a crucial need for a facilitator to unlock this private finance by matching unmet demand from the investment community for conservation investments by developing and supplying a robust pipeline of investment opportunities targeting coastal conservation, climate change adaptation and sustainable development. The technical support envisaged by the IUCN and the Ministry for Sustainable Development and Infrastructure of Luxembourg aims to meet this need.

Tackling climate change and restoring coastal ecosystems whilst supporting local economies will require an innovative approach to coastal management. A unique feature would be to integrate coastal ecosystem restoration activities within a holistic coastal sustainable development framework, including renewable energy generation, novel data technologies and identification of supplementary income sources from healthy coastal ecosystems.

For example, the degradation of mangrove forests is in many places driven by aquaculture development, collection of firewood and timber as an energy source and lack of alternative employment opportunities for coastal communities. This destroys fish habitat, decreasing fisheries catches and therefore threatening local incomes and food security. The remaining mangroves are placed under increasing pressure as people shift to more extensive uses (e.g. more timber extraction), and overuse natural resources from these ecosystems. Communities are left with an unsustainable fishing and aquaculture industry, limited protein sources, poor employment opportunities, and vulnerable to extreme weather events and climate change. Conversely, investment in renewable energy and efficient cook stoves removes the need for mangrove timber extraction, helping these ecosystems regenerate naturally and ensuring supplementary restoration activities are not hindered by competing uses. Expanding mangrove forests increase the nursery and breeding habitats for fish species, supporting higher fisheries catches, providing food and jobs, and disincentivising further mangrove degradation. Training and assistance given to fishermen can certify their catches, allowing them to receive a premium for their fish thus reinforcing and increasing the value of healthy coastal ecosystems to their trade and food security. A resilient and resistant coastal system, integrating social and environmental elements, is created.

Such an approach provides not only win-win as well as no-regret outcomes for coastal communities and ecosystems, but also generates a compelling investment narrative as a diversity of regular income streams are generated, highly valued by private investors. By developing projects which strengthen coastal resilience via natural ecosystems, the IUCN and the Ministry for Sustainable Development and Infrastructure of Luxembourg will help meet international climate change, sustainable development and biodiversity targets in an effective manner, and provide investors with a triple return – on capital, on biodiversity conservation and on sustainable livelihoods. Additional partners for the effort are currently being sought.

Article written by James Smith. For more information please contact Dorothée Herr (Dorothee.herr@iucn.org).

Seagrass meadow in the Mediterranean.
Photo: © Carl Gustaf Lundin

Implementing blue carbon initiatives

© Duke University

For climate change policy to be effective, carbon emissions as well as sequestration rates within natural ecosystems need to be considered. The potential of coastal blue carbon ecosystems, that is coastal carbon-rich ecosystems such as mangroves, saltmarshes and seagrasses, are still being overlooked in national carbon accounting efforts.

These coastal blue carbon systems sequester and store CO_2 in the form of biomass at much higher rates per unit area than terrestrial forests. The degradation of such ecosystems as a result of insufficient protection parameters results in mass leakage of this stored carbon into the atmosphere and oceans. The threats to blue carbon are well known, but difficult to solve: lack of enforcement, human and financial constraints and unclear or misguiding government mandates, especially where land tenure claims are disputed. A 'blue carbon gap' between the wealth of information on these carbon sinks and the lack of actions taken to preserve and protect these areas exists.

IUCN, in its role as a partner to the UN Environment/ GEF Blue Forest Project, has penned an article to increase closure of the aforementioned 'blue carbon gap' in identifying blue carbon policy trends between countries and pinpointing opportunities for best practices and scaling up solutions. It draws extensively from the National Blue Carbon Policy Assessments, delivered last year as part of a Blue Forests Project to examine in-depth the blue carbon policies of five countries: Ecuador, Indonesia, Madagascar, Mozambique and the UAE. The article will be published in Aquatic Conservation launched during IMPAC4.

Blue carbon is not fully integrated in all aspects of national to local policy making, but some practices can illuminate pathways to better blue carbon management. Several best practises for improved blue carbon management are identified in the article, including the promotion of community based carbon projects, where projects are implemented in collaboration with local communities, allowing for high stakeholder participation. Revenues generated from the sale of carbon credits can be invested either in project implementation or to support community development. Other practices include working through established international bodies already working on carbon, such as REDD+, and to encourage cash-for-management schemes, where coastal communities get direct cash payments for operating blue carbon ecosystems areas sustainably.

What needs to be done for blue carbon ecosystems to reach their full potential? Improved mapping of these ecosystems is an essential first step to allow for accurate understanding of the scale of these ecosystems and where they slot into existing climate change mitigation plans. Current unreliable data means that these ecosystems are often left out of carbon accounting. It is also vital to fully understand the threats facing these ecosystems in order to draw up best practices to tackle these pressures, either financially or via changing policies.

Despite any shortcomings of current blue carbon ecosystem management, it is certain that this issue is gaining traction and ranking higher on national policy agendas. More importantly, blue carbon ecosystems are increasingly recognised for their multiple benefits, not only for storing carbon but also supporting local livelihoods through other ecosystem services.

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blue forests

gef
www.theGEF.org

Blue Solutions

Promoting success for our Oceans

BLUE SOLUTIONS

Blue Solutions is a global project, implemented in partnership between GIZ, GRID-Arendal, IUCN and UN Environment, funded by BMUB. It is designed to support practitioners and policymakers in improving the management of marine and coastal biodiversity. The initiative covers a range of topics relevant to the conservation and sustainable use of marine and coastal resources, including marine protected areas and marine spatial planning, among others. IUCN's role within the Blue Solutions partnership focuses on identifying and promoting success stories in management and governance of marine protected and conserved areas.

Blue Solutions coordinates the "Marine and Coastal" theme of PANORAMA – Solutions for a Healthy Planet. PANORAMA is a partnership initiative to document and promote examples of inspiring, replicable solutions across a range of conservation and sustainable development topics, enabling cross-sectoral learning and inspiration. The PANORAMA web platform provides a vast database of success stories for conservation practitioners and planners around the world. Its current version was launched at the IUCN World Conservation Congress 2016. To date, there are over 120 solutions published on the platform's "marine and coastal" portal.

In June 2017, Blue Solutions participated in the high-level UN Ocean Conference, which was held in order to support the implementation of SDG 14 on "Life below water". One of the side events was the Blue Solutions Market Place, which provided a glimpse of the approach of exchanging experiences and supporting their re-use across regions. For example, a successful sponge farming project in Zanzibar and its potential replication in Seychelles was introduced.

The publication "Blue Solutions from Africa" compiles 32 blue solutions from all over the continent, most of which were presented at the Blue Solutions' third Regional Forum for Oceans, Coasts and Human Well-Being held in spring 2016.

Several Blue Solutions trainings were held over the last 12 months including The Blue Planning in Practice Training on the Isle of Vilm, which brought together practitioners from 14 different African, Latin American and Asian countries, applying concepts of marine spatial planning by working on the fictitious case of the tropical country Bakul.

Earlier this year, the Blue Solutions team spent 9 days in Bali for a "training of trainers" to pass on the concepts and methodologies of the courses "Integrating Ecosystem Services", "Climate Change Adaptation" and "Blue Planning in Practice". Trainers from all over the world attended, including representatives of NGOs, universities and entities dedicated to development cooperation.

Through a webinar and an interactive article, IUCN showcased "Solutions in Focus" relating to community-led and shared governance of marine protected and conserved areas in June 2017.

Blue Solutions will be an active participant at IMPAC4, with three official sessions as part of the programme: a workshop on "Solutions for MPA financing – success stories and their potential for broader application"; a second workshop on "Large-scale MPAs – Success stories and learning for the way forward"; as well as a knowledge café on "Solutions for scaling shared and community-led MPA governance".

Launch of the new PANORAMA – Solutions for a Healthy Planet web platform at the Oceans Pavilion during the IUCN Congress 2016

Erik Solheim, Executive Director of UN Environment, at the PANORAMA launch at the IUCN Congress 2016

You will also find us at the IUCN Oceans Pavilion – come and attend 1 of our daily sessions, have a chat, or pick up our publications.

For more information contact Marie Fischborn (Marie.Fischborn@iucn.org) or visit www.bluesolutions.info

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Project REGENERATE

Background

Project REGENERATE is implemented by IUCN in collaboration with the Government of Maldives and is generously funded by USAID. The Maldives is a country at high risk from climate change, and is also highly dependent on its coral reefs. Coral reefs play a fundamental role in food provision and shoreline protection. The country has been impacted by climate change with severe and mass coral bleaching in 1998 and 2010 that killed a majority of shallow corals. Recognizing that sound coastal resource management is critical to sustainable development and climate adaptation, the Government of Maldives has begun developing policies to protect reef fisheries, decentralize marine management, and accelerate the designation of marine protected areas. Project REGENERATE aims at creating a network of marine managed areas, and builds on the experience of the International Union for Conservation of Nature (IUCN) in the Maldives, working on critical environmental issues such as climate change and biodiversity since 1985.

Scope

The final goal of this project is to develop a Resilience-Based Management (RBM) framework to improve the ability of policy-makers and stakeholders in the Maldives to understand and address the risks from global, regional and local-scale pressures on their environment. Resilience can be defined as the capacity of a system (ecological or social) to withstand and absorb shocks without collapsing into a different, often less valuable, state of being. RBM is an innovative approach to environmental management because it recognizes the inevitability of change, it emphasizes adaptation to change and it focuses on building resilience rather than the conservation of a steady-state environment. At its completion, this project will provide the foundation for environmental managers to improve the outlook for coral reef ecosystems and the communities dependent on them. It will enhance understanding of socio-ecological resilience; improve access to knowledge, and increase capacity to manage coral reefs. The RBM framework will be critical for establishing a network of marine managed areas.

Project REGENERATE has four main aims:

- **Improve access to science and technology for decision-making and establishing policy frameworks for increasing coastal resilience**
- **Increase stakeholder capacity to measure, monitor, and adapt to climate stresses through education, training, and outreach**
- **Strengthen governance in support of decentralized management of more resilient reef ecosystems**
- **Recommend sustainable financing mechanisms to support climate-resilient marine management**

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The status of Coral Bleaching in the Maldives

© Carl Gustaf Lundin

Coral bleaching has been recognised as a global threat by conservationists for many years, and at this time, is taking place at an unprecedented rate with the longest global bleaching events ever recorded taking place between 2014 and 2016. With Coral Reefs forming the physical basis for the Maldives in terms of protecting islands and nourishing the beaches, the state of corals here is of paramount importance to both marine and terrestrial life here. Without proper protection and management, marine, and indeed human, life will suffer. In order to implement effective strategies to combat the mass bleaching events taking place in the Maldives, one must first understand quantitatively what the situation of these corals is.

The report

The 2016 report by the Marine Research Centre, Ministry of Fisheries and agriculture, IUCN, REGENERATE and USAID attempted to do just this, and for the first time presented data from comprehensive efforts to monitor coral bleaching in the Maldives. Using a combination of data from citizen and expert scientists (governmental, academic and non-governmental), the results showed the true extent of the devastation. A mass bleaching event that took place in 2016 formed the basis of this report, and allowed for the corals to be studied in a way that was not possible back in the 90s. A much larger and more detailed data set for the Maldives was collected in 2016 than ever before due to the continued monitoring of the National Coral Reef Monitoring Sites (NCRMS) by the Marine Research Centre (MRC), collaborations with international partners such as the International Union for the Conservation of Nature (IUCN) and an expansion of data collection to additional sites around the Maldives in 11 atolls, with the help of citizen scientists and resort marine biologists.

The results

A total of 71 sites, consisting of sheltered (sheltered from oceanic wave actions) and exposed (exposed to oceanic wave actions) sites, across 11 atolls within 0 m to 13 m depth range were surveyed from March to June 2016 to understand the severity of the bleaching event. The overall percentage of bleached corals recorded across all 71 sites in the Maldives is 73%, indicating a severe bleaching event. Analyses of the multiple monitoring efforts suggest that 66% of corals bleached at a depth of 0m to 7 m, and 77% of corals bleached in depth from 7m to 13 m. Furthermore, 72% corals in sheltered sites and 74% of corals in exposed sites bleached, with no significant difference in bleaching response detected between exposures.

The causes

The 2015-2016 El Niño weather phenomena and associated sea surface temperature anomalies in 2016 caused one of the largest recorded episodes of mass bleaching in the Maldives. The El Niño began in 2015 and caused sea surface temperature anomalies in the Pacific Ocean, first affecting Hawaii in August 2015. The 2016 El Niño is considered to be one of the strongest El Niño events recorded since 1950. In Maldives, sea surface temperatures and degree heating weeks peaked from late April to mid May 2016, precipitating the bleaching event, with high temperatures over 32°C recorded.

What's next

Despite the high impact of the event, a number of sites (e.g. Drift Thelu Veliga House Reef in South Ari Atoll, Blue Cove and Coral Gardens at Magoodhoo island in Faafu Atoll, Reethi Beach West in Baa Atoll, Sonevafushi House Reef in Baa Atoll, and Emboodhoo Finolhu Inner Reef in South Malé Atoll) were reported to have less than 45% incidence of coral bleaching and more than 25% live coral cover. These sites have been defined as 'hope spots', and warrant further attention through follow up surveys and possible investment in management and protection.

How much do people really know about coral bleaching in the Maldives?


© IUCN Maldives

Coral reefs form the foundation of many ecosystem services such as fisheries, tourism, aesthetic and cultural values upon which many local communities depend on. With coral reefs providing such essential services to humans, the prospect of their continued widespread degradation is of concern.

Over the past two decades, the combination of global and local stressors have resulted in increased prevalence and severity of mass coral bleaching events associated with anomalously high sea surface temperatures, leading to decline in reef conditions throughout the world. In 1998, the high sea surface temperature associated with a strong El Niño event led to the first documented mass coral bleaching event and caused severe impacts throughout the world, including the Maldives coral reefs. This event resulted in 90 percent bleaching-induced mortality in central atolls of the Maldives. The second mass bleaching event occurred in 2010 and Maldives coral reefs experienced a moderate level of bleaching, although the impacts of this event have not been well documented and studied in the Maldives.

Similarly, last year has been a tragic year for the coral reefs throughout the world. This event started in October 2015, although effects have been recorded in Maldives from April to mid-June 2016. Several assessments were done to understand the degree of impact, and efforts had been made by the government, as well as stakeholders, to increase the recovery rate. Confronting mass bleaching events like this requires a major scaling-up of management effort based on an improved understating of social-ecological processes that underlie reef and community resilience.

In order to capture the current state of community knowledge and awareness level about coral bleaching, IUCN Maldives team carried out some informal interviews with community members of Maalhos and Feridhoo, North Ari Atoll during the 2015-2016 mass coral bleaching event. In total, 64 respondents (41 males and 23 females) were interviewed.

Responses indicate that awareness on coral bleaching is remarkably low in these two islands. Only a few have witnessed coral bleaching, indicating that a large proportion of the population does not interact with coral reefs on a day-to-day basis. This lack of interaction may also have influenced their lack of knowledge on associated risks of coral degradation. Many respondents (59.4%) had difficulty in identifying indirect benefits they receive from coral reefs and how these benefits might be disrupted due to reef degradation.

Marine resources such as coral reefs are largely associated with men as they interact with the reef environment more primarily due to their choice of livelihood activities. For example, only 34.8% of females had heard about coral bleaching, compared to 59.3% of males. Men were also more aware of the correlation between coral bleaching and socio-economic wellbeing compared to women.

Respondents claimed that dialogue about coral reefs should occur between men since they are the primary users of coral reefs, and that it is not an area that women are directly involved in. This is an indication of the clear distinction in roles and responsibilities of men and women within the community, where domestic responsibilities are assigned to women and any activity that is associated with management such as environmental stewardship is designated to men.

A large proportion (62.5%) of respondents claimed that they are concerned about the future of coral reefs. The majority of concerned people are men.

When asked what the community can do to improve the future of coral reefs or to adapt to changes that result from coral reef degradation, 26.5% believe that there is nothing that can be done. However, some respondents suggested strategies that may be useful in addressing climate change threats:

- Awareness programmes
- Proper waste management
- Stop sand mining
- Construction of seawall

The result of this survey is a strong indication that developing a programme to promote environmental stewardship in North Ari Atoll is of utmost importance. These programmes not only increase awareness of communities, but also enhance community ownership of resources and their capacity to implement and enforce management strategies. Through such a programme, locals could also gain insight into policies and processes that regulate resource use in their area.

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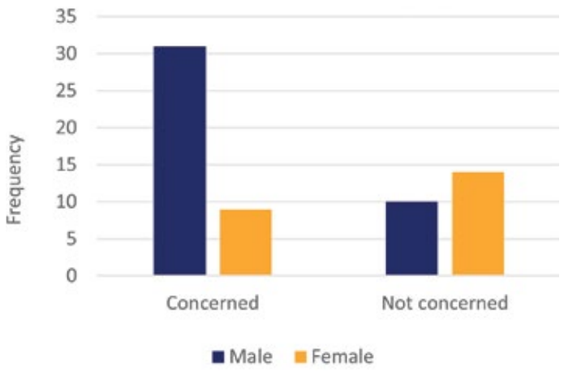


Frequency of participants who are concerned about future of coral reefs

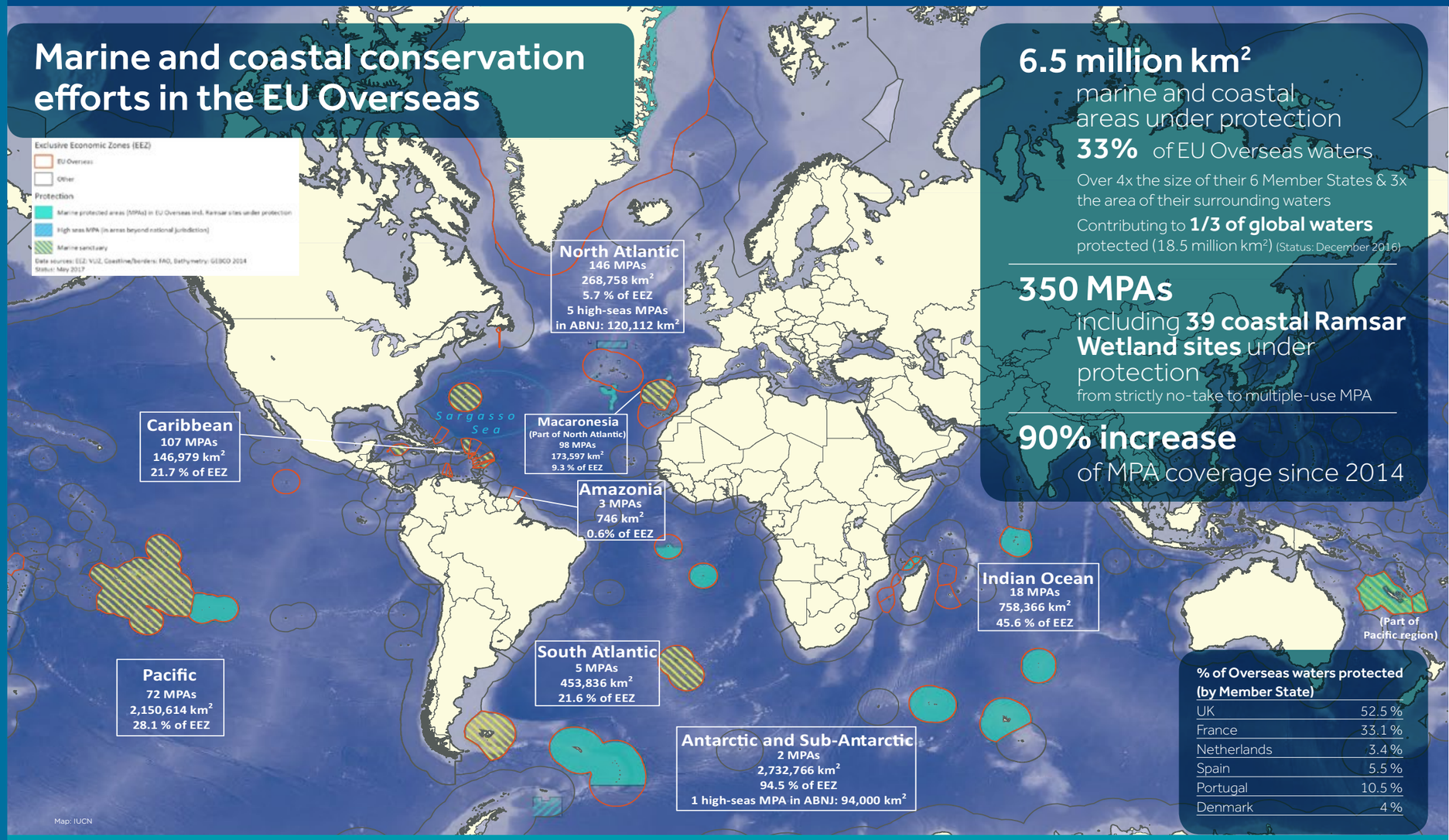

© Carl Gustaf Lundin

EU Overseas - marine conservation champions that already protect a third of their seas and coasts

Having surpassed international goals the EU Overseas are leading the way on global marine conservation.

This work is supported by the France-IUCN partnership for Nature and Development.

Marine and coastal conservation efforts in the EU Overseas



6.5 million km²
marine and coastal areas under protection
33% of EU Overseas waters
Over 4x the size of their 6 Member States & 3x the area of their surrounding waters
Contributing to **1/3 of global waters** protected (18.5 million km²) (Status: December 2016)

350 MPAs
including **39 coastal Ramsar Wetland sites** under protection
from strictly no-take to multiple-use MPA

90% increase
of MPA coverage since 2014

% of Overseas waters protected (by Member State)	
UK	52.5 %
France	33.1 %
Netherlands	3.4 %
Spain	5.5 %
Portugal	10.5 %
Denmark	4 %

Protection level

5%

2009 — ***South Orkney Islands Southern Shelf*** First high seas MPA: 94,000 km² - Antarctic (in areas beyond national jurisdiction)

2010 — ***Chagos Archipelago*** no-take MPA (British Indian Ocean Territory): 640,000 km² – (100% of EEZ) - Indian Ocean

2010 — ***Mayotte*** Natural Marine Park: 68,381 km² – (100% of EEZ) - Indian Ocean

2012 — ***Glorioso Islands*** Natural Marine Park: 43,614 km² - (100% of Glorioso waters) - Indian Ocean

17%

2014 — ***South Georgia and the South Sandwich Islands***: 1.07 million km² - (87% of EEZ) - Sub-Antarctic

2016 — ***Natural Park of the Coral Sea, New Caledonia***: 1.3 million km²- (100% of EEZ) - Pacific

2016 — ***Pitcairn Islands*** no-take marine reserve: 834,000 km² - (100% of EEZ) - Pacific

2016 — ***St Helena*** MPA: 450,224 km² - (100% of St Helena's waters) - South Atlantic

33%

2017 — National Nature Reserve of the ***French Southern and Antarctic Territories*** (TAAF)* protection zone extended to full EEZ: 1.66 million km² - Antarctic

2017 — ***Martinique***: 47,340 km² - Caribbean (100 % of EEZ)

60%?

2020

* French: Terres australes et antarctiques françaises - TAAF

The 25 European Union (EU) Overseas Countries and Territories (OCTs) and 9 Outermost Regions (ORs) are precious assets: home to a rich biodiversity and unique ecosystems, strategically located in all the major oceans and spanning over 19 million km² of marine area, of which over 33% (6.5 million km²) are currently protected. This is almost twice the area protected in the national waters surrounding the six Member States, to which they are linked: France, the UK, the Netherlands, Portugal, Spain and Denmark, and already surpasses Aichi Target 11 and the Sustainable Development Goal 14 (SDG 14) . Having increased six-fold since 2010 and nearly doubled during the past two years, the area under protection could surpass 60% by 2020 following recent announcements of protection plans.

While 95% of the 6.5 million km² are the result of large MPAs, covering 15% or more of their national waters, the majority of the 350 MPAs in the EU Overseas are smaller and located in coastal waters, largely due to a lack of data from pelagic and deep sea ecosystems, as well as limited capacity to manage and enforce larger MPAs covering coastal and offshore areas.

A qualitative assessment of the marine and coastal conservation efforts of the EU Overseas showed that large MPAs, covering both coastal and offshore areas, are the most effective, provided they are well managed. This assessment is part of an IUCN review which presents the first overview of marine and coastal conservation efforts in the EU Overseas, including geographic coverage, management, representativeness, resilience against invasive alien species, climate change and anthropogenic pressures as well as progress towards the achievement of international conservation objectives such as those of the Aichi Targets and Sustainable Development Goal 14 (SDG 14) on Oceans. The main findings were presented at the UN Ocean Conference on the 9th of June 2017 and the full review will be released at the IMPAC4 in September 2017 in Chile.

Governing over 5% of the earth's ocean surface (twice as much as the US waters) and contributing to one third of the global marine protection efforts it is evident that the EU Overseas are champions in marine conservation and key players for global ocean governance.

EU Overseas waters host:

- **5** of **10** largest MPAs worldwide
- **10 million km²** of safe haven for marine mammals
- **7** shark sanctuaries (>6 million km²)

International recognition for marine/coastal protection

- **4** marine World Heritage sites
- **14** Man & Biosphere Reserves (MaB)
- **39** marine/coastal Ramsar sites

International Recognitions of Marine Biodiversity

- **19** EBSAs (ecologically and biologically significant marine areas)
- **5** Mission Blue Hope Spots
- **4** Biodiversity hotspots

BEST
VOLUNTARY SCHEME FOR BIODIVERSITY AND ECOSYSTEM SERVICES IN TERRITORIES OF EUROPEAN OVERSEAS

The BEST Initiative –

More funding for projects in the EU Overseas, first results/conclusions and a new grant programme

Seven years after the start of the BEST Preparatory Action by the European Parliament, the BEST Initiative has gained significant momentum and can look back on several milestones and achievements.

Monitoring Greenland waters
© Elmer Topp-Jorgensen

Since 2011, European Union (EU) investments of over € 13.4 million have enabled the funding of more than 60 projects and ecosystem profiles plus investment strategies have been developed for each of the 7 EU Overseas regions.

Following the recommendations of the first conference dedicated to "Strategies for Climate Change and Biodiversity Loss in the EU and EU Overseas" in 2008 in Réunion, BEST was initiated as a voluntary scheme for Biodiversity and Ecosystem Services in Territories of European overseas. It 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 Outermost Regions (ORs) and Overseas Countries and Territories (OCTs).

The first two calls for proposals in 2011 and 2012 saw an overwhelmingly positive response: 84 submitted projects, of which only 18 could be funded. Responding to the obvious need for a more strategic approach to funding conservation projects in the EU Overseas, the European Commission launched a final call in 2013 for a single project aiming to transition towards a sustainable scheme that allows swift and easy access to funding. Over the following 2 years seven regional knowledge hubs - coordinated by IUCN - together with local stakeholders elaborated regional ecosystem profiles, in which they identified 366 Key Biodiversity Areas (KBAs) and 57 ecological corridors – almost 3.5 million km2 of vital habitats for species requiring enhanced protection, of which over 70% are marine or coastal. These geographic and complementary thematic conservation priorities were agreed during a participatory process and served as a scientific basis for the development of regional investment strategies, which not only define realistic conservation needs but also suggest potential future projects that address the conservation priorities.

Given the need to further support on-the-ground conservation projects, in 2015 the European Commission committed an additional € 8 million through the BEST 2.0 programme. This grant-mechanism with tailored small and medium-sized grants allowed funding of 16 projects in 2015 and 28 projects in 2016 in the 25 OCTs, an investment totalling € 6.7 million. Half of the projects have a marine or coastal focus, such as restoration of coral reefs, mangroves and seagrass beds, marine species conservation, sustainable fishing and fisheries by-catch mitigation, identifying important marine areas and marine spatial planning, improving coastal and marine management, research on marine biodiversity, ecosystems as well as climate change impacts. Following almost 100 eligible project proposals in the first two years, a final call for small-grant projects, launched in 2017, received 43 project proposals - again far more than could be funded with the remaining € 1.3 million. With the first projects starting at the beginning of 2016, the first results and conservation successes are starting to be realised (see examples in text boxes).

Following the success of BEST 2.0, a new BEST project was launched in January 2017, which addresses the urgent need to mobilise resources preserving the unique and threatened biodiversity and ecosystems in the six French ORs. Beyond funding projects in Guadeloupe, Martinique, Saint Martin, French Guiana, Mayotte and Réunion through swift small grants, the new BEST RUP project will explore the feasibility of Mapping and Assessing of Ecosystem Services (MAES, http://biodiversity.europa.eu/maes) and deliver lists of species and habitats in the French ORs. The work will take advantage of the synergies with previous and existing work carried out under the BEST Initiative, such as the collection of information on species and habitats for the development of the regional ecosystem profiles and the identification of KBAs.

The 7 regional ecosystem profiles are available for download at http://ec.europa.eu/best
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The European Commission is organizing a BEST conference on 28 November 2017 in Brussels, which marks the end of the BEST Preparatory Action and will showcase the milestones and achievements of the BEST Initiative as well as allow discussions for the future of supporting the EU Overseas in their conservation efforts

Aquaculture and Marine Protected Areas:

Exploring Potential Opportunities and Synergies

PRINCE ALBERT II OF MONACO FOUNDATION

With the year 2020 fast approaching, time is running out to achieve Aichi target 11: 10% of the oceans in effectively managed MPAs by this time. By 2030, SDG 2 (food security) and SDG 14 (sustainable ocean use) must be met. This presents communities and governments with two potentially conflicting sustainability goals; one for the people and one for the marine wildlife. In an effort to reconcile nature conservation and sustainable development, an integrated solution to attain each of these goals must be proposed.

Aquaculture has long been recognised as a tool to help communities secure food, alleviate poverty and secure economic resilience.
If there are measures to ensure that this aquaculture is regulated and conducted in a sensible manor, then MPAs and aquaculture in coastal communities can exist in concert.
The approach taken by IUCN , in partnership with the Prince Albert II of Monaco Foundation, was to create a matrix of solutions to identify how whether each category of MPA could cooperate with a method of aquaculture, and from here go about creating and implementing strategies for their sustainable coexistence.

An evaluation of the potential impacts of aquaculture on the marine environment, as well as the socio-economic factors of those communities that interact with or depend on MPAs for their livelihood and recreational pursuits was conducted. Numerous benefits and services provided by aquaculture were identified and are summarised below:

- Enhancement and conservation of wild stock flora/fauna
- Restocking of fisheries based on aquaculture to combat overfishing on vulnerable stocks
- Food security, poverty alleviation and economic resilience for MPA local communities
- Providing services to coastal ecosystems including Carbon sequestration, nutrient or phytoplankton biomitigation, benthic biodiversity restoration

With case studies from Velondraike, Madagascar, investigating Locally Managed Marine Area and Aquaculture (LMMA), and the Marine Nature Park of Mayotte, the overarching conclusions from this report pertain to the need to widening the designation of MPAs, and accurately assigning aquaculture initiatives in these areas, on a case-to-case basis, that will allow for the sustainable coexistence of MPAs and local communities who thrive on aquaculture. For most cases, the approaches will need to be adapted or applied according to the objectives of specific MPAs.

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ADDITIONAL PUBLICATION: SUSTAINABILITY OF AQUACULTURE FEEDS

The composition of aquaculture feeds is a key issue in the sustainability of carnivorous fish and shrimp farming industry, highly dependent on fish meal supply. Recommendations are made for a more sustainable supply, even as far as making farmed fish more 'vegetarian' by feeding them from derivatives of seaweed, terrestrial plants or other alternative sources, as this should reduce the environmental impact of the fast-growing fish farming sector.

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MPAs & Islands

Accessible Science Supporting Sustainable Decisions

Islands are at the forefront of climate change and ocean challenges. As the consequences of climate change take hold in the global ocean and the world's coastline, there is an urgent need to work with island states and island territories to help strengthen capacity and extend the existing range of tools that will support the development and implementation of resilience strategies.

The Corsica Island Adaptation Report Card project offers an opportunity to empower decision-makers and communities with a new prospective tool for informing better adaptation and resilience by making the link between the best available marine climate change science, how this translates into priorities for adaptive management action, and subsequent changes in management practices taken on the ground.

The project is to demonstrate proof of concept for MPA Island Adaptation Report Cards, which has a focus on MPAs but goes well beyond that to think of wider management of the coastal zone.

The MPA Island Adaptation Report Card will set out what is currently known about marine climate change impacts, what science predicts could happen in the coming years according to different scenarios, the status of MPA activities and what priority adaptation actions are therefore recommended for their subsequent development of MPA networks and MPA management practices. It will provide valuable information and recommendations for supporting the development, the improvement and the implementation of adaptation and resilience strategies. This draws from 2015 work sponsored by the French Agency for Biodiversity (AFB) and climate change in preparation for COP 21, and from the hugely successful innovative approach of the Marine Climate Change Annual Report Cards pioneered by the UK Marine Climate Change Impacts Partnership (MCCIP). The project works also in parallel with the Mediterranean initiative on MPAs on Climate Change that already involves two Corsican MPAs.

The report card – 8 pages long – will:

1. Summarise what is known about the current impacts of climate change on coastal and marine ecosystems on a standard confidence basis
2. Summarise what is expected will happen in the future by way of impacts of climate change on coastal and marine ecosystems on a standard confidence basis
3. Summarise current marine and coastal mitigation and adaptation responses to climate change impacts of coastal and marine ecosystems
4. Set out the gaps in action needed to address likely future impacts as well as reform and evolution of current actions to keep pace with such changes

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PRINCE ALBERT II OF MONACO FOUNDATION

AGENCE FRANÇAISE POUR LA BIODIVERSITÉ
ÉTABLISSEMENT PUBLIC DE L'ÉTAT

Examples of Report Cards, MCCIP 2013

© Gérard Pergent

© Joao Sousa

Handing problems to the next generation:
Textiles and tyres among major sources of marine plastic pollution (IUCN study)

This report provides the first quantification of primary microplastics leakage and demonstrates that these primary microplastics are globally responsible for a major source of plastic pollution in the oceans. The model developed for this publication allowed IUCN to conclude that the largest proportion of these particles stem from the laundering of synthetic textiles and from the abrasion of tyres while driving.

Plastic is a synthetic organic polymer made from petroleum with properties ideally suited for a wide variety of applications, including packaging, building and construction, household and sports equipment, vehicles, electronics and agriculture. Plastic is cheap, lightweight, strong and malleable. Over 300 million tons of plastic are produced every year, half of which is used to design single-use items such as shopping bags, cups and straws.

At least 8 million tons of plastic end up in our oceans every year. Floating plastic debris are currently the most abundant items of marine litter. Waste plastic makes up 80% of all marine debris from surface waters to deep-sea sediments.

Sources of microplastics

Plastic never goes away. It does not biodegrade. Rather, under the influence of solar UV radiation, wind, currents and other natural factors, it simply fragments into small particles, termed microplastics (particles smaller than 1 to 5 mm) or nanoplastics (particles smaller than 1 mm). The invisible fraction of plastic pollution has been identified in tap water, beer, salt and are present in all samples analysed in the world's oceans, including the Arctic.

This year, the Global Marine and Polar Programme in partnership with the Swiss-based consulting company "Shaping Environmental Action" published a new report, "Primary Microplastics in the Oceans: A Global Evaluation of sources". This report investigates the source of primary microplastics i.e. microplastics that are directly released into the environment. This contrasts with secondary microplastics that originate mostly from the degradation of large plastic waste. Throughout the study, seven regions are considered: Africa and Middle East, China, East Asia and Oceania, Europe and Central Asia, India and South Asia, North America and South America.

The main sources of marine plastic are land-based. As shown in the figure, close to two-thirds (63.1%) of the releases are due to first the laundry of synthetic textiles (34.8%), and second to the erosion of tyres while driving (28.3%). The order is the same in the pessimistic scenario. In the optimistic scenario the joint contribution is similar but tyres erosion dominates (38%). Note that these results only consider synthetic rubber. Should natural rubber be considered, the erosion of tyres would contribute to almost half of the releases (46.2%) in the central scenario. The third important contribution (24.2%) by source is city dust, which has been computed with a simplistic approach. Further research should be performed on city dust to better understand the contribution per region. Personal care products only account for 2% of the global release of primary microplastics to the world's oceans.

Plastic particles reach the oceans through road runoff (tyres, road markings and pellets on land) (66%) followed by wastewater treatment systems (25%) and by wind transfer (7%). Marine activities only generate around 2% of the losses.

Why is this important?

Plastic pollution threatens ocean health, food safety and quality, human health, climate change, and coastal tourism. It is an environmental, economic and social issue crossing borders and sectors.

The most visible and disturbing impacts of marine plastics are the ingestion, suffocation and entanglement of hundreds of marine species. Marine wildlife, such as birds or turtles, mistake plastic waste for prey and suffer from lacerations, infections, reduced ability to swim, lowered food uptake, internal injuries or even death following blockage of the intestinal tract. At least 267 different species are known to have suffered from entanglement or ingestion of plastic. Besides these physical damages, plastic debris has the potential to poison living resources and, in turn, our food chain.

Several chemicals, already known for being carcinogenic and causing endocrine disruption (e.g. DDT and BPA), are introduced within plastic materials during manufacture, while other toxic pollutants accumulate on their surface during their long residence time in seawater. When marine organisms ingest plastic debris, they act as a transport vector for these contaminants within their digestive systems and accumulate in the food web.

Figure 2: Waste Hierarchy, according to the Zero Waste International Alliance. Credit: Zero Waste International alliance

Plastic is a petroleum product. If plastic waste is incinerated, it increases carbon emissions. Plastic pollution and climate change are therefore two interconnected global emergencies.

Floating plastics considerably contribute to the transport of non-indigenous marine organisms and bacteria thereby compromising ecosystems equilibrium. Plastic waste also negatively impacts tourism due to aesthetic degradations. In addition to decreased tourism-related incomes, regular cleaning by municipalities and public authorities to maintain beaches attractive to tourists and residents engenders major economic costs.

What can be done?

"This report is a real eye-opener, showing that plastic waste is not all there is to ocean plastics," says IUCN director general Inger Andersen. "Our daily activities, such as washing clothes and driving, significantly contribute to the pollution choking our oceans, with potentially disastrous effects on the rich diversity of life within them, and on human health. These findings indicate that we must look far beyond waste management if we are to address ocean pollution in its entirety. IUCN therefore calls on private sector leadership to undertake the necessary R & D for the needed production shifts."

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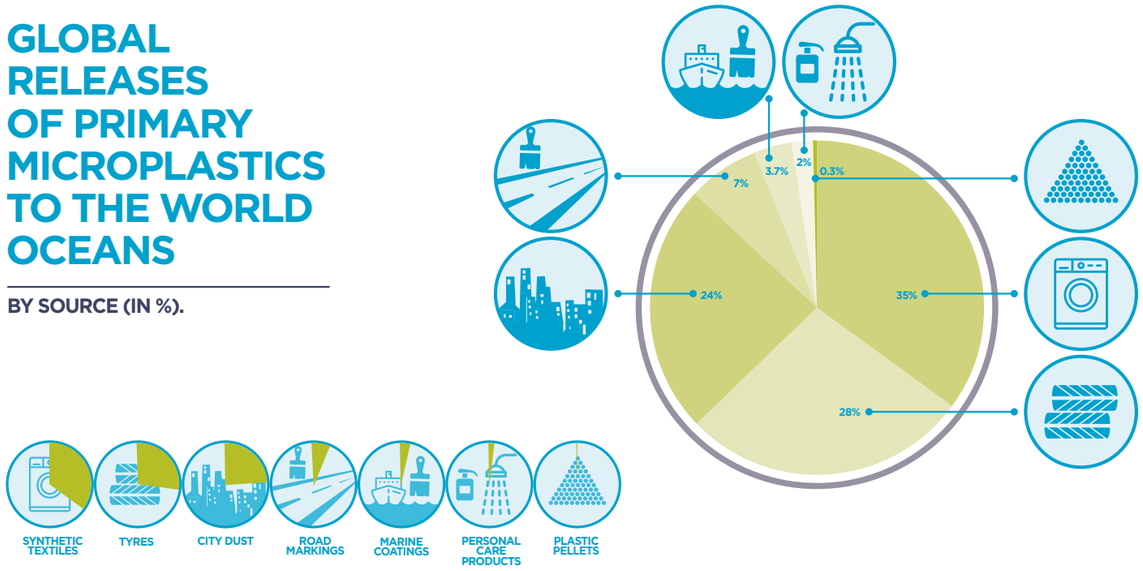

Baltic Solutions to Plastic Pollution

SVENSKA POSTKOD LOTTERIET

Carried out by IUCN in partnership with leading regional experts, members of academia, research institutes and grassroots organizations such as Coalition Clean Baltic (CCB) and Plastic Change, this project has a planned duration of two years. Through desk and field research and laboratory experiments, IUCN and partners will endeavour to demonstrate the impacts of plastic pollution in the Baltic region on climate change, biodiversity and food safety.

The Baltic Sea is the youngest yet most polluted sea in the world. Its coastline is bordered by nine different countries and is home to approximately 90 million people, many relying on the sea for fishing, shipping and recreation. The highly sensitive and interdependent Baltic marine ecosystems, with unique flora and fauna, suffer from multiple natural and anthropogenic pressures such as eutrophication, hazardous substances, risk of oil spills, energy-related activities, overfishing and climate change. The most recent emerging threat jeopardizing the Baltic Sea's ability to provide ecosystem goods and services is plastic pollution.

A two-phase project, the details of which are outlined in the adjacent boxes, aims to provide public and private decision makers, and consumers, with new scientific findings about problems and solutions related to plastic pollution within the Baltic Sea and investigate policy-leveraging mechanisms to provide entry points for recommendations. Ultimately, IUCN aims to restore the health of ecosystems and biodiversity in the Baltic Sea, as millions of people depend on it for food and income.

A number of activities will take place which aim to address the driving questions of the project, as outlined in both of the main phases. One such activity is a Baltic-wide plastic influx mapping to identify the sources, quantities and pathways of plastic inputs into the Baltic Sea. This will take into account different types and sources of plastic pollution such as lost or discarded fishing gear; tyres and city dust through road run-off; textile fibres and cosmetics through wastewater as well as riverine inputs. This mapping activity will aim to validate models previously put in place that have yet to be tested, but can now proceed due to the good availability of data and the semi-closed nature of the Baltic Sea. Key aspects of water, and wastewater treatment, systems that are often overlooked, such as the role of dams and sedimentation rates, can now be considered and tested for.

Together with GMPP experts, researchers from SERF (Sea-ice Environmental Research Facility in Manitoba, Canada) will carry out three worldwide pioneering experiments to understand how plastic debris might influence sea ice formation and melting. The research will further understanding of the interactions between plastic particles and ice dynamics, with a particular focus on:

- plastics impacts on the ice formation process,
- plastics impacts on the ice melting process,
- plastics partitioning in ice and water (uptake ratio).

Activities will also be undertaken to achieve the policy component aims of the project. These include identifying stakeholders to be analysed in order to clarify their position, role, expectations and potential influence on the achievement of the project's goal. In addition, the most relevant policy leveraging mechanisms will be defined in collaboration with the IUCN-EU Brussels office (with a strong EU Policy network) and the CCB (with a strong Baltic Policy network), and continuing to raise public awareness by creating an NGO statement calling on Baltic Sea region stakeholders to ban microplastics in consumer products and single use plastic. Finally, in order to access the private sector, IUCN will also produce information material in several Baltic Sea Region languages on what the industry can do to minimise the flow of microplastics into the sea, e.g. better waste management and integration of environmental and socio-economical costs of marine litter and microplastics.

For more information, please contact
João Sousa (Joao.Sousa@iucn.org).

PHASE ONE

Research will aim to address the following:

1. How much plastic (macro- and micro-) Baltic countries load every year into the sea?
2. Does plastic pollution enhance climate change?
3. Does plastic negatively impact food sources and endangered species in the Baltic Sea?

PHASE TWO

Policy recommendations

1. Map and convene policy stakeholders and other relevant bodies
2. Investigate policy leveraging mechanisms
3. Support ongoing awareness-raising initiatives

A New Episode: Closing the Plastic Tap in the Mediterranean Sea

Two years after the meeting in Monaco, which brought together relevant stakeholders to develop and implement long-term solutions to the growing problem of plastic pollution in the Mediterranean Sea (more information in the 2016 Newsletter), IUCN is engaging new efforts towards closing the plastic tap.

In November 2017, IUCN will launch a two-year project aiming to advance our understanding of the plastic pollution problem and help the design of local and achievable solutions. GMPP decided to focus on the Mediterranean Sea not only because it is one of the most polluted with plastic, but also because it as an almost closed sea with plenty of data available. It is therefore a perfect site to compare field sampling and modelling approaches used to answer the simple question "how much plastic is in the oceans?" These two approaches currently do not match and yield very different order of magnitudes. As the Mediterranean Sea is surrounded by countries possessing much contrasted socio-economic facilities, it is moreover a great model to answer to the question "How to close the plastic tap?"

How much plastic is in the Mediterranean Sea?

To better understand the plastic threat within the Mediterranean Sea, this project will start with a revision of the estimation of the quantity of plastic currently accumulated in the Mediterranean Sea. Existing literature and research carried out by several NGOs and academic partners will be compiled. Doing so, sea shores, sub-littoral bottoms and surface waters will be considered. Our preliminary estimations show that the quantity of accumulated plastic currently reported in literature (i.e. 1000-3000 tons) is largely underestimated.
Then, the yearly input of plastic will be estimated, thus yielding the first plastic footprint of the Mediterranean Sea. Plastic fluxes will be mapped per country, sources (primary and secondary microplastics), activity (packaging, laundry, driving, fishing, etc.), pathway (river, wind, road run-off, etc.), and type of plastic (seven categories of plastics of different density). Results will enable IUCN to identify priority hotspots for action.

How to close the plastic tap?

To answer this question, policies and initiatives to manage marine plastic currently in place – or being developed – in the 23 countries bordering the Mediterranean Sea and in key industries will be reviewed and analysed. By highlighting the gaps, IUCN will contribute to setting priorities and helping countries and key industrial sectors move forward efficiently.
Finally, a tool to monitor the efficiency of existing preventive and remediation actions (e.g. beach cleaning, garbage collection by fisherman, plastic bag ban or plastic straw ban) will be developed. This tool will also support donors in their effort to allocate resources to the most impactful projects and initiatives.

This work is conducted in full cooperation with the Beyond Plastic Med initiative implemented by the Prince Albert 2 Foundation with its partners: Surfrider, Tara Expeditions, MAVA Foundation and IUCN.

For more information, please contact
João Sousa (Joao.Sousa@iucn.org).

What's next for Marine Plastics?

A range of further proposals are currently in development, including a spin-off project within the Baltic Sea aiming to characterize the risk induced by plastic ingestion by Baltic Sea cod and, in turn, humans. A project focusing on recycling markets and financial tools is also in motion with a view to designing adapted solutions together with governments, businesses, NGOs, and waste managers including waste pickers. In parallel, IUCN is working on a 4-year initiative proposal on marine plastics and coastal communities. The goal is that governments and regional bodies within the Eastern and Southern Africa and the Asia Pacific regions promote, enact and enforce legislation and other effective measures that contain and reduce marine plastic pollution.

Ocean Threats:
Dealing with the risks associated with ocean warming, acidification and deoxygenation

The continued break up of the Antarctic ice shelf is one of many warning signs that more needs to be done to tackle climate change. Photo: © Carl Gustaf Lundin

Finding OA solutions in developing countries

IUCN has played a leading role, through its chairing of an expert group of leading scientists on ocean acidification (OAiRUG), in bringing to the fore the latest scientific information on ocean acidification (OA) and communicating it to the political arena. No longer considered solely as a potential problem in the future, the effects of OA are being felt here and now, as evidenced by acidic upwellings negatively affecting hatcheries of shellfish aquaculture in the eastern Pacific from Canada down to Chile. In the second phase of IUCN's programme on OA, supported by the Prince Albert II of Monaco Foundation and the Swedish Ministry of Environment, scientists from emerging countries will be engaged in regional workshops to identify how OA is affecting their region and what steps can be made to reduce and adapt to expected impacts, specifically for the region concerned. The first stop on the international awareness raising and capacity building effort is Colombia, where an expert meeting is scheduled for March 2018. The regional workshops will be organised to coincide with the 3-year scientific marine expedition under the direction of H.S.H. Prince Albert II of Monaco and in alignment with the outcomes of the AMAO (Association Monegasque pour l'Acidification des Océans).

Ocean Risk: understanding and reacting to it

IUCN's partnership with insurance company XL-Catlin has already done a lot to raise awareness on how ocean warming has and will affect various species and ecosystem groups, weather patterns and sea levels, and, by extension, a multitude of commercial human activities and interests. The next report in this series, due out early 2018, will analyse the risks resulting from a warming, changing ocean and the ramifications at political, economic, social, technological, legal (regulatory) and environmental level. It will also propose potential solutions. The report will provide the context and background to an Ocean Risk Summit organised by XL-Catlin and supported by IUCN that will be held in Bermuda in May 2018. The event will focus on how the insurance industry, as well as businesses, the finance sector and governments, should respond to the risks of existing and projected changes in the ocean.

Deoxygenation: a spreading scourge

Within just the last few years, a new phenomenon has arisen which requires urgent communication in the global policy arena – deoxygenation of the ocean. This is a consequence of climate change and ocean warming. As water warms it holds less oxygen and this process is currently occurring in our warming ocean. Warming waters not only hold less oxygen but increasingly challenge the metabolism of marine species and their survival. This matter is of increasing concern for the science community due to the widespread implications for future functioning of the oceans and for the goods and services they provide. Scientific papers already show that on average the ocean has lost 2% of its oxygen, rising to around 30% in some places such as coastal shelf areas in the eastern Pacific, and yet there is very little policy understanding or assessment of the consequences of this global-scale phenomenon.

The expected value cost of hurricane damage to Miami alone is set to increase from
US$**255 billion** in **2020** to
US$**3.5 trillion** in **2050**
(Repetto & Easton 2010)

IUCN is seeking to address the lack of awareness on this issue via a comprehensive scientific situation analysis report on ocean deoxygenation entitled "Ocean deoxygenation: everyone's problem". This project is funded by the Government of Sweden who were co-chair to the recent UN ocean conference, forming part of their voluntary commitment under SDG 14 and is also being undertaken in partnership with the International Oceanographic Commission of UNESCO. The report will provide the first high-profile global analysis of ocean deoxygenation. It will document the scale, nature and consequences of deoxygenation, which threatens the continuous supply and benefits from ocean goods and services especially in coastal areas, and to dependent coastal communities. Many of these communities are poor and the ocean offers their main source of protein and income. The work will significantly add impetus to the urgency and ambition with which countries should act to reduce carbon dioxide emissions, alongside the introduction of a strong, effective and efficient framework for governance, management and protection of the High Seas.

Protecting healthy ecosystems is imperative to the long-term restoration of the ocean as is the reduction of additional stresses due to unsustainable human activity. Photo: © Carl Gustaf Lundin

Conserving Biodiversity Beyond National Jurisdiction

A case-study on seamounts in the Indian Ocean

Areas Beyond National Jurisdiction (ABNJ), also known as the 'High Seas', comprise the areas >200 miles off the coast. Covering approximately half of the Planet's surface, ocean resources here are freely exploitable without any specific knowledge of their resilience.

The United Nations (UN) is currently working on the development of a legal framework for the management and conservation of international waters, which belong to all nations. A decision on whether to convene an intergovernmental conference on the development of an International Legally Binding Instrument under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction will be made by the UN General Assembly (UNGA) by the end of its seventy-second session.

In 2005, three of the four operators in the deepwater fishing industry in the southwest Indian Ocean voiced their concern over the lengthy implementation of an agreement on deep-sea fisheries in this area. They sought the support of the Food and Agriculture Organization of the United Nations (FAO) to facilitate and chair discussions on the subject. As a result of the discussions, operators decided to form an association of industrial operators to promote responsible fishing and efficient management of the species caught by their vessels. As a result of this, the Southern Indian Ocean Deepwater Fishers Association (SIODFA) was founded in 2006.

Since that date, SIODFA voluntarily declared 13 areas in which its members are prohibited from bottom-fishing (non-binding prohibition for non-members). These Benthic Protected Areas (BPA) are designed to protect, among other things, corals, fixed benthic organisms and wildlife associated with these benthic communities.

Involved in this effort of sustainable management and conservation, scientists are committed to sailing with the mission to qualify, quantify and understand the dynamics of the ecosystems supporting these resources.

IUCN and The FFEM (French Global Environment Facility) as well as experts from the MNHN (French National Museum of Natural History), the IRD (French Research Institute for Development) and IDDRI (Institute for Sustainable Development and International Relations) have chosen to apply this commitment to a particular type of habitat of the high seas, namely the seamounts. The IUCN FFEM-SWIO project was then launched in 2014.

Known to be aggregators of biological and mineral richness, seamounts are exposed to fishing pressure and future mining operations and due to increasing levels of anthropogenic activities that include habitat destruction, pollution, overfishing, warming and acidification of the oceans

The Walters shoal, located in the international waters of the South West Indian Ocean, was chosen as a pilot ecosystem because of the shallow depths of its summit area, thus increasing its target potential for ecosystem exploitation of high seas resources. This has come after States agreed in 2015 to open negotiations for an international agreement on the conservation and sustainable use of marine biodiversity in these areas.

This project will contribute to addressing the gaps identified by the United Nations Division of Ocean Affairs and Law of the Sea (DOALOS) in its assessment of knowledge of the high seas and in particular the seamount and deep seas ecosystems barely explored.

The central piece of the scientific component of the project is the research expedition that took place in April-May 2017 on the Walters Shoal. (Read more on pages 26-27).

The outcomes of the project both in terms of reflections on the governance and management tools and in terms of increasing scientific knowledge of seamount ecosystems will support the discussions that will be held during the intergovernmental conference on the subject if the UNGA decides to convene it in a close future.

The project is funded by the French Global Environment Facility (FFEM; **http://www.ffem.fr**) with several cofinancing parties including Food and Agriculture Organization (FAO), Institute for Sustainable Development and International Relations (IDDRI) and Oxford University.

Project partners: National Museum of Natural History (France), the Institute of Research for Development (IRD, France), (IDDRI) and Oxford University.

The project is supported by the French Ministry of Foreign Affairs and the French Ministry of Higher Education and Research.

Project implemented in collaboration with several institutions, ongoing projects or programmes: notably, the Department of Environmental Affairs and the Department of Agriculture, Forestry and Fisheries of South Africa, the Deep Sea Project of the FAO ABNJ Program and its partners, The Nairobi Convention, The Southern Indian Ocean Deepsea Fishers Association, universities in South Africa and Reunion Island, IFREMER, the International Seabed Authority, SAPPHIRE and AfriCOG.

For more information on the FFEM-SWIO project and the expedition, please contact
Aurélie Spadone (aurelie.spadone@iucn.org) or
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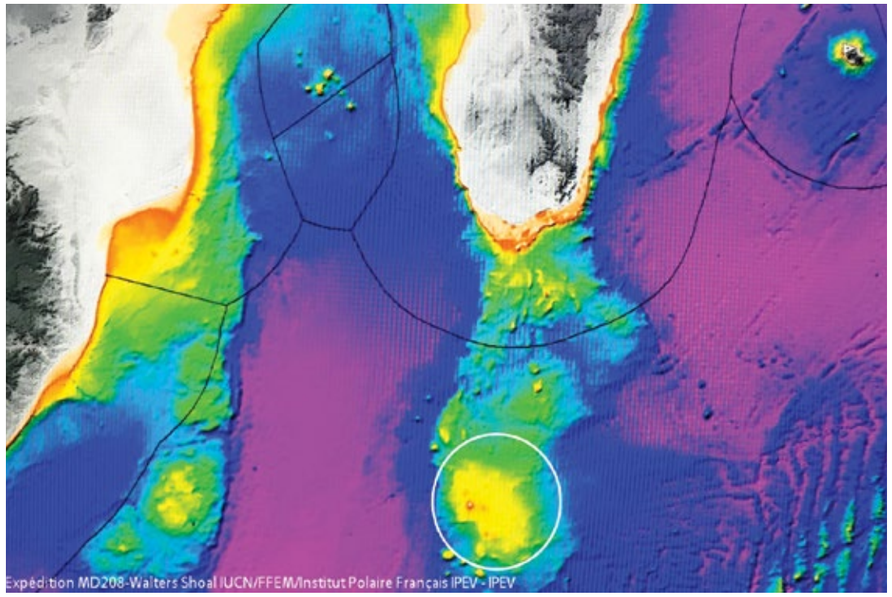
Expédition MD208-Walters Shoal IUCN/FFEM/Institut Polaire Français IPEV © Alain Barrère (MEN)

Exploring a Unique Ecosystem in the South West Indian Ocean

An Expedition to Walters Shoal

The Walters Shoal expedition is bringing to fruition the objectives of the scientific component of the IUCN FFEM-SWIO (South West Indian Ocean) project to help to identify adequate conservation measures in Areas Beyond National Jurisdiction (ABNJ), especially for seamounts.

Acquiring scientific data to enhance our knowledge and understanding of high seas ecosystems is one way to create the knowledge platform to support the future negotiations for the implementation of measures towards a sustainable use of their resources and conservation of their biodiversity and abundance.



Map: black lines are the EEZ (Exclusive Economic Zones) of coastal countries; Walters Shoal site is circled.

Seamounts are unique in their richness of minerals and, often endemic, biology. As a result of this, they are under a particular threat to mining and overfishing.

The study of the composition of benthic communities, and in particular the connectivity between coastal and offshore areas, is crucial to the way in which these resources are managed and conserved.

The work on the water column component will allow us to better understand the pelagic communities and their dynamics and to understand the physical processes resulting from the interactions between current and topography that are at the origin of the high biological productivity around the Walters Shoal compared to surrounding areas.

Furthermore, it will allow us to better know the association between marine megafauna and birds with the seamounts.

By advancing scientific knowledge, the project seeks to determine among the resources, what may be the ‘’natural wealth”, what could be considered as “common heritage of mankind”.

The Walters shoal, located in an Area Beyond National Jurisdiction of the South West Indian Ocean, has been chosen as a pilot ecosystem because of the shallow depths of its summit area, thus increasing its target potential for ecosystem exploitation of high seas resources.

The Walters Shoal is a group of submarine mounts located near the southern end of the Madagascar Ridge (700 km south of Madagascar, 1000 km to the east of the coasts of South Africa). The R/V Marion Dufresne operated by the French Polar Institute IPEV, lead scientists in the international waters of the South West Indian Ocean for 26 days of operations.

Probably made up of a high proportion of endemic species, and species new to science, organisms here are small, especially the benthic species. Due to flat terrain, the absence of gorgonians, large sponges and large upstanding algae, and due to the expansive covering of coralligenous algae, this underwater mount is a most remarkable ecological seascape.

A tentative sampling estimate shows 500 benthic species discovered, of which about 100 are new. The identification work will continue in the coming months, notably at the National Museum of Natural History in Paris.

For more information on the FFEM-SWIO project and the expedition, please contact Aurélie Spadone (aurelie.spadone@iucn.org) or Sabrina Guduff (sabrina.guduff@iucn.org)

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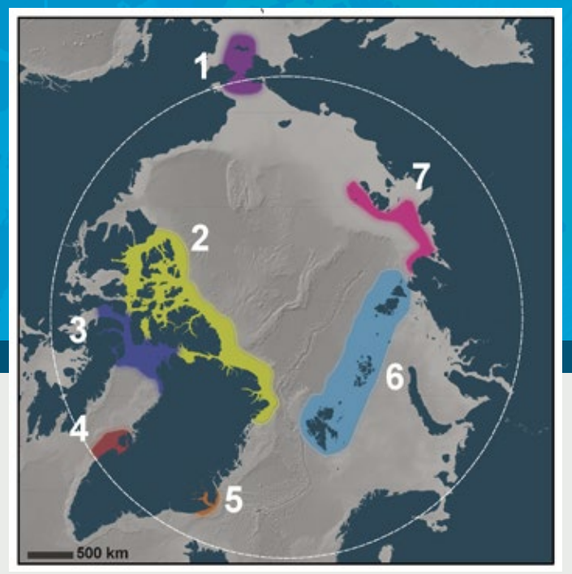
This expedition was made possible through the support of the French Global Environment Facility (FFEM) and the French Polar Institute IPEV.

Natural Marine World Heritage in the Arctic Ocean



Overview of sites identified as potential OUV in the Arctic (Map: Marine Geospatial Ecology Lab, Duke University (2016)

The Arctic Ocean is surrounded by continents and exhibits a distinct water-circulation, species composition and seasonal ice-patterns. With its 14 million km² it only covers 3% of the global ocean surface and receives relatively warm and saline water through two main branches of the Atlantic and only little quantities of Pacific water through the shallow Bering Strait. The Arctic region is now at risk from global warming, ocean acidification and accumulated pollutants, such as plastics and chemicals. As a consequence, the region is threatened by erosion and the melting of sea ice, changes in seasonal weather and a lower ice-coverage resulting in new areas for shipping and gas and oil exploration.


© Peter Lyngs

A multi-year project led by IUCN in partnership with the Natural Resources Defense Council (NRDC), WWF Canada and UNESCO World Heritage Centre's Marine Programme was able to identify ecologically and biologically significant areas in the Arctic marine environment. The results of the scientific assessment were matched with respect to the 10 criteria for UNESCO World Heritage status as region of Outstanding Universal Value (OUV). Ideally, the identified sites will make their way to the tentative lists by the relevant country and eventually will be registered on the UNESCO World Heritage list. As of today, only 5 sites north of the Arctic Circle are on the UNESCO World Heritage list (out of a total of 1052 cultural, natural and mixed sites).

Among others, the final report has been distributed at the Arctic Council Ministerial Meeting 2017 in Fairbanks and was presented to HSH Prince Albert II of Monaco, whose Foundation was the main funder of the project, in April 2017.

The outcomes of the project should support Arctic nations and relevant stakeholders to nominate potential world heritage sites in the Arctic marine environment for the tentative list. The proposed sites are as follows:

1 Bering Strait Ecoregion (including St. Lawrence Island)
The 85km wide Bering Strait and its surroundings stand as a very important migratory corridor for seabirds, fish and marine mammals. The region has an extraordinary biological productivity and hosts an estimated 12 million seasonally breeding seabirds. The region stands for major stages in Earth's geological history, including serving as a land bridge between North America and Eurasia during periods of low sea level.

2 Remnant Arctic Multi-Year Sea Ice and the Northeast Water Polynya Ecoregion
Multi-year sea ice hosts a highly-specialized biota and the region has been identified for its potential to sustain polar bears and their pray (mainly ice-dependent seals) throughout the 21st century with the greatest likelihood. The area of open water surrounded by the sea ice (polynya) have shown to hold a large stock of the critically-endangered Spitsbergen bowhead whale and the region serves as breeding habitat for the largest known colony of ivory gulls in Greenland.

3 The Northern Baffin Bay Ecoregion
Home to a large diversity of seabirds, fish and marine mammals, the Northern Baffin Bay Ecoregion, which holds the largest polynya of the Arctic, plays an important role as one of the most productive marine environments in Arctic waters.

4 Disko Bay and Store Hellefiskebanke Ecoregion
Characterized as a biodiversity hotspot, this region off Greenland's west coast serves as a breeding habitat for many marine mammals and seabirds. The very rich fauna on the seabed is threatened by bottom trawl fishing and increased shipping (with a risk of discharged oil, chemicals and waste).

5 The Scoresby Sound Polynya Ecoregion
The world's largest fjord system serves as an important region for several threatened species, for example bowhead whale, narwhal, common eider and polar bear. The Scoresby Sound polynya offers open water during winter and provides feeding opportunities for seabirds in spring.

6 High Arctic Archipelagos
The archipelagos are a region of high productivity and have a rich and varied benthic community and serves as an important feeding ground for fish, marine mammals and sea birds.

7 The Great Siberian Polynya
This important region provides winter habitat for Pacific walrus. It is potentially threatened by drilling activities as the polynya is covered with oil licenses. Additionally, the polynya serves as exporter of ice and saline shelf waters into the Arctic Ocean.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The UN takes bold step towards new treaty for marine life beyond boundaries

In July 2017, United Nation's representatives from land-locked, small-island, and coastal states -developing and developed alike - together with civil society, academics and inter-governmental organizations, including IUCN, rose as one in a standing ovation.

Why? To celebrate the successful conclusion of more than a decade of preparatory work culminating in overwhelming support for a new treaty to safeguard marine life beyond national jurisdiction. This support, combined with skilful diplomacy of Chair Ambassador Carlos Duarte from Brazil, resulted in a consensus recommendation to the UN General Assembly to take a decision as soon as possible to launch formal negotiations.

Francis Dejon Dais & colleagues applaud the conclusion of PrepCom4. Photo: IISD/ENB

Why is this important? Accounting for almost 60% of the global ocean, the high seas and international seabed Area beyond the limits of national jurisdiction play a critical role in maintaining life on Earth. In addition to providing food, jobs and nearly 50% of the oxygen we breathe, the ocean absorbs nearly 30% of the CO_2 emitted daily and has absorbed 93% of the heat resulting from increased CO_2.

IUCN delegation: Kristina Gjerde, GMPP/WCPA; Cymie Payne, WCEL; and Hiroko Muraki Gottlieb, IUCN Permanent Mission/GMPP. Photo by IISD/ENB | Francis Dejon

The global ocean is also home to a cornucopia of life that can help us understand diseases, discover new drugs, and even model new machines. Yet human activities are causing stress to the global ocean, and, by extension, to all life on the planet.

Threats stem from fishing practices, pollution from plastics, nutrients and noise, and the potential effects of seabed mining. In addition, increases in CO2 have resulted in rising ocean acidity, declining oxygen levels, warming waters and shifting current patterns. Scientists predict these combined stressors may undermine the ability of marine ecosystems and species to withstand further pressures.

The UN Convention on the Law of the Sea (UNCLOS) governs all ocean activities, but sets out rules only for certain sector-based activities such as fishing, shipping and seabed mining. Negotiated in the 1970s, UNCLOS was crafted for a simpler world where marine pollution was the main concern. Concepts such as biodiversity conservation, ecosystem-based management, precaution, and protected areas only became well-known in the 1990s when governments adopted the Convention on Biological Diversity.

UNCLOS contains important obligations to "protect and preserve the marine environment", to conserve living marine resources, and to cooperate. What it lacks are global mechanisms for implementing these obligations through, for example, representative systems of marine protected areas, environmental impact assessments (EIAs), or sustained initiatives for capacity building so all can enjoy, study and conserve the ocean beyond national boundaries.

Since 2001, IUCN's Global Marine and Polar Programme has been working to raise awareness of both the value of representative networks of MPAs for safeguarding biodiversity and the need to mainstream biodiversity considerations into sectoral management. In partnership with IUCN's World Commission on Protected Areas, World Commission on Environmental Law, Environmental Law Centre as well as a many States, NGOs, academics and scientific organizations, this effort has put IUCN in the forefront of UN negotiations, and resulted in numerous publications, workshops and diplomatic seminars to inform deliberations.

What next? It is too soon to tell when negotiations may begin. First, the UN General Assembly has to agree to a formal resolution to launch the negotiations. If it can reach agreement by late October 2017, then there is a chance the negotiating process could begin in 2018. Most people assume the process will take at least 2 years. There will probably be two sessions a year, of two weeks each.

The upcoming treaty negotiations will address 4 elements: area-based management tools including MPAs; EIAs; capacity building and technology transfer; and benefit sharing of marine genetic resources. Also on the agenda will be provisions for an institutional structure, such as a conference of parties, a science advisory body and mechanisms to assist all States to implement the treaty both through the new instrument and through other international organizations. International collaboration on marine scientific research will be key to build capacity and understanding of what is at stake, and to guide us to more sustainable solutions.

IUCN hopes you will join us in this unique opportunity to secure a more equitable and ecologically sustainable future for ourselves and our shared ocean.

For more information contact Kristina Gjerde:
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AGENCE FRANÇAISE POUR LA BIODIVERSITÉ
ÉTABLISSEMENT PUBLIC DE L'ÉTAT

Deep Sea Mining: Discovery of resources or destruction of life?

Deep sea mining is still an experimental field that targets minerals such as copper, nickel and cobalt, used for the production of technologies like wind turbines and hybrid cars. Mining may destroy deep sea habitats, eradicate rare and unique species, and introduce sediment clouds, noise, toxic chemicals, vibration and other forms of pollution into pristine environments. Ecosystem and species recovery may take decades to centuries. It is essential to take into consideration the full and long-term impacts of deep-sea mining before it occurs. This is no easy task, given the paucity of information on the world's largest biome.

Improved scientific research is essential in order to map and better understand the deep sea environment and the potential impacts of mining. Further to this, there is a need for better management systems and stakeholder engagement to assess the value of both the minerals and the living systems in the deep sea.

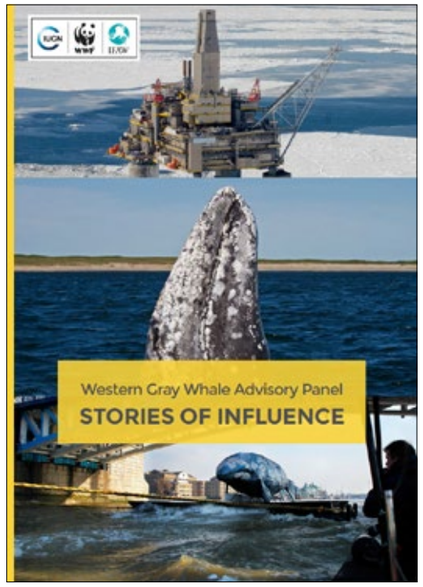
According to the UN Convention on the Law of the Sea, the deep seabed and its mineral resources beyond national jurisdiction are the common heritage of mankind, and do not belong to any one country. This stipulation also comes with a commitment to protect this heritage and to manage the resource for the benefit of mankind. Thus, all mineral exploration and exploitation activities must be sponsored by a State Party to UNCLOS, provided they exercise a high degree of "due diligence" in the process in adopting and enforcing protective laws. The International Seabed Authority (ISA) is the body tasked with the organisation and regulation of the international seabed area, and is still navigating the development of a legal framework for seabed mining.

A new IUCN report, to be released late in 2017, outlines how deep sea minerals are formed and extracted, as well as details the regulatory frameworks seeking to manage the demands and balances of deep sea mining. This report seeks to make pertinent science-based recommendations, especially given IUCN's status as an official observer to the ISA. IUCN seeks to act as a convening power, bringing together relevant stakeholders to address emerging issues around deep sea mining, plugging knowledge gaps and ensuring a precautionary approach.

IUCN and Sakhalin Energy renew their commitment to protect western gray whales

www.iucn.org/wgwap

An independent scientific panel created to protect critically endangered western gray whales in the Russian Far East will continue to monitor activities and provide recommendations to industry in the region for the next five years, according to IUCN.



For the last 12 years, the IUCN-led Western Gray Whale Advisory Panel (WGWAP) has been providing objective independent advice to Sakhalin Energy and other actors on the conservation of these whales and the marine habitat where they feed each summer and autumn off Russia's Sakhalin Island, just north of Japan.

Under a new agreement signed between IUCN and Sakhalin Energy for 2017-2021, the Panel will continue to advise how the company can reduce its impacts on the whales and their habitat.

For the next two years, the Panel will focus on:

1. Sakhalin Energy's Monitoring and Mitigation Programme update for its next seismic survey;
2. the Sakhalin Energy's implementation of the International Finance Corporation's Performance Standards on Environmental and Social Sustainability in relation to the western gray whales and their habitat;
3. the Joint Western Gray Whale Annual Monitoring Programme;
4. revision of Sakhalin Energy's Marine Mammal Protection Plan; and
5. the International Whaling Commission's work on gray whale protection (including analyses of population structure, cumulative impacts of multiple threat factors assessment and whale interactions with fisheries).

In the twentieth century, gray whales (Eschrichtius robustus) in the western Pacific were seriously over-exploited by commercial whaling to the point where, for a time, they were suspected of being extinct. Then a small population was discovered off Sakhalin Island during the 1990s. Today, this population is showing signs of a slow recovery – from an estimated 115 whales in 2004 to 174 in 2015.

A recent joint IUCN, WWF and IFAW report, WGWAP Stories of Influence, highlighted the business and conservation benefits that have resulted from an effective engagement among scientists, government and non-governmental organisations in the last 12 years.

The report stated: "WGWAP has shown that independent science-based panels can turn arenas of potential conflict into spaces for cooperation and even collaboration, and help companies in any sector reduce their impact on ecologically-sensitive areas or vulnerable species."

However, it also noted that further involvement and cooperation between the Panel and other actors in the region – including oil and gas operators and fisheries – is critical to ensure the long-term protection of the whales.

For more information, please contact Anete Berzina-Rodrigo (anete.berzina@iucn.org) or Giulia Carbone (giulia.carbone@iucn.org) from IUCN's Business and Biodiversity Programme.

Good news for Coral Reefs on Vamizi Island

With constant news of climate change causing coral reef bleaching or dieback, good news is hard to come by. A rare success story can be found on the island of Vamizi off the east coast of Africa, where cool currents, and local conservation efforts supported by IUCN, protect coral reefs from the effects of climate change.

We are in the midst of a third global bleaching event, now considered the longest and most widespread in recorded history. Mass bleaching occurs when global warming-induced elevated sea surface temperatures cause corals to become stressed and if, over a long enough time, mass deaths will occur. Indeed, in parts of the Indian Ocean, bleaching has affected coral by 60-90%. Situated in the northern Mozambique Channel, Vamizi is close to underwater channels bringing up cold water from the depths and cooling the surface waters so that corals here have a better chance of surviving climate change than elsewhere.

These water currents passing back and forth also bring up an abundance of nutrients from the sea floor for reef inhabitants and thus support a spectacular level of biodiversity. Between the cooler surface temperatures and food availability, the reefs here are under less stress and continue to support over 230 species of corals and 400 species of fishes.

The reefs are a vital source of food and livelihoods for the island's 1,500 local and seasonal fishers. When the Mozambique government created a law to allow community management of local fisheries, the local fishing council of Vamizi created a community marine sanctuary in 2006 to sustainably manage their reefs. With financial and technical backing from Friends of Vamizi and international organizations like IUCN, WWF, ZSL and AndBeyond, the council continues to manage their sanctuary today.

If the protection and support weren't in place, the reefs would have already been overexploited by migrant fishers. The profound dependency between the species making up an ecosystem like this can only be exploited so far before the system is vulnerable and both the biodiversity and the people who rely on it are negatively impacted. Because of its protection, the still healthy reefs here are more resilient to the stresses of climate change.

The island has attracted the attention of marine scientists like Dr. David Obura, Tessa Hempson, William Winram and Joana Trindade all of whom have been featured working on Vamizi's reefs in an award-winning documentary – Vamizi- Cradle of Coral. In it, Dr Obura – a renowned coral reef specialist – refers to the Vamizi coral reefs as being in the "highest diversity region in the whole of the Western Indian Ocean." In recognition of this, the area has been declared a Hope Spot – internationally acknowledged as critical to the health of the global ocean.

Dr Obura adds that it is very likely that the reefs around Vamizi are a cradle of coral for the whole region – a mother reef. These globally-significant reefs are a source of replenishment for other reefs – in this case of coral and fish that spread to other parts of the Western Indian Ocean. Uniquely for the whole of Africa, mass spawning of coral has only been observed and studied in the reefs around Vamizi.

The documentary by world-renowned cinematographer Mattias Klum takes us on a journey to witness this spawning event and the people who depend on the reef's health. To the villagers here, whose largely traditional way of life is still based around artisanal fisheries, this sanctuary has meant greater security for the future.

"We hope that if more people learn about the reefs, they will help us pass the important message of the community sanctuary, so we have enough fish to feed our children on Vamizi, and our children's children," says Mussa Mikidade, Vamizi resident and active member of the fishing council.

For more information, contact
Raphaëlle Flint (Raphaelle.Flint@iucn.org)

An Era of Hope

12% of the land on Earth is under protection, but this figure is around 3 times less for the world's oceans. Although MPAs do exist, over 90% of the oceans remain unprotected and this means that biodiversity is at risk of catastrophically plummeting. Dangers such as overfishing, pollution and marine traffic all put ocean ecosystems at risk, however some of these regions are more vulnerable than others. If a region has, among other features, special abundance or diversity of species, contains special, unusual or endemic species, habitats or ecosystems or holds significant economic, historic, cultural or spiritual values, then it may be nominated as one of the ocean's "Hope Spots". They are named as such because they give people hope; hope of a sustainable future for marine wildlife and the communities they border. Hope spots can be nominated by anyone, and it is the dedication of the people that choose to nominate these hotspots, along with large scale environmental organisations, that help to get sustainable decisions made. One such organisation is Mission Blue, founded by Dr. Sylvia Earle, who have had a hand in the ground breaking progress made in several hope spots all across the globe. For more information, contact Raphaëlle Flint (Raphaelle.Flint@iucn.org)

"The ocean is a big blue magnet that unites people who care"

Dr. Sylvia Earle

Vatika Bay Hope Spot

WHERE: Southern Greece

WHO: Pelagtos Cetacean Research Institute (PCRI), Alliance for the restoration of Cultural Heritage (ARCH), UNESCO, ARCHELON

WHY: The site is one of outstanding cultural and archaeological significance; the city of Pavlopetri, over 5000 years old, is submerged under 2-3m of water. The bay also supports endemic flora, which lay host to a rich diversity of marine fauna. In addition, the bay provides a migration route not only for Loggerhead turtles, but also for endangered Cetaceans who pass from the Ionian to the Aegean sea. With only 50 individual short-beak common dolphins left in the entirety of the Ionian sea it is vital that this bridge between the two waters is maintained in order to promote population mixing and species preservation.

PROGRESS: The Hope Spot was nominated by the PCRI in 2016 as a Natura 2000 Marine Area (under the protection of EU laws), however this is yet to be approved. ARCH have dedicated time to the promotion of the sites cultural and historical aspects in an effort to engage local and indeed the wider community in an effort to motivate people to get involved in the fight for a protected status. The community at Vatika bay , in collaboration with ARCHELON, have identified 129 turtle breeding nests and are focused on discovering more, and increasing their protection. The community effort does not end here, and locals are pressuring for stricter port regulations to be put in place so that the stunning juxtaposition of ancient civilisation and modern marine fauna can coexist in concert, free from human destruction.

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Hope Spot Hatteras

WHERE: A 200 mile-long stretch of barrier islands, on the coast of the outer banks, North Carolina

WHO: Plastic Ocean Project, students at UNC-Wilmington

WHY: The Cape of Hatteras is located adjacent to the Sargasso Sea in the North Atlantic and the upwelling of cold, nutrient rich waters from the Labrador sea taking place here means ocean productivity and species diversity is high.

PROGRESS: The aim of the Plastic Ocean Project is to reduce the plastic waste that enters our oceans, and to conduct research into the world's plastic industry and how this can be made more sustainable. In the context of the Cape of Hatteras, the group are trying to rebuke the decision made by North Carolina Congress that wishes to abolish the Plastic Bag Ban that was ratified in 2009. Along with the students of UNC-Wilmington, the distribution of this plastic debris is being studied and the data used in support of their project. With its online following gaining traction, along with educational videos, a 'fishing4plastic' volunteer scheme and outreach through art programmes, the group are making it harder than ever for their voice, and the plea of the Cape of Hatteras, not to be heard.

The Tropical Pacific Sea of Peru Hope Spot

WHERE: The Western Coast of Peru, where the warm waters of the Northern Equatorial current meets the Cold Humboldt current.

WHO: Peruvian Biologists, the Tropical Pacific Sea of Peru Marine Reserve, local fishermen and authorities, national and international NGOs.

WHY: The intense upwelling of cold, nutrient-rich bottom waters here creates high levels of primary productivity and this trickles down the food chain causing an abundance of various marine species. In conjunction with Economic factors making it easy for new restaurants to pop up all over Peru, there is an increasing over-fishing problem in the area that poses a serious threat to the region's biodiversity.

PROGRESS: Discoveries of new species by Peruvian Biologists and establishment of baselines is a crucial starting point. In addition, 120,000 signatures rallying a support campaign for the Hope Spot were presented to the President and although no action was immediately taken, it sparked interest and concern that will be hard to dampen down. A short film depicting the hope that the Tropical Sea of Peru has to offer was displayed at the Blue Ocean film festival, and received an honourable mention.

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Moreton Bay Hope Spot

WHERE: On the eastern coast of Australia, 14km from central Brisbane

WHO: Nominated as a hope spot by the Citizen scientists of Moreton Bay with continued support from local conservationists, tourism groups and educators including UniDive, Reef Check Australia and CoralWatch.

WHY: The waters of Moreton bay host a unique and rich variety of coral reefs, seagrass beds, mangroves and salt-marshes that provide suitable habitats for not only tropical but temperate fauna including Dugongs, Sea Turtles and Humpback Whales. Its close proximity to the metropolis of Brisbane presents multiple threats that include agricultural run-off, overfishing and coral mining. Degradation of the ecosystem is already underway, and efforts to conserve the biodiversity are ongoing.

PROGRESS: 16% of the area is already protected under 'no take' laws, and a further 8% has "conservation status", thus limiting the extent of recreational and commercial activity permitted. Trawling is prohibited in 30% of the water and 'go slow' regions have been introduced to protect slow moving species such as dugongs. The citizens of Moreton Bay have taken action into their own hands, with UniDive and other diving communities aiming to spread awareness and educate others on the importance of the ecosystems here, as well as CoralWatch and Reef Check Australia carrying out mapping and health monitoring of the corals in partnership with local volunteers.

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A commitment to reduce ocean noise pollution

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In 2017, a number of organisations and scientific community members helped established a Voluntary Commitment to Reduce Ocean Noise Pollution and submitted that to the UN Oceans Conference. This initiative aims to contribute to the implementation of Sustainable Development Goal 14 "Life Below Water".

Ocean noise pollution from human industrial activities can negatively impact marine life in many ways. Noise from various sources can interfere with communication, social functions, foraging, predator detections and degrade marine ecosystems. Noise has been generally increasing since the advent of powered marine transportation. Given that most human noise in the ocean is incidental in nature, quieting technologies are a logical approach to reduce negative impacts. Many of these modifications have little or no negative impact on industrial activities.

Numerous measures have already been put in place, including voluntary vessel-quieting guidelines within the **International Maritime Organization (IMO)**. Additionally, mitigation strategies related to reducing noise and ship strikes have been implemented in several jurisdictions. However, additional and sustained international collaboration and partnerships, leading to specific actions, are needed to ensure a **long-term and sustained reduction** of the impacts on marine life of noise pollution generated by industrial activity, particularly shipping and energy exploration.

The Partners will establish a multi-stakeholder Working Group to agree on mitigation actions (technologies, operational management measures, area- and species-specific measures) that businesses could implement in order to minimize ocean noise emissions. Given the cross-sectoral nature of the shipping industry, breadth of noise from other sources (e.g., offshore energy exploration, military) and the global scale of this issue, **collaboration and constructive dialogue among diverse industry, scientific, government and non-governmental organizations** will continue to be critical, as clearly demonstrated within the IMO vessel-quieting guideline development.

The main milestones in the process will be:
1. Situation analysis: this phase will generate an inventory of the primary noise sources, their geographical distribution, key industry actors, and current and best practices. This analysis will support the stakeholder analysis which will guide the membership of the Working Group originally established at the February 2017 UN Prep. Meeting, so that it will be fully representative (i.e., industry, scientific, regulatory, and conservation stakeholders). A decision-making and governance system for the process will be established by the partners early-on in the process.

2. Development of commitments: the WG will develop the science-based commitments, with all parties able to share their views, values and needs. The aim is to develop a set of scientifically rigorous, cost-effective and outcome-focused commitments, the implementation of which can be objectively measured. These will include noise reduction targets for individual noise sources (e.g., 3 dB reduction compared to nominal baseline levels per ship class in 5 years and another 3 dB the next 5 years).

3. Launch the commitments: Commitments will be made by industry and government participants on a rolling basis, with updates made periodically at intergovernmental fora, including at the 2018 UN Informal Consultative Process on Oceans and the Law of the Sea and at the 2020 IUCN World Conservation Congress.

4. Implement the commitments: Promote the Commitments among industry players and relevant government agencies and track implementation through a publicly accessible platform. By the end of 2020 and again in 2025, industry, government, scientists and NGOs who have contributed to the process will come together to share experiences and assess the progress made.

For more information, or if you would like to join or contribute to this initiative, please contact Howard Rosenbaum from Wildlife Conservation Society, an IUCN Member (hrosenbaum@wcs.org).

Douglas P. Nowacek, PhD from

Ecosystem management in the Pacific

Over the last 12 months and with technical support from IUCN, GIZ have implemented the Marine and Coastal Biodiversity Management in Pacific Island Countries (MACBIO) project. The MACBIO project have partnered with the University of Queensland to implement a Pacific-wide preliminary bio-regionalisation which can be used for the basis of ecosystem-based management and the selection and identification of representative networks of MPAs within the Pacific Island countries. For the countries of **Fiji**, the **Solomon Islands, Tonga** and **Vanuatu,** the sustainable management developments have been the most dramatic over this year-long period. Pacific Island countries partnering with IUCN's Oceania Regional Office also reflected their ongoing dedication to enhancing their ocean management through the Voluntary Commitments expressed at the United Nations Oceans Conference in June 2017.

Fiji

IUCN worked with government and stakeholders to define a draft vision and objectives for a 30% Network of MPAs, draft zoning (categories) for MPAs, review the legal basis of MPAs, identify special, unique marine areas in Fiji (inshore and offshore).

Vanuatu

Our work with the government on the Ocean Policy included not just policy development but support for national consultations on the Draft National Oceans Policy and preparation of a report on those consultations which provided insights of value across government sectors working in ocean management. One outstanding outcome of this project resulted from work with the Vanuatu Government to deliver the Pacific's inaugural National Ocean Policy in Vanuatu.

Tonga

IUCN worked with the government to provide technical and policy advice, via a cross-Ministerial technical working group on: a vision and objectives for their ocean, a review of the legal basis for marine spatial planning, identification of special, unique and priority use marine areas; development of draft ocean management areas (zones) to progress towards marine spatial planning.

Solomon Islands

We are assisting the Solomon Islands in its commitment to deliver on Integrated Oceans Governance by facilitating Cabinet-level support for action on the ground including convening twelve Permanent-Secretaries at an inaugural Ocean12 meeting to decide on the vision and objectives for their ocean and next steps.

IUCN provided support to the Wildlife Conservation Society and WWF in work with the Fiji Protected Area Committee to estimate costs of running a national MPA network. The project identified options to establish sustainable financing mechanisms. The study sites were Kubulau, Macuata and Lau. A cost model was developed to determine site-specific costs and the cost of a national network of MPAs. Options for sustainable funding mechanisms that were explored included: (i) opportunities to access the Environment Trust Fund in the Ministry of Local Government, Housing and Environment, (ii) establishing an Endowment Trust Fund (within or outside of Fiji), or (iii) using the existing trust fund established for Sovi Basin.

The Pacific Remote Islands Marine National Monument (the Monument) requested the advice of the IUCN-ORO's Marine Coordinator, together with three other experts, as to how to create an engaged community of relevance for the Monument. The report of this expert group's advice was the basis of a memo of recommendation to the leadership of both US Fish and Wildlife Service and NOAA, the joint managers. These agencies also funded the meeting.

Cooperation for mutual learning between large MPA managers in the Pacific continues to be facilitated by IUCN- Oceania with funding from the Fiji US Embassy. This cooperation includes the Phoenix Islands Protected Area (PIPA) in Kiribati, the Marae Moana of the Cook Islands, the Natural Park of the Coral Sea (New Caledonia) and the Pacific Remote Island Marine National Monument USA (PRIMNM) and has been in place since 2013. The most recent meeting, in Rarotonga, focussed upon exploring mechanisms to build partnerships in the priority areas of: planning, development and management processes of Large MPAs; enforcement; management of invasives and sustainable financing.

For more information please contact
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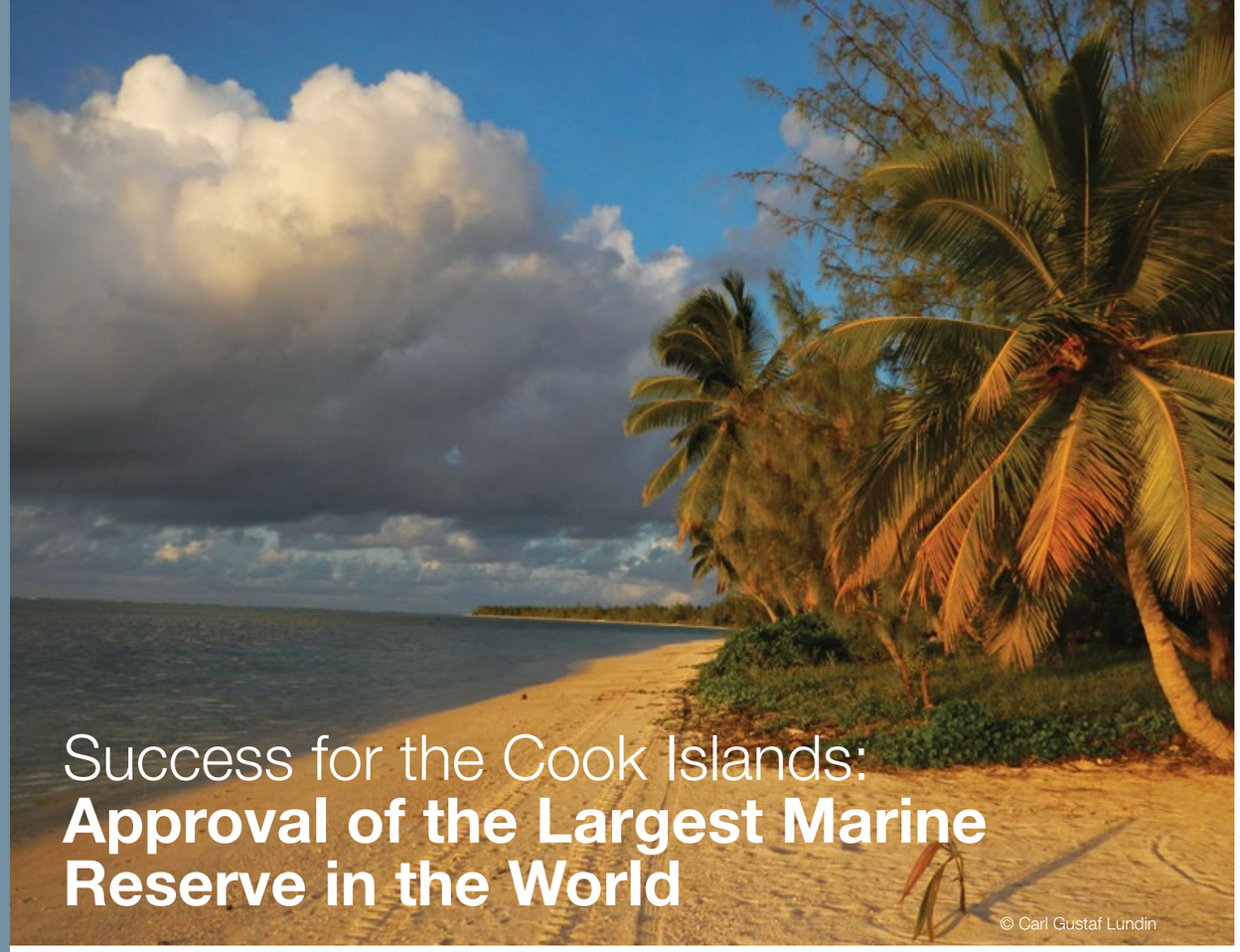

Success for the Cook Islands: **Approval of the Largest Marine Reserve in the World**

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In July of this year, it was announced that the Cook Islands is now part of the largest multi-use Marine Park in the world. Known as Marae Moana and spanning an area of nearly two million square kilometres including ocean and islands, this is a momentous occasion for the communities on Cook Islands, which occupy only 1% of this area and yet are responsible for making this happen. The Cook Island Exclusive Economic Zone (EEZ) will henceforth be known as the Cook Islands Marine Park.

The passing of this legislation was one that united the people of the Cook Islands, with no such bipartisan support having been seen on the island since its independence from New Zealand in 1965. This was achieved by the simple visions of one Islander: Kevin Iro. A local environmentalist, he is the co-chair of the Cook Islands Marine Park Steering Committee and believes in continuing the legacy of the forefathers of the Islands, "who considered the entire ocean as sacred and specially recognised it as one ecosystem". As such, the bill signifies "the sacredness of how Cook Islanders view our ocean space" says Iro. He also explains that it is "More than just the ocean" as it provides links to the ancestors of the island communities. It is this philosophy, Iro believes, that brought together the support of all political persuasions within the island.

The story of Cook Island has a particular significance as we approach IMPAC4 to be held in September 2017 in Coquimbo, Chile. IMPAC4 marks one of the last major milestones before 2020, which is the deadline for the Aichi targets. Target 11, on conservation of biodiversity in marine areas by managing a well-connected system of protected areas that are integrated into the wider landscape and seascape is of particular significance to IMPAC4 and the Marae Moana is a stellar example of how community and government action can help to achieve these targets.

Prime Minister of Cook Islands, Henry Puna, has worked closely with Iro and his team, and praised them in a public gallery of parliament. Their combined efforts had a united vision to turn the Cook Islands into the 'cleanest and greenest tourism destination in the whole wide world". Puna explained how the communities on Cook Islands were in such support of the proposal to implement an MPA that they wanted the entire EEZ to be contained within the MPA. This in itself shows immense progress for the project, as in September 2012 Puna had announced that only half of this area – one million square kilometres- would be under protected status.

> *"The Marine Park will provide the framework to promote sustainable development by balancing economic growth interests with conserving core biodiversity and natural assets in the ocean, reefs and islands. Socially, economically and spiritually we must all take care of it – and it is imperative that all those that live and exist both within and beyond its boundaries do recognise and respect its sanctity."*
>
> **Henry Puna, Prime Minister of The Cook Islands**

© Etika Rupeni Qica

In addition to the work of local islanders and governments, the input of IUCN in this project cannot be ignored. Global Blue, a financial services company headquartered in Nyon, Switzerland, provided a grant at this time to IUCN to support the Cook Islands Government and its partners to support the management of the Cook Islands MPA. Five years later, the results of these intimate collaborations are clear to see, and demonstrate just how powerful IUCN's involvement (as well as involvement from important partner Conservation International) in projects all over the globe can be.

The establishment of Marae Moana over the entire EEZ as opposed to the original one million square kilometres gives the Cook Islands MPA protection around every island and means no commercial fishing or mining are permitted. Exclusion zones, spanning a radius of 50 nautical miles, are present around each of the Cook Islands, and these are reserved specifically and exclusively for the enjoyment of the local people of each island.

The ultimate goals of the Cook Islands MPA are to provide respect for the ocean. Puna explains that not only does the ocean "bring revenue in terms of fishery and tourism and potentially sea-bed minerals", but also that it provides people with "clean air, clean water and clean food to nourish and sustain us". Without taking action today, this may not be the case tomorrow.

Carl Gustaf Lundin
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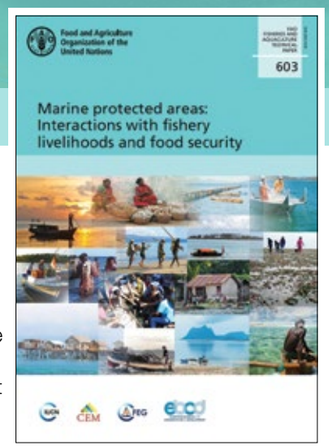
IUCN's Carl Gustaf Lundin with Kevin Iro, former rugby league star turned local environmentalist who has worked tirelessly to promote marine protection in his homeland.

The Commission for Ecosystem Management

Communities and MPAs



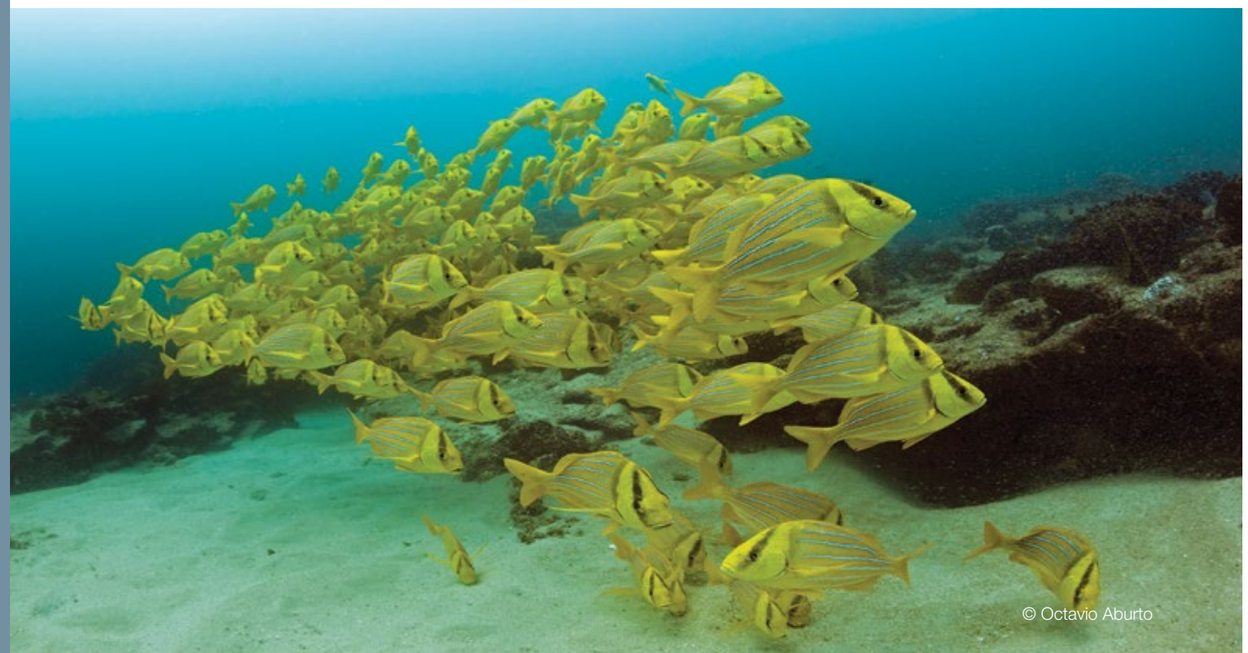
The Commission for Ecosystem Management is a network of professionals whose mission is to act as a source of advice on the environmental, economic, social and cultural factors that affect natural resources and biological diversity. This year, in association with the Food and Agriculture Organization of the United Nations, a publication was produced on MPAs and their interactions with fishery livelihoods and food security. In light of the forthcoming IMPAC4 in September, this report is of particular significance.

The report builds on the work presented at the IUCN World Parks Congress (WPC) held in Sydney, Australia, on 12-19th November 2014, and contains a collection of 12 papers. These papers review experiences with aquatic Protected Areas (PAs), Marine Protected Areas (MPAs) and protected areas in waters present inland. They focus on the interactions of these areas with the communities on land in the context of livelihoods and food security.

The impacts of implementing various protection parameters on certain areas are not all positive, and there are struggles that arise from doing so. These include “monitoring costs, lack of empirical evidence and deficient experimental designs and a lack of systematic ex ante and ex post assessments”. The collection of reports presents numerous case studies including those in Africa, Asia, Latin America and Oceania. When evaluated on a case-to-case basis in terms of cost-benefit analysis, and the degree of dependence by fishing communities it can be seen that there are areas of promise where the decision to assign an MPA would be of mutual interest to the communities and the ecosystem.

The report outlines several ways to overcome the problem of a lack of direct means to measure the impact of protection of an area on food security and poverty, including:

- dedicated policies
- clearer and more comprehensive objectives
- community participation
- communication between stakeholders
- building capacity to collaborate effectively
- incorporating a mix of technical and structural measures
- use of traditional knowledge
- systematic recording of empirical evidence
- compensation, alternative livelihoods and in come-generating activities.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Guiding Mediterranean MPAs through the climate change era

The Mediterranean Sea climate will undergo rapid changes over the next decades. Direct evidence of climate change is already being observed in the Mediterranean coast and in Marine Protected Areas (MPAs). Sea temperature is increasing and these changes are affecting native species distribution, the spread of alien and species associated with warmer waters and mass mortalities of benthic communities, among others. These changes not only cause impacts on marine biodiversity, but also on human activities - for example, the fishing season and catches. Although a growing number of people are beginning to recognize these changes in their surroundings, those are rarely associated to the concept of climate change, which is often perceived as “something going on far from home.”

Marine protected areas play an important role in climate change mitigation and adaptation, as they represent areas of reduced human pressure and concentrated conservation efforts. If well-managed, they can contribute to build resilience for both coastal communities and marine biodiversity. Unfortunately, climate change is not explicitly incorporated in the majority of MPA management plans in the Mediterranean and information to assist MPA decision making is limited and fragmented, along with important gaps in capacity and funding.

In order to further address these challenges, the MPA-Adapt project was developed by IUCN Centre for Mediterranean Cooperation and partners. The project focuses on the elaboration of collaborative and site-specific adaptation plans for five pilot Mediterranean MPAs. It started in November 2016 and it is the first of its kind for the marine and coastal environment in the Mediterranean. In the 30 months of its duration, it aims to build capacity for addressing the threats from climate change to coastal MPA ecosystems through capacity building workshops for effective management, development of risk assessments and an investigation of the potential actions and priorities needed to ensure the adaptability and the resilience of biodiversity and local communities. The project also aims provide guidance to MPAs managers and local stakeholders to implement and test climate change adaptation approaches.

The IUCN Centre for Mediterranean Cooperation’s specific role in the project is to assist the pilot MPAs in the implementation and development of activities on adaptation by providing expertise, guidance and capacity building opportunities. The project shall foster networks by improving the dialogue and coordination between MPA managers and scientists in order to create the first line of Mediterranean MPA sentinel sites. The inclusion of key coastal actors in the project (such as local administrations, fishermen and divers) will contribute to linking MPA management to integrated coastal management and provide information about the impact of climate change on biodiversity and ecosystem services justifying investment in further mitigation and adaptation measures.

The MPA-Adapt project (“Guiding Mediterranean Marine Protected Areas through the climate change era: Building resilience and adaptation”) is developed in the framework of the Interreg MED programme and is led by the Spanish National Research Council (CSIC). It involves seven other partners from the Mediterranean basin: the Italian National Institute for Environmental Protection and Research (ISPRA), the IUCN Centre for Mediterranean Cooperation, Brijuni National Park (Croatia), MPA Pelagie Islands (Italy), MPA Portofino (Italy), Port-Cros National Park (France) and the Corsican Agency for Environment (France).

Mangroves for the Future:
Working together to build MPAs for long-term marine resource management

Our oceans, coasts and wetlands are crucial for our survival. Mangrove forests, for example, sequester massive amounts of carbon dioxide from the atmosphere and protect coastal communities from cyclone storm surges, while coastal wetlands and coral reefs provide breeding and nesting grounds for hundreds of animal and plant species. Human populations rely heavily on these ecosystems for subsistence – for fish, crabs and molluscs; for mangrove wood that fuels fires and for mangrove leaves and fruits that yield marketable products; for shelter from sun and storms.

Mangroves for the Future (MFF) focuses on the role that healthy, well-managed coastal ecosystems play in building the resilience of ecosystem-dependent coastal communities in Bangladesh, Cambodia, India, Indonesia, Maldives, Myanmar, Pakistan, Seychelles, Sri Lanka, Thailand and Viet Nam. Establishing Marine Protected Areas (MPAs) around biologically diverse hotspots is one approach to protecting these vital ecosystems as they come increasingly under threat. When the boundaries of protected areas are delineated through stakeholder consultation and consensus, encroachment becomes less likely and enforcement becomes more effective. When local communities are involved in the governance and protection of their ecosystems, much of the pressure on both nature and governments can be relieved.

MFF started as a disaster response programme working in the six countries most affected by the devastating 2004 Indian Ocean Tsunami, and has now evolved into a strategic programme building resilience in ecosystem dependent coastal communities in 11 member countries. Recognising the importance of protecting biologically diverse hotspots, MFF is assisting member countries in establishing MPAs, including Locally-Managed Marine Areas (LMMAs).

Although all member countries are at different stages in developing their conservation systems and therefore have varying requirements, the need to improve management effectiveness is fairly consistent across the board. The programme believes it is a pressing necessity to improve climate change resilience and protect buffer zones, effectively manage ecotourism, identify sustainable financing mechanisms and, in order to ensure that the results will be equitable and sustainable, to accomplish these goals using a participatory management approach.
In Viet Nam, MFF is currently supporting Cù Lao Chàm Island, an MPA nested within the UNESCO Biosphere Reserve, to improve its management effectiveness. Since the island was declared an MPA in 2005, the site has become a popular tourist destination and local livelihoods have become highly diversified. Land value has also increased with the growth of investor interest, all of which is putting pressure on coastal resources and social relations within local communities. To further strengthen the MPA's resilience, MFF, along with several key stakeholders, facilitated an exercise at the end of April to examine the current management effectiveness of the MPA and develop a road map for revising the framework and zoning scheme. The revision of the MPA framework will take place over the next year through a series of consultations with stakeholders. This will pave the way for improved management of Cù Lao Chàm's coastal and marine resources.

In Myanmar, MFF collaborated with Fauna and Flora International (FFI) to bring stakeholders from Pyinbugyi Village Tract to visit an LMMA in the villages of Done Pale Aw and Lin Lun. This allowed local marine area managers to exchange best practices, providing the visitors from Pyinbugyi Village with ideas on how they can establish their own LMMA.

Over in South Asia, in Bangladesh, MFF is helping to identify the root cause of conflict and engage local communities in the stewardship of their resources. Nijhum Dwip – a park that acts as an important breeding ground for the hilsa and is home to the Critically Endangered spoon-billed sandpiper – is losing tree canopy as a result of its borders being hotly contested. Believing that local communities are the key to cooling the conflict and ensuring the resilience of wildlife, park and people, MFF is evaluating the park using the MFF Resilience Analysis Platform (RAP). RAP provides evaluators with a framework to pinpoint what is weakening resilience of social and ecological systems – border conflict, for instance – so that these gaps can be filled and both systems thereby fundamentally strengthened.

Through collaborations with the Pakistan Navy, the government of Balochistan and the Pakistan Ministry of Climate Change, MFF also contributed to the establishment of Astola Island as Pakistan's very first MPA. Following the IUCN World Conservation Congress in September 2016, where a motion was adopted to declare Astola Island an MPA, MFF Pakistan and the Pakistan Navy organised field visits for working group members to Astola Island to undertake situational analyses. MFF and IUCN also took steps to ensure that local communities and grassroots stakeholders were included in the governance and decision-making processes on the island. These efforts paid off in June this year, when the Government of Balochistan officially declared Astola Island an MPA. Other prospective MPA sites in Pakistan include Churna Island and Miani Hor, which MFF, is now working to afford the same protections.

Decision-makers at community, civil society and government levels, motivated to safeguard the livelihoods of present and future generations, have recognized the usefulness of tools provided by MFF, and are using them to achieve their aims. MFF looks forward to providing continued support in the establishment of MPAs and LMMAs for effective management of marine resources and protection of rights of local communities.

www.mangrovesforthefuture.org

Astola Island © MFF Pakistan

Bar-tailed godwit, Nijhum Dwip National Park, Bangladesh
© Muntasir Akash/IUCN

Harnessing the natural functions of ecosystems to combat climate change and its impacts

Sundarban women turned entrepreneurs by selling reed mats pose for a picture in Shyamnagar, Bangladesh. © Enamul Mazid Khan Siddique/IUCN Bangladesh

This blog post, originally published in Thomson Reuters Foundation News, highlights how Mangroves for the Future (MFF) harnesses the natural functions of ecosystems and women's strength in resource management to bring about better solutions to climate change mitigation and adaptation.

Near the Sundarbans, Bangladesh, home to the largest mangrove forest in the world, Promila makes her living by making mats out of a grass-like wetlands plant called 'reed'. Depending on size, these mats are sold at US$1 to $7 through a community enterprise established by Promila and her friends.

Thanks to the reed mat business, Promila and over 100 other women in her community no longer have to rely on collecting shrimp and fish – hence reducing pressure on the Kholpetua river.

Besides playing a role in mitigating climate change, the mat business has also brought about social benefits. The women now have a new-found confidence that enables them to negotiate prices directly with customers, while maintaining fruitful working relations with shopkeepers.

Implemented through MFF, an International Union for the Conservation of Nature (IUCN) partnership-based coastal programme, this alternative livelihoods initiative in Bangladesh is an example of a conservation intervention designed to conserve biodiversity by substituting one livelihood activity that causes harm to a species or a habitat with another activity that causes less harm.

A Nature-based solution

In just a few decades, reoccurring heat waves, rapidly rising sea levels, and more intense droughts, wildfires, and floods, are clear signs that our planet is experiencing a serious upsurge in climate change.

To tackle this existential crisis, there are two solutions that we can consider: the first is climate change mitigation, which includes swift reduction of global carbon emissions. The second is climate change adaptation, like Promila's story above, which refers to increasing our capacity to address the adverse impacts of climate change.

At IUCN, we believe that the best way to achieve climate change adaptation and mitigation is to utilise the natural functions of healthy ecosystems. Such nature-based solutions help protect the environment, and provide economic and social benefits.

Mangroves for example, are plants that have the ability to absorb very large amounts of CO_2 – making them a fundamental asset in our efforts to reduce carbon emissions.

Mangrove swamps also provide a more effective buffer that protects coastal regions from storm surges and tsunamis than man-made dykes. Sustainably managed mangrove forests further provide firewood, food as well as spawning grounds for fish.

Empowerment and community ownership

As we combat climate change, forgetting to engage local communities and empowering them in the process would be a major faux pas. These communities have, over centuries, developed practices that protect the natural resources on which they rely for their survival.

Using such knowledge will increase our chances of protecting ecosystems, which in turn will help us mitigate the impacts of climate change, and cope with its aftermath. Building on existing traditional knowledge not only satisfies local communities' expectations, but also provides a solid basis to address current and upcoming challenges.

It is therefore important to provide the right conditions for local communities – with a particular focus on women – to manage natural resources within and surrounding their territories.

Gender equality: the silver bullet

In many countries, women play a dominant role in natural resource management, and have traditional responsibilities such as growing food, collecting water, and being the primary caregivers for their families.

But, despite the fact that women play such a critical role in the conservation of ecosystems, their contribution is, unfortunately, often overlooked and undervalued.

The good news though, is that within the climate change paradigm, contributions of women are receiving increased attention, with more and more conservation experts calling for women to have greater ownership of the ecosystems on which they rely.

With their knowledge of sustainable resource-management at the household as well as the community level, women play a fundamental role in our collective response to climate change.

Using an improved cooking stove, Cox's Bazar, Bangladesh. © Enamul Mazid Khan Siddique/IUCN

More mangroves, less smoke: Enhancing resilience of coastal ecosystems and communities in Cox's Bazar

Implemented since May 2016 by local NGO Community Development Centre (CODEC), the "Restoration of coastal vegetation in Hnila Union Teknaf Peninsula" project aims to enhance the resilience of coastal ecosystems in the Teknaf peninsula of Cox's Bazar, and the communities which rely on them, in the face of climate change.

CODEC has since distributed approximately 9,000 indigenous saplings to over 400 community members for planting in households and institutional plantations. In addition, students and staff of Nheela High School were also provided with saplings to be planted at the school.

The project has also installed over 150 Improved Cookstoves (ICSs) in 150 households. These ICSs, also known locally as Bhandhu Chula, are designed to reduce fuel consumption and to curb smoke emissions from open fires inside dwellings. Before being introduced to the ICS, most of the women had to use traditional cook stoves, which emit large amounts of smoke.

WCPA News

2016-17: A year of success for MPAs

The last year has been a busy time for WCPA - Marine. The breadth and depth of the conservation work undertaken by WCPA has been demonstrated in the strengthening of existing programmes, to expanding WCPA – Marine into new areas. The heightened positioning of ocean issues by IUCN, WCPA-Marine and partners from the 2014 World Parks Congress in Sydney was consolidated and sustained through the 2016 IUCN World Conservation Congress in Hawai'i. This article provides a few highlights to illustrate the breadth and depth of its ocean conservation, protection and management work.

2016 has been a great year for the Ocean! Significant declarations by countries of MPAs were achieved during the year, further raising the amount of ocean under protection to a total of 14.4% or national waters and 5.7% of the global ocean.

Marine conservation was the most quoted individual topic of the World Congress with around 230 marine events held over the five days and the "Explaining Ocean Warming" report launched in this event has become the most downloaded IUCN report globally for the entire last quarter of 2016 with over 30,000 downloads of the main report up to now.

WCPA-Marine has been focused on many areas, building on the momentum to support a diversity of work on MPAs and the wider ocean environment. The expanded structure of WCPA Marine continues to flourish with a diversity of efforts and outcomes recorded around MPAs.

Alongside the fantastic efforts of Task Forces on Marine Mammal MPAs and Very Large MPAs, which respectively saw practical delivery start on Important Marine Mammal Areas (IMMAs) and the final steps towards the publication of Guidelines on the Design and Management of Large-Scale MPAs, work also developed on management effectiveness via our Green List and Management Effectiveness Task Force.


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Technical analysis was conducted under the IMPANA (International Marine Protected Area Network Agenda launched by IUCN and France at IMPAC3) to analyse the challenges facing MPA implementation Agencies. These and other priorities are being fed into the planning for IMPAC4 which will be hosted by Chile in September 2017.


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Significant contributions were also made by WCPA – Marine to the WCPA Task Force charged with developing new guidance for the CBD on other effective area-base conservation measures (OECMs) under Aichi Target 11.

Work on High Seas continued apace with meetings of the UN Preparatory Committee processes in full swing and with our WCPA High Seas MPA Specialist Group that continues to play a major role as part of the High Seas Alliance in successfully influencing strategy and policy for the development of a legally-binding agreement to facilitate, among other things, the establishment of MPAs in the High Seas.

Our work on marine World Heritage consolidated around the managers' network and joining forces to call for completion of the World Heritage framework to cover the entire planet – the High Seas - and not just the half populated by people.

Public interest in ocean work soared during the year and also consolidated in an increased involvement and cooperation with IUCN Patron for Nature Sylvia Earle and Mission Blue around Hope Spots. This resulted in a new online system being created for the public to propose areas worthy of protection, supported by a Hope Spot Council of experts with over 400 nominations received in the past couple of years.

WCPA-Marine efforts in developing outreach content were reinforced by the WCPA Marine Young Professionals Task Force this included running a competition for Emerging Blue Solutions to highlight and promote the projects of young people working for marine conservation around the world in collaboration with leading marine expert partners. The three YP marine winners were financially supported to attend the IUCN Congress in Hawai'i.

The year ended with the young professionals spearheading the development of a short inspirational and membership-focused explanatory film that provides an excellent description of the work of the Commission, its experts, key partnerships and global impact.

The most significant milestone of the new year for WCPA-Marine was the SDG 14 – Ocean Conference was held in New York from 5-9 June 2017. Overall the Ocean Conference was very successful and got a good engagement from many countries and a great representation of IUCN and WCPA. The Conference Outcome document: Our Ocean, Our Future: Call for Action was not a negotiated text, but rather prepared and approved by States based on preparatory work, perhaps more significant were the Voluntary Commitments, 1372 in total, with most coming from governments and then NGOs. However, many of the commitments were aspirational, and it will be difficult to measure how well they have been implemented.

Highlights of the Conference included IUCN's official side event 'From Problems to Solutions: Stewarding Our Oceans between major climate change impacts and nature-based solutions to adaptation and mitigation' and a significant help provided to build momentum towards the launching of an intergovernmental conference (IGC) for the negotiation of the new instrument for the conservation and sustainable use of marine biodiversity beyond national jurisdiction.

These achievements are just part of the wider work being undertaken by WCPA-Marine members, covering issues as diverse as Empowering young marine professionals, World Heritage in the High Seas, MPAs beyond national boundaries and Marine Protected Areas and Climate Change. The One-Programme initiative continues to thrive and strengthen with the support of other Commissions, the Global Protected Areas Programme, and the Global Marine and Polar Programme.

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WCPA
WORLD COMMISSION ON PROTECTED AREAS

SSC NEWS

Farewell from Yvonne Sadovy and Claudio Campagna

As Yvonne and Claudio come to the end of their 12 year run as Co-chairs of the MCSC, they reflect on the highlights and milestones that have taken place during this time.

Species are, unavoidably, at the centre of the international conservation agenda. They are also in the hearts of many conservationists. Yet, marine species, particularly many fishes and invertebrates - including the corals, as well as sea grasses - have been, until recent times, somewhat neglected compared to their terrestrial counterparts. However in recent years, this has changed drastically.

Particularly within the last decade or so, the Species Survival Commission has made a special effort to place marine biodiversity at the epicentre of IUCN conservation endeavours. Starting with the global marine species assessments, which increased significantly the number of marine life forms that have been red listed. Expanding and reaching all corners of conservation action, the marine realm is at the forefront of conservation news.

As co-Chairs of the MCSC of the SSC during a decade or so, we had the chance to scrutinize the major challenges to the survival of marine species in all the oceans of the planet. We gathered experts of insurmountable knowledge who identified key problems and proposed solutions. We recognized the unintended capture of species by large scale fisheries and the increasingly non-selective focus on marine invertebrates and fishes for non-direct human food (such as the massive volumes being used as fish feed) as priority conservation goals and will finally be completing our project on this key issue in late 2017. We celebrated natural marine spectacles and highlighted 12 marine stories in the popular book and its promotional film 'Adrift'. In coordination with the IUCN specialist groups, we expressed the relevance of analysing regional fisheries management organizations as a function of threatened species in their jurisdictions. We helped prioritize and supported assessments of species exposed to commercial fisheries and attempted to increase the strength of the network of marine expertise, suggesting the advantages of 'One Marine IUCN', one common vision for the many initiatives that IUCN sustains on marine issues. A strong bond with the Marine Program and with the WCPA made possible a rethinking of priorities and integration of strategies.

This is our farewell message. We are now leaving the rudder in the hands of the new Chair, our friend and colleague Amanda Vincent. We are thankful to Holly Dublin, who created the MCSC when Chair of the SSC, and to Simon Stuart, who, during two consecutive mandates, offered the intellectual and administrative conditions for us to operate with freedom. The members of our MCSC can be found in the newsletters that we produced with the excellent help of Olivier Hasinger. Finally, the Species Program, with Jane Smart at its head, always generously provided the required support, guidance and encouragement.

The ocean is highlighted, yet many species continue to be at risk. Fisheries struggle to achieve sustainability, sharks are finned, and plastics are eaten unwittingly by turtles, seabirds and whales. There are more problems than ever before. As such, the experts in their SDGs and the Programmes and Commissions of IUCN work incessantly to tackle as many problems as possible, and to reveal these dangers to the world in order to change perspectives and force sustainability to be at the core of policies. The new MCSC will certainly have as much to do as the one that dissolves today. To them, our warmest wishes of success!

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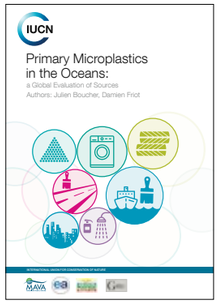
MCSC Co-chairs Claudio Campagna and Yvonne Sadovy at the IUCN Chairs' meeting in Abu Dhabi

Low-value mixed species fish captured to use as fish feed in mariculture operations in China. Photo from Fujian Province taken during field work on this fishery, part of our MCSC work. Results indicate that about 50% of China's domestic catch is used as feed. Photo. Calton Law

New Publications and Resources

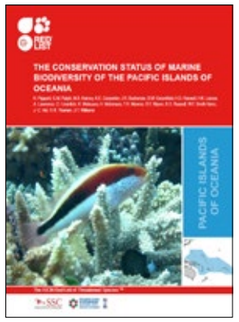


Primary Microplastics in the Oceans

Plastic has penetrated everyday life, and the disadvantages of plastics are becoming more and more visible: large quantities of plastics leak into rivers and oceans, with adverse effects to marine ecosystems and related economic activities. This report is among the first of its kind to quantify primary microplastics leakage and to demonstrate that these primary microplastics, in the form of tyre dust (from cars) and synthetic fibers (from washing clothes), are globally responsible for a major source of plastic pollution in the oceans.

Natural Marine World Heritage in the Arctic Ocean

The 1972 UNESCO World Heritage Convention unites nations behind a shared commitment to preserve the world's outstanding cultural and natural heritage for the benefit of present and future generations. This report presents the results of a scientific assessment of globally significant ecosystems in the Arctic Ocean that may be of Outstanding Universal Value (OUV) with respect to the natural criteria for World Heritage status. The report is intended to advance recognition and conservation of globally significant natural marine sites in the Arctic, a region which is currently under-represented on the World Heritage List. The report does not assess potential OUV related to cultural heritage, which was beyond the scope of the project.

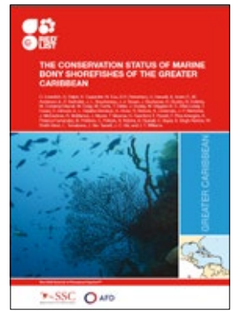


The Conservation Status of Marine Biodiversity of the Pacific Islands of Oceania

The Pacific Islands of Oceania are small islands and atolls occurring over a vast expanse of ocean that are characterized by immense biodiversity and endemism. This project represents a major expansion of the coverage of the Pacific Islands' marine biodiversity on the IUCN Red List of Threatened Species. The threats to Pacific Island marine biodiversity are many. Results from IUCN Red List initiatives such as this can guide decision-making and conservation prioritization of Pacific Island governments, non-governmental organizations (NGOs) and the private sector. By shaping regional and national policies with these data in mind, priority sites for maintaining marine biodiversity can be identified and conserved.

The Conservation Status of Marine Bony Shorefishes of the Greater Caribbean

The greater Caribbean biogeographic region covered in this report (representing 38 countries and territories) encompasses an outstanding marine bony shorefish richness of approximately 1,360 species, with many (53%) being endemic. This report provides an overview of the conservation status of greater Caribbean shorefishes, with detailed information available through the IUCN Red List, and gives recommendations.



Visit the marine and coastal portal of the PANORAMA – Solutions for a Healthy Planet web platform, and explore a wide range of success stories in marine and coastal conservation and sustainable development!

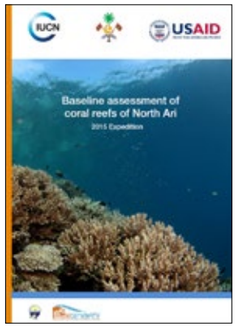
www.panorama.solutions/marinecoastal

Status of Coral Bleaching in the Maldives 2016

This report represents the most comprehensive effort to monitor coral bleaching in the Maldives to date, using a combination of citizen science and expert scientist (governmental, academic and non-governmental) data sets. The 2015-2016 El Niño weather phenomena and associated sea surface temperature anomalies in 2016 caused one of the largest recorded episodes of mass bleaching in the Maldives.

Baseline assessment of Coral Reefs of North Ari: 2015 Expedition

Baseline assessment of coral reefs of North Ari is the first study to investigate spatial variation in reef condition within the context of different human pressures in one atoll in the Maldives. Specifically, this study aimed to investigate whether and how coral reef condition (fish biomass, structural complexity, coral composition and live cover, and foraminiferal assemblages) vary spatially among reefs with different population levels and/or under different management regimes within North Ari atoll.

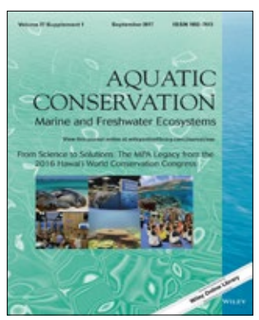


Effective planning strategies for managing environmental risk associated with geophysical and other imaging surveys

This document is a practical guide to the responsible and effective planning of offshore geophysical surveys and other forms of environmental imaging. It will be useful for both understanding the impacts of imaging surveys on managed resources and planning future activities. To increase consistency in both the evaluation and mitigation of potential effects, the process described in this document involves a systematic evaluation of activities and potential impacts, recognizing that these may impinge on multiple regulatory jurisdictions. The focus is on marine mammals; nonetheless the elements of this planning tool are applicable and adaptable for application where the focus is on any locally important species, e.g. fishes, sea turtles and seabirds.

From Science to Solutions: The MPA legacy from the 2016 Hawai'i World Conservation Congress

This report is the third in a series of Special Issues of the journal *Aquatic Conservation: Marine and Freshwater Ecosystems* presenting the outputs and latest thinking from global MPA conferences. The first Special Issue reported on the outcomes of IMPAC 3 in Marseille in 2013 and the second from the World Parks Congress in 2014. This edition reports from the IUCN Congress held in Hawai'i in 2016. It will be launched at the IMPAC4 in Chile in September 2017 and contains 12 papers covering a range of topics from the development of a network of MPAs in the Russian Arctic and the development of thinking around OECMs to the implications of MPAs for aquaculture and blue carbon protection and management. For more information, please contact: j.baxter4@btinternet.com.



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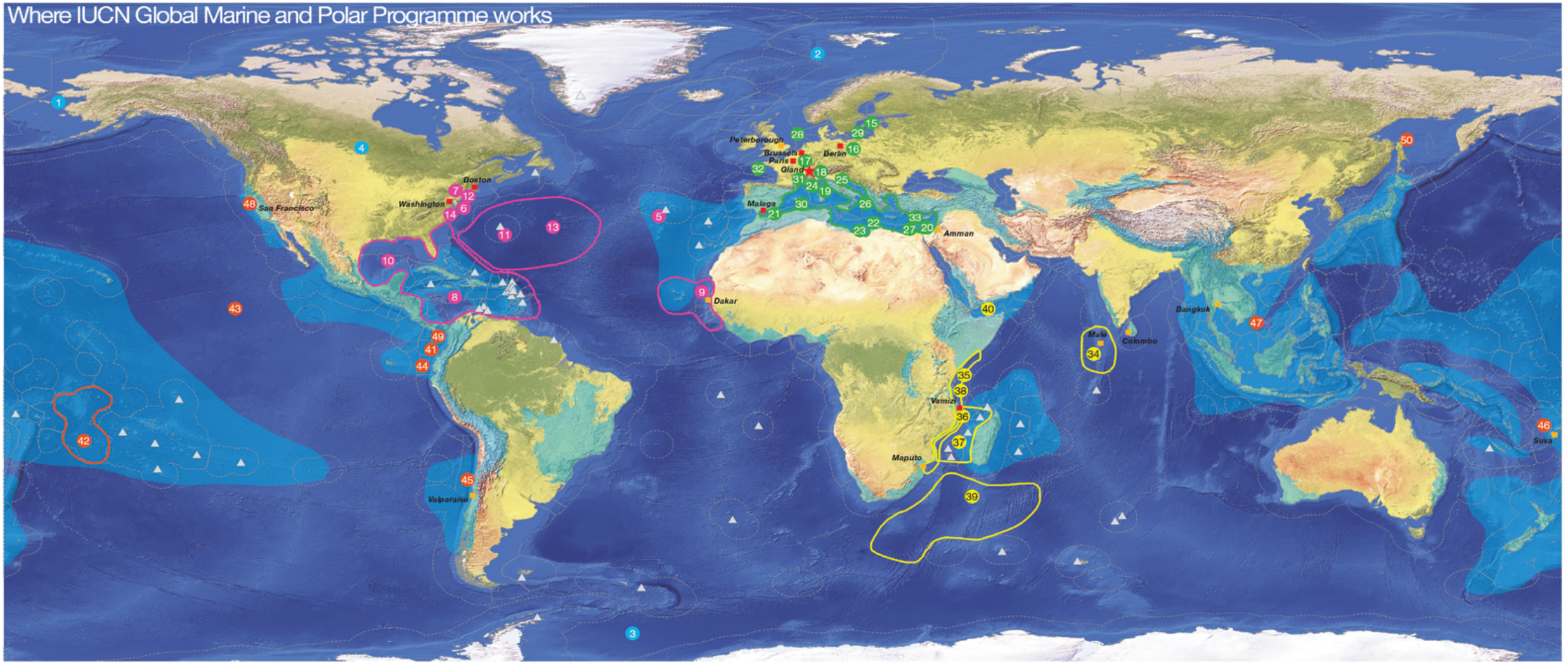
Where IUCN Global Marine and Polar Programme works



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- GMPP Offices
- GMPP Collaborators

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Dakar:	*Idriss Deffries*
Malé	*REGENERATE team*
Maputo:	*Manuel Menomussanga*
Peterborough:	*Dan Laffoley*
Suva:	*Leanne Fernandes*
Valparaiso:	*Patricio Bernal*

- EEZ (Marine regions)
- Marine Biodiversity Hotspots (CI)
- Land Biodiversity Hotspots (CI)

MAJOR PROJECTS

- BEST Initiative – Ecosystem Profiles and Grant Mechanism Programme for Projects in the European Overseas

Polar regions

1. Arctic Marine World Heritage Project
2. Microplastics in the Arctic
3. Network of Antarctic MPAs
4. Research on Plastics, Ice and Climate Change

Atlantic Ocean & Caribbean

5. Azores Plastics Project
6. Global Mangrove Alliance
7. Law of the Sea Implementing Agreements, NY
8. LME Google Layer & Toolkit
9. Marine Protected Area & Fisheries
10. Ocean Deoxygenation Project
11. Ocean Risk Project, Bermuda
12. Prep-com BBNJ / The Ocean Conference
13. Sargasso Sea Commission
14. SEVENSEAS Magazine

Europe, Mediteranean & Red Sea

15. Baltic Marine Plastics Project
16. Blue Natural Capital Criteria Project
17. Blue Natural Capital Finance - Luxembourg
18. Blue Solutions
19. Climate Change Report Cards - Corsica
20. Deep Sea Lebanon (Oceana/IUCN/RAC-SPA)
21. Fishing Governance in MPAs
22. Invasive Species in MPAs: MedMis network
23. Marine Monitoring & Indicators - North Africa
24. Marine Protected Areas & Aquaculture - Monaco
25. MPA Adaptation in Mediterranean
26. MPA Networks & Integrated Zones Management
27. MPA Strategies, Network Development and Fisheries
28. North Sea Industry Engagement
29. Ocean Warming
30. PlastiMed
31. Safe our Mangroves Now
32. Sustainable Aquaculture Fish Feed
33. Sustainable Management of Posidonia-beaches

Indian Ocean

34. Coral Reefs & Climate Change (REGENERATE) - Maldives
35. Marine Plastics & Coastal communities
36. Marine Research & Conservation Centre - Vamizi
37. Marine Spatial Planning - Mozambique Channel
38. Scoping Blue Carbon Opportunities
39. SW Indian Ocean Deep Sea Ecosystems - Walters Shoal
40. Yemen LNG Scientific Advisory Panel

Pacific Ocean

41. Blue Action Fund
42. Cook Islands Marae Moana Marine Park
43. Deep Seabed Mining
44. GEF Blue Forests Project
45. IMPAC4 - La Serena, Chile
46. MACBIO
47. Marine Plastics & Coastal Communities
48. Mission Blue Hope Spot Project
49. Ocean Acidification RUG - Colombia
50. Western Gray Whale Range-wide Conservation Initiative

Note: Most projects have a wide geographical scope. In these cases the marker shows either the location of the office in charge, of a specific study/pilot site or of the approximate centre of the corresponding region.

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