



# The management performance of marine protected areas in the North-east Atlantic Ocean



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## ABSTRACT

In the North-east Atlantic Ocean there are 550 inshore and offshore MPAs established to accomplish a high diversity of objectives, which can be classified into 24 different types of MPA designations. Only 153 of these MPAs have a management plan (MgP) –the basic tool required for an effective management. Amongst these, only 66 are actually managed, i.e. they have the staff and resources required to operate the plan. A common characteristic of these MPAs is the lack of standardized indicators of their performance. In order to address this issue, an alternative approach was developed based on the assessment of management performance using the expert knowledge and perceptions of managers operating MPAs, a universal source of information that could allow overcoming the usual gaps due to the restrictions in coverage of scientific monitoring and assessments. MgPs showed differences among countries but were homogeneous within each country, reflecting the usual top-down approach in the establishment of MPAs. Compliance with the qualitative objectives present in MgPs was higher than compliance with quantitative ones (87% versus 50%), and the MPAs that most successfully achieved their objectives were those with regular monitoring. This analysis also shows that beyond these objectives, the establishment of an MPA and the activities developed as a consequence of its creation have a positive socio-economic impact on the local human community.

## 1. Introduction

Increasing evidence of the adverse impact of anthropogenic activities over marine systems has been reported in the last decades. Factors associated with this deterioration are overfishing, habitat loss and pollution at scales ranging from local to global [1,2]. Thus, the more natural resources are exploited, the more an ocean conservation strategy is needed. In this sense, the use of Marine Protected Areas (MPAs) has been at the centre of biodiversity conservation strategies and has been gaining leadership as a tool that, effectively implemented, can help to manage fisheries, protect marine ecosystems and reverse the degradation of aquatic habitats [3–6]. In 2015 more than 11,000 MPAs have been listed on the MPAtlas (<http://www.mpatlas.org>) (most of them established during the last 10 years), covering 2.12% of the world's oceans.

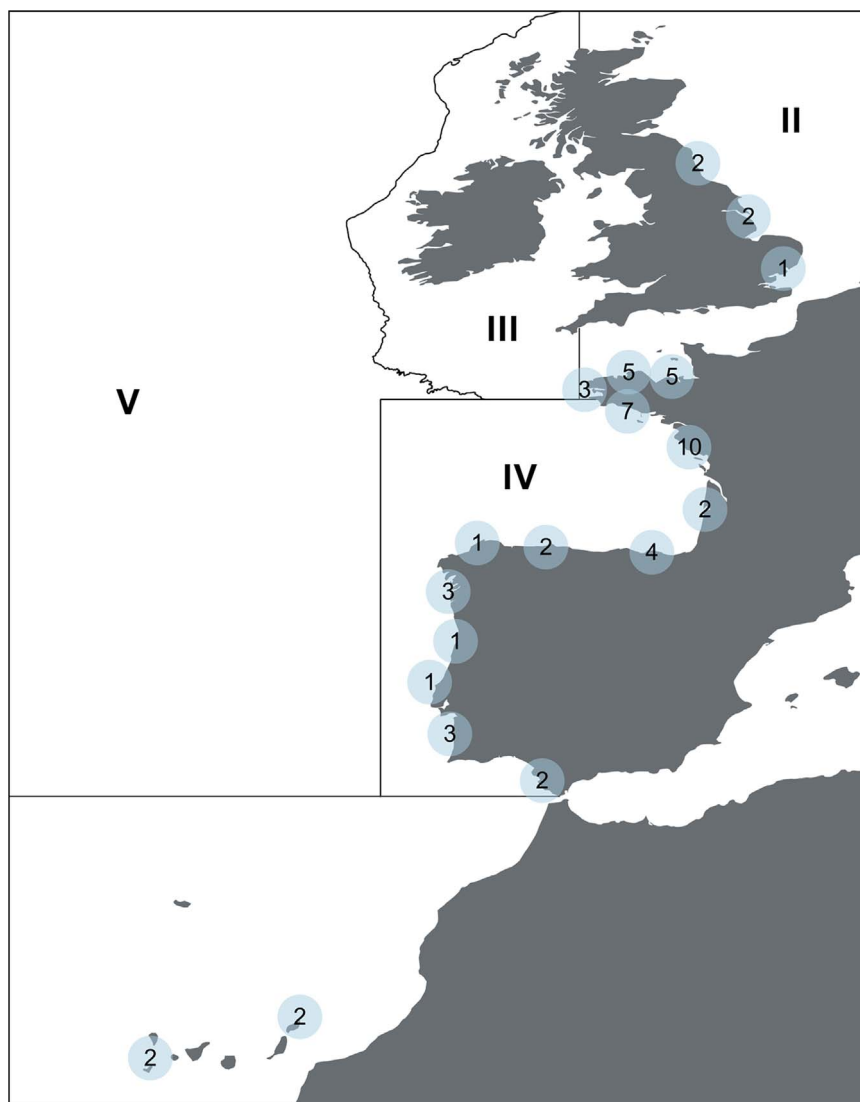
However, the concept of MPA currently encompasses several types of designation of marine and coastal protection, as explained below. Since these designations have been established in order to address different demands, with different objectives and in different institu-

tional settings, their implementation processes vary from one situation to another. For example, whereas stakeholders are sometimes involved in promoting the establishment of the MPA, in other cases they are only consulted or simply not involved at all [7]. Regarding their objectives, they could be focused on the conservation of marine biodiversity or on the sustainable exploitation of natural resources (including environmental protection), e.g. fisheries [8].

The 2008 International Union for Conservation of Nature (IUCN) - World Commission on Protected Areas (WCPA) definition of protected areas clearly states that these areas should have a secure conservation status over the long term, and this necessarily implies that they must have an effective management plan in place. This last point is a key aspect, since an MPA that is not effectively implemented and managed can become a useless tool. In this sense, the Convention for the Protection of the Marine Environment of the North-east Atlantic (OSPAR) established the objective of having a well-managed OSPAR MPA network by 2016. All this produced an increasingly large number of publications and reports in the peer-reviewed and grey literature directly related to management of marine protected areas [9 and

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**Fig. 1.** Distribution of the studied MPAs along the study area, which comprises the Atlantic coast of the Iberian Peninsula, the French Atlantic coast (from the Spanish border to the Belgian border), the England coast of UK and the Canary Islands region (© ProtectedPlanet 2014–2015). Each grey circle represents the number of MPAs that are closer to each location.

#### references therein].

Management Plans (MgPs) are the required tool for effective protected area management. They should be concise documents that identify the key features of a marine protected area, clearly establish the management objectives to be met and indicate the actions to be implemented. They also need to be politically and economically feasible and flexible enough to provide for unforeseen events that might arise during the period of validity of the plan [10,11]. There is no standard format for an MgP. However, international guidelines identify several key components that have to be included in a ‘good’ MgP [11,12]: (a) a legal description of the area and how it relates to the system plan; (b) the authority in charge of the MPA and other important governance arrangements; (c) a basic description of the resources and conservation values for which the area is being designated and of the related human interactions intended to be permitted in the area; (d) the conservation objectives and management category for the area; (e) the main threats and management approaches for dealing with them; (f) a zoning plan as needed; (g) the types of activities permitted and prohibited in the area; (h) a monitoring plan; (i) performance criteria for assessing progress toward goals and objectives and effectiveness of specific management approaches; (j) the life of the plan and its basic cycle for review, revision and updating.

The process of developing an MgP may be more or less complex depending on the objectives of the MPA, the risks or threats to these objectives, the number of competing interests, the level of stakeholder involvement and issues arising from outside the protected area. Whether the plan is simple or complex, sound planning principles should be applied to guide the planning process and ensure that the completed MgP is a thorough and useful document [10,11]. Two key points for making an MgP successful in the long term are actively involving stakeholders from the development of the MgP to its daily management, and using adaptive management [10,12–14].

Once an MgP is developed, it must be launched and continued to achieve effective management. Management effectiveness is the way to achieve the goals and objectives of a protected area and to show accountability for its management as defined by IUCN [15] and the OSPAR Commission [16,17]. Guidelines to assess management effectiveness have been developed by international organisations such as IUCN [18,19], the World Bank [20] or the OSPAR Commission [16]. However, no standardized set of measures or global coordination mechanism for sharing and analysing comparable data exists [17,21]. Moreover, the assessment of management effectiveness through indicators requires a larger input in terms of time, resources and money [16,17].

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