# Evaluating the social acceptability of Marine Protected Areas

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## ARTICLE INFO

## ABSTRACT

Q methodology provides a novel, quantitative approach to reveal stakeholder perspectives and was used to assess social acceptance of Marine Protected Areas (MPAs) with fisheries and conservation management goals using the Devon & Severn region, UK as a case study site. Participants sorted a set of statements ($n=42$) into a forced-choice frequency distribution and centroid analysis revealed three factors for interpretation: (1) 'pro-conservation', characterised by views that conservation should be prioritised over commercial and economic interests; (2) 'pro-fisheries' who saw fishing as the priority and expressed concerns over the uncertainty of management measures and the number of planned MPAs; and (3) 'win–win' who felt that the current approach to marine management using MPAs would allow both fisheries and conservation goals to be met. Despite some differences in opinion, social acceptability of MPAs was identified across all three discourses, but was limited by the knock-on effects of the exclusion of stakeholders from the implementation of MPAs and the development of management measures. This resulted in disenfranchisement and uncertainty over the future of their activities. The results suggest that social acceptability of MPAs is generated by effective and ongoing stakeholder engagement, transparency and honesty relating to the costs and benefits of designations and a certainty that once sites are in place the resources exist for their effective management. Understanding social acceptability will guide adaptive management and increase the chances of MPA success and the meeting of global targets.

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## 1. Introduction

Marine ecosystems are threatened by a range of anthropogenic stressors and exploitative activities, bringing them under increasing pressure and threatening their resilience. Conservation efforts worldwide are addressing this, with Marine Protected Areas (MPAs) some of the most common tools to conserve biodiversity and manage extractive activities. The goals of MPAs vary with location, with some full no-take reserves and others multiuse. The Convention on Biodiversity (CBD), Aichi Biodiversity Target 11 calls for the conservation of at least 10% of coastal and marine areas through *'effectively and equitably managed, ecologically representative and well-connected systems of protected areas'* by 2020 [1]. MPA numbers are growing globally, with 3.4% of the global oceans currently protected [2], but further increases are required to meet these targets. It is not just a matter of designation though; the success of protected areas in meeting their conservation and socio-economic objectives is dependent on their effective management and enforcement which may be strongly influenced by the social acceptability of the designation.

Rossiter and Levine [3] identified six themes that were consistently associated with MPA success, namely, level of community engagement, socio-economic characteristics, ecological factors, MPA design, governance and enforcement. It has been shown that social, cultural, economic and political factors can be more influential in shaping success than biological or physical factors [4–6], and positive attitudes towards MPAs are necessary for successful management [7,8]. Considerable reliance is therefore placed on human behaviours and compliance with regulations with a clear need to promote understanding of the purpose of designation and intended site benefits; the stakeholders must 'buy-in' to the concept of the MPA and feel some ownership towards the site.

In the context of MPAs, social acceptability has been defined by Thomassin and White [9] as '*a measure of support towards a set of regulations, management tools or towards an organisation by an individual or a group of individuals based on geographic, social, economic or cultural criteria'*. Furthermore, they state that it is composed of a set of individual perspectives and is complex, depending on multiple opinions and perceptions, with driving factors linked to the world view held by the stakeholders. Whilst studies have evaluated the success of stakeholder participation in the planning phase e.g. [10,11,12], few have looked at the attitudes of stakeholders to MPAs once they are a reality but see [9,13]. This is a key part of the ongoing monitoring of MPAs; to understand stakeholder attitudes and opinions post designation will aid the

evaluation of MPA success and effective management.

This study investigated the social acceptability of MPAs post designation in order to contribute to the understanding of the role social acceptability plays in MPA success. It focussed on the use of MPAs to address fisheries and conservation goals as these are two of the most common reasons for MPA creation and a cause for conflict in stakeholder opinion [14–16]. To facilitate this, the Devon & Severn region of south-west England was used as a case study site.

## 1.1. UK MPA history

The UK has a history of insufficient marine planning, with no statutory provision for the creation of MPAs in existence until 1981, and Lundy designated as the first statutory Marine Nature Reserve in 1986 [17,18]. Since that time, European Marine Sites (Special Areas of Conservation and Special Protection Areas) have been designated under the Natura 2000 agreement, but no framework for the development of a network of MPAs existed until the Marine and Coastal Access Act, 2009 (MCAA). Since 2009, England, Wales, Northern Ireland and Scotland have begun their own independent processes to establish MPAs within their waters.

In England, the MCAA led to the formalisation of the English Marine Conservation Zone (MCZ) project which was established in 2008. This involved a combination of top down and bottom up approaches, with guidance provided by the UK Government, Defra (Department for Food and Rural Affairs), the Statutory Nature Conservation Bodies (SNCBs) and the involvement of multi-sectoral stakeholder collaboration under four Regional Projects (Fig. 1). The aim was '*to develop an ecologically coherent and well-managed network of MPAs that is well understood and supported by sea-users and other stakeholders*' [19]. Extensive stakeholder consultation and engagement was incorporated into the process, intended to bring a strategic, regional approach to marine conservation planning and increase stakeholder participation [20].

MCZs are multi-use MPAs, which should have management in place for activities that are deemed to be damaging to the features for which the site is designated. The regional projects recommended 127 MCZs; a first tranche of 27 was designated in November 2013 and consultation ended in April 2015 for a second tranche of 23 with a date for designation as yet unknown (Figs. 1 and 2). As MCZs are a type of MPA the two terms are used throughout this study; MCZ is used for sites designated under the MCZ project, and MPA is used as an umbrella term or when referring to sites designated outside of this project.

Initially, the approach taken by Defra and the SNCBs was systematic; planning a network of sites based on best available evidence, including strong participative incentives for stakeholder engagement and providing clarity about site management. However, with time it changed, becoming more focussed on specific features and individuals sites, with strong top down elements and a requirement for scientific evidence rather than being driven by stakeholders [20,21]. The management decisions were also postponed until after site designation. Stakeholder engagement ceased at the end of the regional project period in 2011 when the final recommended MCZs were delivered to Defra, and from this point forwards the process was Government led with stakeholder inclusion limited to public consultation periods.

Lieberknecht and Qui [20] conducted a governance analysis of the MCZ regional project Finding Sanctuary in the south-west UK, finding considerable support for the MCZ generated through the initial project period. Stakeholders appreciated the chance for open discussion and for their voices to be heard, but with time, the changes made to how the process was conducted led to considerable uncertainty leaving them feeling disempowered, disenfranchised and excluded from what they perceived to be the important process of site implementation and decisions regarding their management. Furthermore, the change from an approach of using 'best available evidence' to a process which required strong scientific evidence for each site was perceived to undermine the work of the stakeholder groups.

This work provides context and background for the current study, but was completed prior to the first set of MCZs being designated. This paper therefore aimed to assess social acceptance of
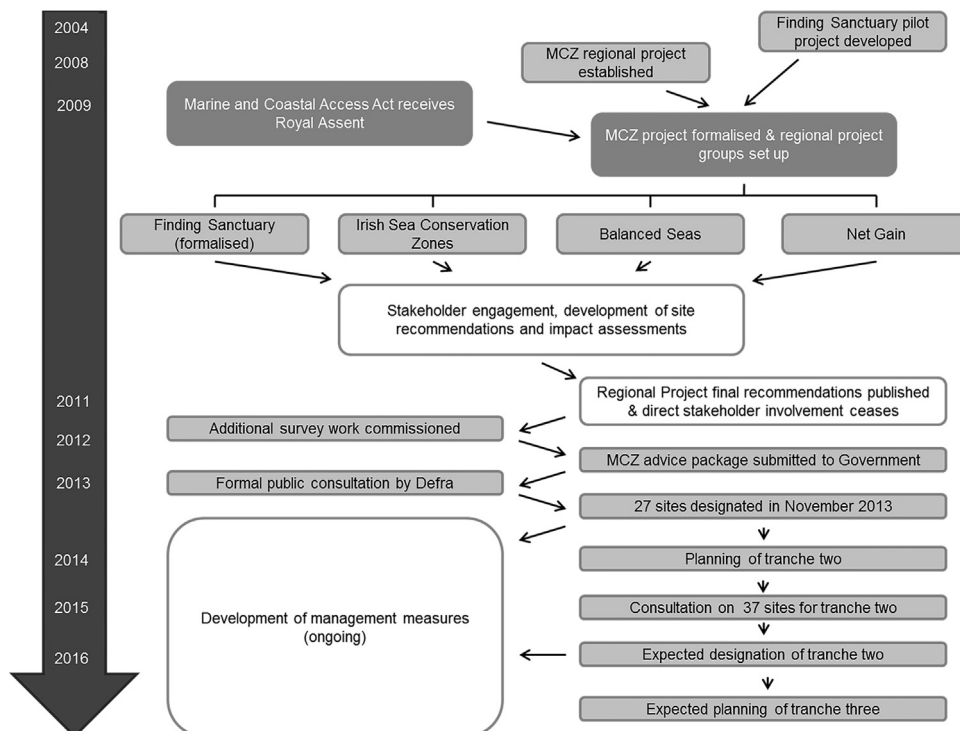


**Fig. 1.** Time line for the UK Marine Conservation Zone project. Adapted from Natural England and JNCC (2012).