California dreaming: Challenges posed by transposing science-based marine protected area planning processes in different political contexts

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ABSTRACT

In response to direct and indirect pressures on the marine environment posed by increased development and climate change, the international community has been planning and implementing networks of Marine Protected Areas (MPAs) in national waters. This paper critically assesses the role of evidence in marine conservation planning in the United Kingdom (UK), a process that drew heavily on the example set by California’s Marine Life Protection Act (MLPA) planning process. Whereas a science advisory panel played a constructive role and facilitated MPA planning in the Californian context, the outcome in the UK was quite different; evidence became a sticking point hampering the process. The actual designation of sites in the UK has been slower than expected, and none of the Reference Areas (i.e., no-take MPAs) proposed by stakeholder-led consultations have been implemented. Drawing on interviews with participants in the UK process and on theoretical debates surrounding evidence-based decision-making, this paper provides recommendations for effective science-driven marine conservation.

1. Introduction

The United Kingdom (UK) has committed to protecting its marine environment at the international, regional, and national level. Under the United Nations Convention on Biological Diversity (CBD) Aichi protected area targets, the UK and other Parties to the Convention have pledged to protect 10% of their coastal and marine territory by 2020 (CBD, 2010). Regionally, the UK has also committed to meeting the OSPAR Commission initiative of establishing a network of marine protected areas in the North-East Atlantic that is both ecologically coherent and well-managed. Marine protected areas (MPAs) are considered to be a key tool in marine conservation, and also play an important role in wider zoning initiatives, such as Marine Spatial Planning (MSP). The UK currently has over 500 MPAs, encompassing 23% of English waters (JNCC, 2017), and has been implementing MPAs for over two decades. The UK’s MPA network is comprised of four types of sites: (1) European Marine Sites (EMSs), including MPAs designated under the 1992 European Union (EU) Habitats Directive (Special Areas of Conservation, SACs) and sites protected under the 1979 EU Birds Directive (Special Protection Areas, SPAs); (2) Sites of Special Scientific Interest (SSSIs) under the UK’s 1981 Wildlife and Countryside Act; (3) Ramsar sites under the 1971 Ramsar Convention on Wetlands of International Importance; and (4) a new system of Marine Conservation Zones (MCZs) designated under the UK’s 2009 Marine and Coastal Access Act (MCAA, 2009). As a Member State of the EU (until it exits in 2019), the UK is required to implement European Directives via national legislation. The MCAA is the UK’s implementation instrument for the 2008 EU Marine Strategy Framework Directive (Directive 2008/56/EC), which aims to help achieve “Good Environmental Status” of European regional seas by 2020, including through the implementation of MPAs.

This paper focuses on the role of evidence in the fourth type of MPA the UK is designating, MCZs under the MCAA. From 2009 to 2011, the UK undertook a stakeholder-led consultation process to select sites, a process closely based on a model developed and implemented under the Marine Life Protection Act (MLPA) Initiative in California, USA. Scientific evidence, or perceived lack thereof, played out very differently in these two cases, raising questions about the role of science and experts in MPA planning, and the challenges of applying marine planning models in different political contexts. The MLPA and UK processes are briefly introduced, followed by an analysis of relevant Parliamentary Inquiries, and then a more in-depth examination of two key themes/issues: (1) how “best evidence” was determined in these cases, and (2) the role of scientific expertise in interpreting said evidence. The paper concludes with a discussion of the importance of Reference Areas, and the need for better implementation of the precautionary principle in MPA planning.

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2. Methods

This study undertook a detailed legal and desktop analysis of the UK’s MCZ process and related Parliamentary Inquiries from 2008 to 2015. Material examined included government reports and other grey literature, peer-reviewed literature on the UK and California MPA processes, as well as broader literature and theory on evidence in environmental planning and on the role of experts in environmental decision-making. Semi-structured interviews were conducted in 2014–2015 with twenty regulators, scientists, and other stakeholders involved in the UK Regional Projects, as part of a project assessing stakeholder participation in UK marine conservation planning (De Santo, 2016). To protect participants’ identities, given the sensitivity of some of the views expressed, interviewees are only referred to generally, based on their profession (e.g. members of the “regulatory community” or “NGO community”, rather than the specific agency or office in which the speaker works).

3. Background on California and UK MPA planning

3.1. Marine Life Protection Act Initiative, California

Enacted in 1999, California’s Marine Life Protection Act (MLPA) aims to protect marine natural heritage through the establishment of a statewide network of MPAs. The MLPA aims to ensure that California’s MPAs “have clearly defined objectives, effective management measures, and adequate enforcement, and are based on sound scientific guidelines” (MLPA, 1999, section 2853, para. b section 5). The master plan guiding the adoption and implementation of MPAs recommends using “the best readily available science” (MLPA 1999 section 2855, para. a).

Following two failed attempts by California to implement the MLPA, in 2004 an MLPA Initiative was formed to guide California’s MPA network planning, based on best readily available science and engaging stakeholders (Gleason and Kirlin, 2013). Planning processes were undertaken in four regions along the California coast from 2005 to 2012 (Northern, North Central, Central, and Southern Coast regions; MPAs in San Francisco Bay under the MLPA are forthcoming). The network of MPAs proposed included 124 MPAs, encompassing approximately 16% of California State waters outside of San Francisco Bay, 9.4% of which is designated as “no-take”, i.e. the highest level of protection, excluding all extractive activity (Kirlin et al., 2013). The process was supported by a combination of private charitable foundation funds ($19.5 million) and public funds ($18.5 million) (Gleason et al., 2013).

The MLPA Initiative was a public-private partnership created through a Memorandum of Understanding between State agencies and a private foundation, which also established a Blue Ribbon Task Force (BRTF) to oversee the MPA selection process, comprised of four to five individuals experienced in policy-making, although not necessarily marine conservation (Kirlin et al., 2013; Botsford et al., 2014). The BRTF was also tasked with ensuring the process moved forward in a timely manner and was consistent with the goals of the MLPA, including meeting scientific guidelines while recognizing socioeconomic tradeoffs and gaining consensus among stakeholders. The context in each coastal region was different, challenging decision-makers, and the BRTF had the responsibility of meeting MPA goals while addressing the specific issues pertinent to each region. The MPA network was thus not a strictly science-driven achievement, nor was it completely determined by stakeholder desires; it was the result of a public policy process integrating these inputs, but reflecting the final judgment of policy-makers (Gleason et al., 2013).

As illustrated in Fig. 1 below, the BRTF was responsible for putting forward the final, winnowed list of proposed sites/plans from the Regional Stakeholder Groups (RSGs) to the California Fish and Game Commission, following input and feedback from each region’s Science Advisory Team (SAT) and the California Department of Fish and Game (CDFG). The CDFG provided feedback to the BRTF, SAT, and RSGs on the MPA proposals’ logistical and regulatory feasibility, and submitted their recommendations to the California Fish and Game Commission in parallel with the BRTF (Gleason et al., 2013; Botsford et al., 2014). Final decision-making regarding MPA proposals lay with the Commission.

The UK loosely based its stakeholder-led consultation on MCZs on this Californian model. Key aspects were different, however, both in terms of how the processes were structured, and how science was brought into decision-making. These issues are explained in more depth below. With regard to similarities, it is important to note that both initiatives utilized external panels of scientific experts to assess MPA proposals. In California, each region had one (a group of about 50 scientists total, with many covering multiple regions such that each region had a panel comprised of about 20 scientists (Saarman et al., 2013)), while in the UK there was only one panel, comprised of eight members and a chair. In both examples, the panels were comprised mostly of experts in ecosystems/ecology and fisheries, i.e. there was little representation of social/political science. Some stakeholders involved in the processes may have perceived this expertise to be biased towards MPA designation, rather than assessing socioeconomic pressures. Questions can also be raised about the role of the public-private partnership in the California example, i.e., how environmental NGOs and foundations’ financial involvement could put pressure on pro-mpa decisions (Jun, 2013). Notwithstanding their disciplinary expertise, science panel members did look at the impacts of designating MPAs from a socioeconomic perspective, however this was a static approach, only taking into consideration the short-term loss of closing an area to fishing, rather than projecting long-term fish recovery potential (Botsford et al., 2014). Despite these critiques, the MLPA Initiative benefitted from having a strong legal mandate to use the best readily available science, and the role of scientists in the process was active and responsive to the informational needs of each region (Saarman et al., 2013). The final result was a network of MPAs outlined in Table 1.

3.2. Marine Conservation Zones, UK

Under the Marine Coastal and Access Act (MCAA), i.e. its national implementation legislation for the EU Marine Strategy Framework Directive, the UK has committed todesigning a network of Marine Conservation Zones (MCZs) in its Exclusive Economic Zone (EEZ) 1 (NB: the MCZs discussed in this paper are within English waters; analogous networks are being designated in Scottish, Welsh, and Northern Irish waters). From 2009 to 2011, four stakeholder-driven Regional Projects worked to establish lists of MCZs designed to conserve biodiversity and reconcile socioeconomic concerns. The Regional Projects encompassed: (1) Finding Sanctuary in the southwest, (2) Balanced Seas in the southeast, (3) Net Gain in the North Sea, and (4) Irish Sea Conservation Zones in the Irish Sea. The Regional Projects were conducted by statutory nature conservation agencies of the UK Government: Natural England, which provides advice on inshore marine conservation, and the Joint Nature Conservation Committee (JNCC) for offshore marine waters. The Department for Environment, Food, and Rural Affairs (Defra) oversaw the process, and Natural England and the JNCC reported to it at arm’s length. In addition, the process included oversight by an external independent Science Advisory Panel (SAP), appointed by Defra. The structure of this process was modeled on the California MLPA experience described above, but with very different results, attributable to both its institutional structure, and the politics of

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1 The UK possesses a 200 M Exclusive Fisheries Zone (EFZ) rather than the traditional Exclusive Economic Zone (EEZ) set out in the UN Convention on the Law of the Sea; however, the function is equivalent, thus the more common term EEZ is used herein.
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