



What counts in making marine protected areas (MPAs) count? The role of legitimacy in MPA success in Canada



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ABSTRACT

Marine protected areas (MPAs) are powerful management tools used worldwide for conserving marine species and habitats. Yet, many MPAs fail to achieve their management objectives because of shortfalls in understanding the level of legitimacy stakeholders afford to an MPA. Legitimacy refers to the ability of a political action, in this case an MPA, to be perceived as right and just by the various people who are involved, interested, and/or affected by it. Using responses from key stakeholders and managers at two coastal MPAs in Atlantic Canada, this study examined the importance of various factors shaping perceptions of MPA effectiveness and the role of legitimacy in influencing those perceptions. Results indicate that most indicators of legitimacy are important to stakeholders for MPA effectiveness. Specifically, there was consensus across case studies on the importance of community leadership and the establishment of trust in determining the level of legitimacy afforded to MPAs. However key differences in perceptions were evident from stakeholders both between and within groups, and between stakeholders and MPA managers. A novel legitimacy framework and a stakeholder-vetted suite of indicators for legitimacy are presented and recommended for use by MPA managers in assessing the legitimacy of coastal MPAs, before, during and after MPA designation. The results provide an increased understanding of stakeholders' perceptions of legitimacy, giving managers key additional information needed to establish effective MPAs in the future.

1. Introduction

In the face of growing marine biodiversity loss, the need for increased protection of the oceans has become a priority issue for marine managers (Agardy et al., 2003; Wenzel et al., 2016; Worm et al., 2006). In response, marine protected areas (MPAs) have become one of the most powerful marine management tools used worldwide for conserving species and habitats, maintaining ecosystem functioning, and ensuring sustainable use of marine resources (Agardy et al., 2011; Bennett and Dearden, 2014; Mascia, 2003). From increasing the reproductive potential of great scallops (*Pecten maximus*) by 13-fold in the Irish Sea, to successfully preventing any further population decline of northern bottlenose whales (*Hyperoodon ampyllatus*) off Nova Scotia, Canada, the conservation successes from MPAs have not gone unnoticed (Agardy et al., 2003; Beukers-Stewart et al., 2005; O'Brien and Whitehead, 2013).

Despite examples of their proven potential, the question of how truly effective MPAs are has continually challenged marine managers and scientists (Anglo-Valdes and Hatcher, 2010). Many MPAs worldwide have been characterized as 'paper parks', legally designated but do

little for conservation (Jameson et al., 2002). In fact, it has been estimated that only 31% of MPAs globally are effective, with the majority failing to achieve their stated management goals and objectives (Kelleher et al., 1995; Pomeroy et al., 2005). This has been partially attributed to an inadequate consideration of the social dimension associated with MPA designation and implementation (Abescasis et al., 2013; Carcamo et al., 2014; Jentoft et al., 2012; Voyer et al., 2012). However, because MPAs are considered linked social-ecological systems that have the potential to affect a wide range of stakeholders (Carcamo et al., 2014), it is becoming widely recognized that an MPA's success depends heavily upon its ability to acquire a significant level of acceptance and support – or 'legitimacy' – from these stakeholders (Hard et al., 2012; Hoelting et al., 2013). This is supported by research undertaken by Kelly et al. (2017) who used keyword searches and content analysis to evaluate the link between social acceptance and social license in marine conservation success. As noted from their analysis of some 26 papers on marine conservation and MPAs spanning 1999–2016; "whilst social acceptance is critical in determining MPA success it remains a poorly explored area of research." (Kelly et al.; 2017;p.24).

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By exploring how and to what extent indicators of legitimacy reflect stakeholders' perceptions of MPA effectiveness at two MPAs in Atlantic Canada, this paper provides guidance on how to better recognize, obtain, and measure legitimacy as an important component of an MPA's effectiveness. It first provides an overview of Canada's efforts at protecting the marine environment and the concept of effectiveness as informed by assessing legitimacy as a key indicator. This is followed by a discussion of the findings of two case studies leading to the development of a novel legitimacy framework based on a stakeholder-vetted suite of indicators for use before, during and after MPA designation. The paper concludes with recommendations aimed at improving MPA effectiveness. Given the likely pressures to achieve the 2020 Aichi global 10% target for marine protected areas that has been endorsed by member states under the Convention of Biological Diversity and the United Nations 2030 Agenda for Sustainable Development (UNEP, 2010; United Nations, 2015), it is argued that without this knowledge, decision makers in Canada and elsewhere run the risk of establishing MPAs that are ineffective due to a lack of legitimacy, resulting in more 'paper parks'.

2. Canada's efforts at MPAs

Marine protected areas are defined as geographical ocean spaces that are recognized and managed through legal or other effective means with the intent to conserve nature over the long-term, taking into account the maintenance of ecosystem services and cultural values (Day et al., 2012; Dudley et al., 2010).

Despite its long coastline and large ocean territory, Canada's system of MPAs remains inadequate at just under 1% relative to other developed countries such as Australia, the United States and Russia (DFO, 2016a; Gardner et al., 2008; UNEP-WCMC, 2015). This is despite the availability of legislative capacity for the development of MPAs in Canada and the authority being granted to three federal agencies, Department of Fisheries and Oceans (DFO), Parks Canada (PC) and Environment and Climate Change Canada (ECCC), as well as provincially.

For DFO, legislative authority came about in 1996, through the passing of Canada's *Oceans Act*. Under Section 35(2), the Minister of DFO is given sole responsibility for leading the development and implementation of a national system of marine protected areas on behalf of the Government of Canada. The first marine protected area designated by DFO (Endeavour Hydrothermal Vents MPA), was designated on Canada's Pacific coast in 2003 (DFO, 2016b). Since then, only eight other marine protected areas have been designated, the most recent being St. Ann's Bank off of Cape Breton Island, Nova Scotia with an area of just over 4300 km² designated on June 8, 2017. Seven sites are currently underway for future designation, including the Laurentian Channel in Newfoundland, and the St. Lawrence Estuary on Canada's Atlantic coast (DFO, 2016a). PC has designated two national marine conservation areas with two others in the planning stages (ECCC, 2016). Of the total marine area under protection in Canada, 25% or some 14,000 km² has been designated by DFO, 23% (approximately 13,000 km²) by PC under National Marine Conservation Areas legislation and 34% (approximately 19,600 km²) by ECCC as National Wildlife Areas and/or Migratory Bird Sanctuaries. The remaining 18% of marine protected areas are provincially designated (ECCC, 2017). However, consensus on their accepted effectiveness among the diversity of stakeholders remains unresolved.

3. Linking MPA effectiveness to legitimacy

Despite the growing evidence of the conservation potential of MPAs and the global consensus on their use as marine management tools, a major concern that exists among MPA managers, scientists, academics and resource users is exactly how effective marine protected areas are (Anglo-Valdes and Hatcher, 2010; Chuenpagdee et al., 2013; Jameson et al., 2002; Kelleher et al., 1995; Pomeroy et al., 2005; Selig and

Bruno, 2010). As a result, determining the effectiveness of an MPA, defined as the degree to which the management actions at an MPA are achieving the goals and objectives initially laid out for the MPA is of growing importance, particularly given the constraints MPAs place on human use of the areas (Bennet and Dearden, 2014; Garcia Rodriguez and Fanning, 2017; Himes, 2007; Pomeroy et al., 2005). Factors accounting for the failure of MPAs include: poor planning and design, insufficient finances, inadequate staff, lack of scientific knowledge, poor decision-making, and/or lack of political support (Agardy et al., 2003; Bennett and Dearden, 2014). While recognizing that each MPA will have context-specific characteristics influencing its effectiveness, three generic components have been discussed in the literature as essential for assessing effectiveness, namely: biological/ecological conservation, socio-economic considerations, and legitimacy (Bennet and Dearden, 2014; Charles and Wilson, 2009; Hard et al., 2012; Hoelting et al., 2013). Among these, understanding the role of legitimacy has been given limited attention (Christie, 2003; Jentoft et al., 2012; Kelly et al., 2017).

3.1. Understanding legitimacy

Used in the context of this paper, legitimacy refers to the ability of a political action to be perceived as right and just by the various people who are involved, interested, and/or affected by it (Biermann and Gupta, 2011; Carcamo et al., 2014; Mees et al., 2014). Ultimately, the level of legitimacy afforded by stakeholders towards an MPA influences the degree to which the stakeholders are satisfied with the MPA, comply with its regulations and management decisions, and overall perceive it as an effective initiative (Jentoft et al., 2012; Rantala, 2012). This has led to the assumption that if an MPA is not legitimate, it will likely not be effective at achieving its management objectives, as it will lack stakeholder compliance, buy-in, and acceptance (Hard et al., 2012; Hoelting et al., 2013). This emerging idea of MPA legitimacy has been enhanced by the work of governance and political science scholars as understanding the shift from government-controlled decision making to a more distributed or network form of governance became an important area of research (Biermann and Gupta, 2011). Three distinct components have been identified as necessary to the overall understanding of legitimacy, namely input, throughput and output legitimacy (Bennet and Dearden, 2014; Mees et al., 2014; Rantala, 2012).

Input Legitimacy relates to the extent stakeholders are included at the planning and design phase of the MPA and is gained through the use of inclusive and equitable processes at this stage of decision-making. Specifically, input legitimacy indicators measure the scale and the methods by which stakeholders are engaged prior to the official designation of the MPA. Examples of input indicators include Inclusiveness of Stakeholders, Stakeholder Exposure to Science of the MPA, Capacity of Management Body, and Attention to Displacement.

Throughput Legitimacy refers to the quality of the rules and procedures for decision-making throughout the lifetime of the MPA, specifically relating to the practices used to manage an MPA once it has been officially designated. Examples of throughput indicators include Accountability of Managers, Existence of Planned Activities, Level of Enforcement, and Cooperation Among Government.

Output Legitimacy considers the perception by stakeholders that the MPA has achieved its goals and their acceptance of the governance process. This category includes indicators such as Biological/Ecological Benefits, Environmental Awareness, Economic Benefits and Information Availability and Accessibility.

Despite increasing research aimed at promoting the significance of legitimacy as a key component of MPA effectiveness, it often remains a struggle for managers to accurately understand what stakeholders' expectations are for an MPA and the key factors influencing whether or not they will afford it legitimacy and perceive it as effective (Rossiter and Levine, 2014). Furthermore, it is unknown whether the suite of indicators for legitimacy as defined in the literature actually matters to

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