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Questions about Marine Protected Areas (MPAs)

SUMMARY

The problem of MPAs is not the lack of knowledge about the marine environment, but managing of people, that is, managing the different uses in these areas. Thus, it is much easier to identify MPAs than to manage them effectively, not only in waters under national jurisdiction, but even more so in areas beyond national jurisdiction. Another problem is not enough collegial and transparent scientific committees to ensure good scientific governance of MPAs.

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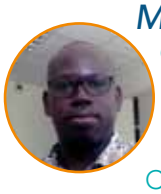

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Educational activity with a class from the Jean Monnet school in Le Conquet at the Iroise Marine Nature Park (photo © Virginie Gervois / French Biodiversity Agency)

MPAs: Does coverage necessarily mean effective protection?

At the Nagoya Conference in October 2010, **the States Parties to the Convention on Biological Diversity (CBD) committed to achieving the Aichi Target 11 goal of 10% MPA coverage by 2020**. The Aichi Target 11 calls for 10% of marine and coastal areas to be conserved through ecologically representative and well-connected protected areas managed effectively and fairly alongside other area-based conservation measures. According to the World Database on Protected Areas (WDPA), 7.3% of the ocean is currently protected. **From a quantitative point of view, the Aichi Target 11 will probably be achieved by 2020.**

The percentage of MPAs created in waters under national jurisdiction is much higher than that in areas beyond national jurisdiction. To date, 16.8% of waters under national jurisdiction, which represent 39% of the global ocean, have been designated as protected areas, against 1.9% of areas beyond national jurisdiction, which account for 61% of the world ocean. MPAs can be more easily created by governments in waters under national jurisdiction, for which specialized legal frameworks exist.

The Parties to the Convention on Biological Diversity can achieve the Aichi Target 11 with very different levels of nature protection. "Other area-based conservation measures" within the Aichi Target 11 are more flexible arrangements from a nature conservation standpoint than MPAs. Whatever the type of MPA, its main objective is the conservation of biodiversity. Area-based measures that protect nature but whose main objectives are different, such as sustainable fishing, and military or port activities, are not considered to be MPAs according to the International Union for Conservation of Nature. Any industrial activity and development of infrastructure that is damaging to the environment due its associated ecological impacts is usually not compatible with MPAs. Some activities, however, can be authorized in an MPA, or in certain parts of an MPA, if they are compatible with its conservation objectives.

MPAs and the World Conservation Congress in Marseille in 2020

Interview with *François Simard*, Deputy Director and Senior Advisor for Fisheries, Global Marine and Polar Program, International Union for Conservation of Nature

The World Conservation Congress of the International Union for Conservation of Nature is a major international event on biodiversity whose next edition is due to take place between 11 and 19 June 2020 in Marseille. This Congress will be followed by **the Conference of the Parties to the Convention on Biological Diversity** in China in the last quarter of 2020, of critical importance. Indeed, the Conference **will assess progress towards achieving the Aichi Targets and adopt a new strategic plan for 2021-2030. The World Conservation Congress is a decisive step for mobilizing** governments and civil society as it is intended to renew the international community's commitment to halting the erosion of biodiversity.

Several regional congresses will take place from now onwards so that Members of the International Union for Conservation of Nature including States, government agencies, NGOs, indigenous peoples' organizations, scientific and academic institutions and business associations can decide upon the topics to be addressed at the World Conservation Congress in Marseille. The Aichi Targets, including that related to MPAs, will be discussed in detail. **The resolution of the 2016 edition of the World Conservation Congress in Hawaii encouraged Members of the International Union for Conservation of Nature to designate and implement the integration of at least 30% of each marine habitat** in a network of highly protected marine areas and to take other effective conservation measures. Scientific evidence advocates the full protection of at least 30% of the global ocean to reverse current adverse impacts, increase resilience to climate change and preserve long-term ocean health.

Small-scale fisheries at the National Park of Calanques, Marseille (France) (photo © Mylène Zizzo, The National Park of Calanques)

From a qualitative point of view, significant progress is needed to achieve the Aichi Target 11. While the creation of MPAs is following an increasing trend, the associated legal, economic, human and material resources required are often not provided by the countries. Often management plans are not adopted either. However, according to the Aichi Target 11, MPAs need to be effectively managed. The International Union for Conservation of Nature highlights that MPAs must have a well-defined and agreed boundary, a management plan, and the resources and capacity required for their implementation. Moreover, the effectiveness of MPAs is determined by the type of governance framework, whereas outcomes depend on the ambition of the MPA objectives.

MPAs in the high seas

What is the progress of the United Nations' legal framework concerning MPAs in the high seas?

Member States of the United Nations have initiated a process to adopt an international legally binding instrument on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ) to complement the United Nations Convention on the Law of the Sea signed at Montego Bay in 1982. This process could lead, among other measures, to the creation of new MPAs in the high seas. To date, **there is no global legal framework to establish a coherent network**

of MPAs in areas beyond national jurisdictions. This situation is therefore set to evolve. The first session of the intergovernmental conference on an international legally binding instrument under BBNJ took place between 4 and 17 September 2018. Following this session, a document is under preparation to facilitate text-based negotiations.

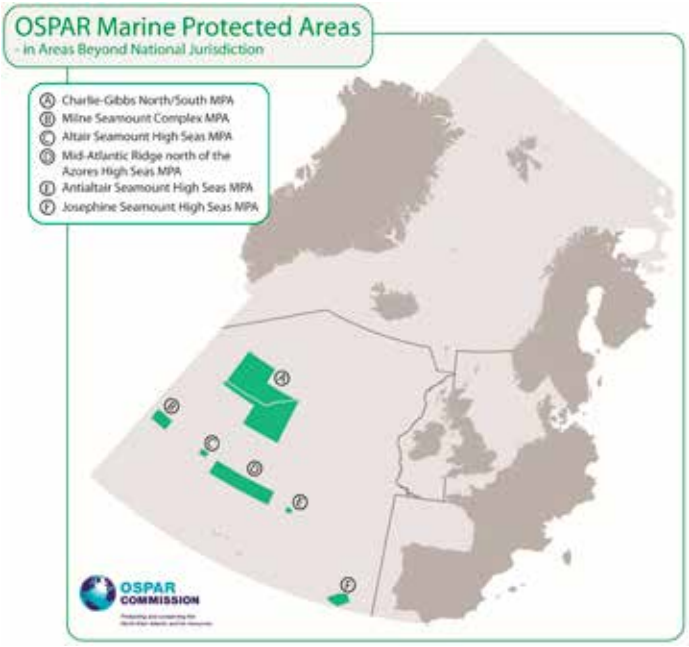
According to *Christophe Lefebvre*, who was advisor for the ocean at the French Biodiversity Agency, "***concerning MPAs in the high seas, the future agreement will have to determine the legal nature, the decision-making authority, how to ensure the acquisition of knowledge, the financing, the surveillance...*** *It will be necessary to develop the legal framework. Today, in the high seas, only the flag State of the vessel in question may record an infringement. The authority that will manage MPAs will need the legal and material means to do so."*[1]

[1] AFB, 2017. Haute mer : AMP à l'horizon ?, L'aire marine n. 39. Paris : Agence Française pour la Biodiversité.

MPAs in the high seas

- The **Pelagos Sanctuary** agreement, signed by France, Italy and Monaco in 1999, is an attempt to establish an MPA partially located in the **Mediterranean** high seas.
- The **OSPAR** Commission endorsed in 2010 and 2012 the creation of **seven MPAs** covering 9.6% of the high seas of the OSPAR area.
- In 2009, the **Commission for the Conservation of Antarctic Marine Living Resources** created **a first MPA** covering 94,000 square kilometers in the south Atlantic on the South Orkney Islands southern shelf. In 2016, **a second MPA** of more than 1.55 million square kilometers was established in the Ross Sea, a deep bay in the Southern Ocean.

Figure 1: OSPAR: MPAs in the high seas.



Source: © OSPAR Commission 2012, www.ospar.org

Are there currently any MPAs in the high seas?

Regional legal frameworks already exist in some Regional Sea Conventions for the establishment of MPAs beyond national jurisdictions: the 1995 Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean as part of the Convention for the Protection of the Mediterranean Sea against pollution (Barcelona Convention), the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) and the Commission for the Conservation of Antarctic Marine Living Resources.

What can the high seas negotiations do for Regional Sea Conventions? The case of OSPAR.

OSPAR can create MPAs in the high seas but it does not have the authority to regulate fisheries, shipping or the seabed. Within such a framework, and despite its efforts, **OSPAR has not yet succeeded in setting up a management framework for these MPAs in the high seas. The States Parties to other international regulatory instruments should adopt management measures within this framework.**

OSPAR and the Northeast Atlantic Fisheries Organization have a largely common membership, whereas the International Commission for the Conservation of Atlantic Tunas, the International Maritime Organization and the International Seabed Authority have a much broader membership. **The United Nations negotiations to regulate the high seas could render cooperation between the various organizations operating within MPAs in the high seas compulsory.**

OSPAR decisions related to MPAs in the high seas are only binding on its Member States. **The BBNJ agreement could enforce OSPAR MPAs, making the related decisions mandatory for any country that has ratified the agreement.** According

to the straddling stock agreement, an existing United Nations Convention on the Law of the Sea implementation agreement, any State which is a party to the agreement can authorize the Member States of a Regional Fisheries Management Organization to check that vessels flying the State's flag in the high seas under the jurisdiction of the fisheries organization comply with the fisheries organization's rules even if that State is not a member.

The decision-making authority created by the United Nations will first need to endorse the MPAs established by OSPAR and an institutional framework will have to be defined to enable effective coordination between the BBNJ agreement and Regional Sea Conventions. Moreover, **other Regional Sea Conventions do not have a mandate on the high seas,** and fulfilling their current mandate is already challenging. In addition, there is the question of the limits of the areas regulated by Regional Sea Conventions if their mandate is extended to the high seas. Finally, collegial and transparent scientific committees will need to be created for these other Regional Sea Conventions, which will require resources.

The Commission for the Conservation of Antarctic Marine Living Resources: A special case.

Research and monitoring in the Ross Sea MPA in the Antarctic. Antarctic toothfish and diver (photo © Rob Robbins, U.S. Antarctic Program)

Unlike other Regional Sea Conventions, the Commission for the Conservation of Antarctic Marine Living Resources has a mandate to regulate all harvesting activities. Moreover, the countries which have activities in this area are included in the 25 Members of the Commission. **The adoption of the creation of MPAs can be complex, however.** An EU-Franco-Australian project for the creation of an MPA in eastern Antarctica, covering about one million square kilometers, was not endorsed because of the concerns of some Member States over fishing rights in this area. To date, there are only two MPAs in the high seas.

MPAs in France: How can their effectiveness be evaluated?

Each year, the Iroise Marine Nature Park publishes its dashboard showing the long-term trends regarding its health. The dashboard consists of indicators, which are simple means of assessing a complex reality, corresponding to each of the objectives of the Park's management plan. Its purpose is to measure, year after year, the state of the natural and cultural heritage, the quality of the water, the professional and the leisure activities and governance. The dashboard enables the members of the management board to understand the relevance of their actions and adapt their policies accordingly.

Field staff on a wintering bird counting mission in the Iroise Marine Nature Park, in Douarnenez Bay (photo © Fabien Boileau / French Biodiversity Agency)

The originality of the dashboard of the Iroise Marine Nature Park lies in its deliberately highly educational focus. Overall, the work accomplished has resulted in the Park being recognized as being among the best managed MPAs since it has joined the Green List of the International Union for Conservation of Nature.

School workshop on the "noises of the sea" as part of the 2016-2017 educational program at the Iroise Marine Nature Park (photo © Virginie Gervois / French Biodiversity Agency)

Several French Biodiversity Agency staff are involved in various departments in **setting up, where relevant, common indicators for marine nature parks, and making them compatible with the different reporting requests for EU regulations such as Natura 2000 and the Marine Strategy Framework Directive.** Today, nine parks - including the Iroise Marine Nature Park - form a network of marine nature parks, which reinforces the relevance of an evaluation system with a common base of indicators able to measure the effectiveness of these parks in taking better account of the marine environment.

The Iroise Marine Nature Park Management Board meeting on 6 February 2018, in Le Conquet (photo © Oscar Chuberre)

Table 1: Dashboard - the Iroise Marine Nature Park

Chapter	Number of indicators	Undetermined	Very poor	Poor	Average	Good	Very good
Natural heritage	17	6	1	1	3	4	2
Professional fishing	21	6	1	1	6	5	2
Water quality	16	0	0	2	4	8	2
Tourism Water sports	9	4	2	2	0	1	0
Environmen-tal education	7	3	0	0	4	0	0
Cultural heritage	4	0	0	0	1	2	1
Governance	5	1	1	0	2	0	1
TOTAL	**79**	**20**	**5**	**6**	**20**	**20**	**8**

Source: The Iroise Marine Nature Park (2018): http://www.parc-marin-iroise.fr/Le-Parc/Objectifs/Tableau-de-bord (in french).

Are MPAs effective in restoring fishery resources and their habitats in Senegal?

Given the failure of traditional fisheries management policies in some areas, MPAs have been promoted in Senegal as effective tools for the restoration of fishery resources and the conservation of biodiversity. The Bamboung MPA, located at the heart of the Saloum Delta Biosphere Reserve, covers an area of 7,000 hectares. It is a medium-sized bolong with very limited entry points. The Joal-Fadiouth MPA covers an area of 17,400 hectares and includes an extensive mangrove area. **These two MPAs attract large numbers of tourists** because of their historical,

Sine Saloum Delta from the air, Bamboung MPA (photo © Hellio and Van Ingen)

cultural and architectural heritage, their landscapes and their fauna (in particular, the Palearctic water birds). These assets can be used to generate income to support certain MPA management costs. The Cayar MPA of 17,100 hectares is located in an area of high productivity. It is one of the most active fishing centers in the country.

Bamboung MPA: local women have been collecting mangrove oysters since the creation of the MPA, harvesting them without cutting the roots of the mangrove trees (photo © Hellio and Van Ingen)

The establishment of these reserves may have positive effects on fish stocks: (i) there is a difference in the abundance between species, but specific biomasses are low with a high abundance of juveniles; (ii) in the case of a mangrove estuary, **fishing closure in the bolong improves the trophic structure for fishing;** and (iii) it also induces an increase in biodiversity.

Scientific monitoring of the Bamboung MPA through experimental fisheries on April 9, 2015 (Saloum delta, Senegal, West Africa). Modou Thiaw, Limalé Dème and Serigne Fallou Ngom from the Dakar-Thiaroye Oceanographic Research Center, and Captain Guège (MPA administrator) and his deputy from the Community Marine Protected Areas Directorate (photo © LEH-AO (ISRA/CRODT, UCAD, UGB, UASZ, 2016)

Indicators such as the abundance, the biomass, the mean and the maximum size of fish as well as the trophic level are higher inside than outside the Bamboung MPA. However, there is evidence of a loss of abundance explained by the spillover effect and predation by some wild species over the 2008-2016 period. **The Joal-Fadiouth MPA seems to have a positive effect on fish communities,** with greater abundance in the reserve, **despite the presence of uncontrolled artisanal fishery operators.**

The results of the socio-economic surveys reveal that fisheries at Cayar are subject to many difficulties that counter the positive effects of the MPA. In fact, overexploitation of fishery resources, destructive fishing practices, the development of foreign plants and open access to the resource have led to a reduction in species abundance in fishing areas. Furthermore, **the lack of financial and human resources, as well as the lack of monitoring and control equipment, lead to low ownership by the community of these management tool.**

What is the background and purpose of the Fisheries Ecology Laboratory in West Africa (LEH-AO) project?

The Fisheries Ecology Laboratory in West Africa (LEH-AO) is the result of close collaboration between five Senegalese research institutions and their partners for over a decade. The LEH-AO project was created in 2014 with the support of a JEAI, a new research team established in association with the French National Research Institute for Sustainable Development (IRD-France), to develop a research program focused on the relevance of MPAs as a fisheries management tool. It aims to build an autonomous and sustainable national team to lead fisheries research programs initiated in the sub-region through local collaborations.

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Can innovations made in assessing biodiversity help select MPAs?

OSPAR indicators identify significant changes in plankton communities in the water column, which form the basis of life in the ocean. These indicators were evaluated for the first time in the 2017 OSPAR Intermediate Assessment, allowing this convention to work towards a more robust regional assessment of

the state of its ecosystems. **These indicators could be used to consolidate existing MPAs or to create new MPAs based on the importance of plankton communities and, therefore, of food webs.** In its 2017 Quality Status Report, **the Barcelona Convention** indicates its **interest in developing indicators to identify the distribution of plankton communities.**

Can sovereign debt be converted in favor of MPAs?

In 2016, the Seychelles reached an unprecedented agreement with the NGO the Nature Conservancy to convert part of its sovereign debt into actions in favor of nature. **The government has committed to protecting 30% of its maritime territory (410,000 square kilometers) through the establishment of new MPAs by 2020.** In February 2018, the government confirmed the creation of two new MPAs that will cover 16% of the exclusive economic zone of the archipelago.

Mackerel fisherman fishing along the shore with small boats and seine nets in Beau Vallon, Mahé Island, Seychelles (photo © Jason Houston)

The Seychelles is also making use of innovative financing instruments, including the unprecedented issuance of a "blue bond". Part of the 15 million US dollars expected from this issuance will be allocated to establishing MPAs. Nevertheless, the inclusion of users, particularly local fishermen, as well as the ability to achieve protection objectives based on collegial and transparent scientific advice still need to be clarified.

What is an educational managed marine area?

An educational managed marine area is **a small coastal area that is managed in a participatory way by primary school pupils in accordance with certain principles.** The concept was born in 2012 in the Marquesas Islands in French Polynesia following discussions with pupils from a primary school in Vaitahu. French Polynesia and the founding partners have since structured the concept to create an educational label.

Children from the Ua Pou educational managed marine area visiting schools in Hakamaii and Haakuti on the Marquesas Islands in French Polynesia to share their experience in managing these marine areas (photo © Nicolas Job / Heos marine)

In 2016-2017, eight pilot projects in primary schools were conducted in metropolitan and overseas France (excluding French Polynesia and New Caledonia which have specific governing structures) and they were granted the educational managed marine area label in mid-2017. In 2017-2018, a total of 54 projects were carried out, of which 51 were granted the label in June 2018, including the eight initial projects whose label was renewed. In 2018-2019, about 50 additional projects will be launched. In future years, methodological guidelines, tools and training courses will be developed through a collaborative approach between educational managed marine areas. **A working group is being created to analyze how to address the ongoing requests of international cooperation to develop the concept.**

The first educational managed marine areas have led to behavioral changes in the population without the need for a formal legal framework. An in-depth analysis will be made to obtain a more comprehensive overview of the impact of these marine areas on local practices. These marine areas may be developed in MPAs or outside these areas and do not involve any restrictive measures on practices. Some local orders have nevertheless been issued by local authorities following the recommendations of schoolchildren from these educational managed marine areas.

Future research areas

Which institutional framework should be developed to create and manage MPAs in the high seas? Which decision-making authority will identify the conditions for the creation of MPAs in the high seas, authorize their creation and adopt restrictive management measures in these areas? Which governance rules should apply to such a body and what should its composition be?

How can the decisions made by new organizations be coordinated with existing organizations for management of MPAs in the high seas? Under which conditions could the negotiations on the high seas ensure effective cooperation between the various organizations operating on an MPA in the high seas? How can the risk of two sets of regulations applying be avoided? Would countries that have ratified the BBNJ agreement face a competitive disadvantage compared to those only following the regulations laid down by other jurisdictions?

For the purpose of achieving the Aichi Target 11, what is an ecologically coherent MPA network? What should the size, density and extent of MPAs be in relation to the particular habitats and species?

Who decides to create an MPA in areas under national jurisdiction? Is it always the State? What is the role of lobbies?

Regarding the conversion of sovereign debt in favor of the creation of MPAs, how the country's degree of ownership impacts the effectiveness of nature protection? Has the country's degree of ownership of aid policies played a role in the past in the context of Official Development Assistance (ODA)? How can considerations of fairness and the redistribution of benefits among local communities be included?

Under which conditions of good governance and transparency can blue bonds finance MPAs? How can the problem of attaining a tangible return on investment in the short-term be overcome to make the issuance of biodiversity bonds attractive for the private sector?

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OCEAN UNIVERSITY INITIATIVE

The Ocean University Initiative was initiated by the local authorities in Brittany. It is implemented by the University of Brest (UBO) with the aim of creating the conditions for establishing in France of an institute of the United Nations University dedicated to the ocean and the coasts, and with the means to carry out pioneering work in three areas: research, training and communication.

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