



It's a trust thing: Assessing fishermen's perceptions of the California North Coast marine protected area network



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ABSTRACT

The California's Marine Life Protection Act (MLPA) is a recent high-profile initiative that led to the implementation of a network of 124 marine protected areas (MPAs) encompassing 16% of state waters. The effort was conducted through six different regional processes that incorporated stakeholder and scientific involvement, ending with the North Coast region. While the initiative has been described as a success in terms of implementation, there has been relatively little empirical research about social perceptions of the MPA network in order to examine whether stakeholders view the effort as successful. Our research team conducted surveys with 178 commercial and charter fishermen and held five focus groups in each of the major ports of the region in order to assess fishermen's perceptions of the California North Coast MPA network – including perceptions of both the process of implementation and potential outcomes from the network. Among fishermen, satisfaction with the overall process was low; however, the level of satisfaction with the inclusion of local input and the final location of the MPAs was more evenly divided. Levels of trust in management entities, including those who implemented the MPA network, were low. Additionally, in focus group discussions, fishermen described several perceived shortcomings of the process, including an overall “top-down” approach, a failure to consider the local context, and the appearance of being dismissive of fishermen's perspectives. In terms of outcomes, fishermen overwhelmingly did not believe that the MPA network would improve ocean health or their income from fishing. Qualitatively, fishermen reported that while they were experiencing some minor adverse effects from the MPA network, overall they did not believe that socioeconomic impacts on the fishing industry from the MPA network would be substantial. Many expressed relief that the location of MPAs avoided many important fishing grounds. Trust emerged as an important variable. For example, the reported level of trust by fishermen in the entity that implemented the MPA network had a statistically significant correlation with their level of satisfaction with the overall process, including the final location of the MPA network. Findings complicate initial assessments of the MLPA implementation process as an overall success, and highlight the importance of trust to building successful and lasting marine conservation initiatives.

1. Introduction

Marine protected areas (MPAs) are designated areas of the ocean where human activities, primarily fishing, are prohibited or limited. Often the main objective of MPAs is to protect spawning and nursery grounds and re-build fish populations, with the hopes that fish and larvae will eventually ‘spill over’ to the surrounding, fishable areas (Boersma and Parrish, 1999; Sumaila et al., 2000; Wolff, 2015). Since the 1992 Convention for Biological Diversity set a target for 10% of the world's oceans to be designated as MPAs by 2010 (McCay and Jones, 2011), there has been a substantial increase in the popularity, use, and study of this type of marine management (Caveen et al., 2014; Conway

and Pomeroy, 2006; Hart and Sissenwine, 2009; Richmond and Kotowicz, 2014; Voyer et al., 2012). Additionally, there has been a growing attention to the human dimensions of MPAs as scholars and practitioners began to realize the important role that stakeholder perceptions and social context can play in an MPA's social and ecological success (Webb et al., 2004; Leleu et al., 2012; Eagles et al., 2013; Bennett, 2016).

A current high-profile example of MPA implementation is the state of California's Marine Life Protection Act (MLPA), one of the most ambitious statewide efforts at present with its large network design of 124 MPAs incorporating 16% of state waters (Chen and Lopez Carr, 2015). There are many examples of literature reporting on the

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initiative's success, with some emphasis on the process's participatory approach (Lieberknecht, 2008; Gleason et al., 2010; Fox et al., 2013; Kirlin et al., 2013; Sayce et al., 2013). Publications by managers involved assert that “the general process design ensured that knowledgeable stakeholders with direct interests in ocean resources had a central role in shaping outcomes and were well informed” (Fox et al., 2013:21), and that “By most measures, these MPA network planning efforts can be deemed a success” (Gleason et al., 2010:54). The definition of success used in these works, however, appears to be specific to management objectives such as effective statutes, adequate funding, and support from top state officials (Kirlin et al., 2013). Such success measures do not necessarily incorporate ecological effectiveness or social acceptability. MLPA process organizers conducted internal assessments of stakeholder participation early in the process in order to learn lessons for the process moving forward (Raab, 2006; McCreary and Poncelet, 2006). However, few outside researchers have gathered empirical information about stakeholder perceptions of the MLPA planning process in order to assess whether stakeholders such as fishermen¹ view the process and their participation as successful. Additionally, there has been very little empirical research about the human dimensions of the MLPA planning process in the North Coast of California – the last region of the state in which MPAs were designated.

As a part of the MLPA initiative, California developed and funded a monitoring program to evaluate social and ecological outcomes from the network – starting with baseline monitoring that was completed in 2017. This paper draws information from a larger, state-funded study to assess the baseline socioeconomic conditions of California North Coast's fishing communities in relation to MPA formation (Hackett et al., 2017). As a part of this mixed-methods study we conducted survey interviews with 178 commercial fishermen and commercial passenger fishing vessel (CPFV) operators in the region and convened five focus group conversations in each of the major ports. While the larger study gathered an array of socioeconomic data, this paper focuses on data collected regarding fishermen's perceptions of the MPA network. The North Coast MPA network was fully implemented in 2012 and interviews were conducted in 2014, so we were able to assess fishermen's perceptions of initial impacts from the network. The overarching goal of this paper is to examine fishermen's perceptions of the MPA network in order to speak to conversations about the relative success of the MLPA implementation effort from a social standpoint. To achieve this research goal we seek to address three key questions:

- (1) What are fishermen's perceptions of the process through which the North Coast MPA network was implemented and, in particular, efforts to incorporate local participation?
- (2) What are fishermen's perceptions of the potential impacts or outcomes from the implementation of the MPA network?
- (3) What factors might be driving fishermen's perceptions of the MPA network?

Results of this study can be applied to future adaptive management of the North Coast MPA network as well provide insights for other emerging MPA design and planning initiatives.

2. Theoretical framework: perceptions, trust, participation, and MPA success

Socioeconomic factors have traditionally been considered secondary to biological factors when designing marine reserves (Scholz et al., 2004; Stewart and Possingham, 2005; Klein et al., 2008; McCay and Jones, 2011). Many scholars now agree, however, that evaluating the success of an MPA should be reflective of both social and biological

factors (Boersma and Parrish, 1999; Sumaila et al., 2000; Christie, 2004; Klein et al., 2008; Masud and Kari, 2015). Social factors including stakeholder engagement, perceptions of process legitimacy, equitable sharing of benefits and impacts, and conflict resolution mechanisms have been identified by scholars as important to the social and ecological success of MPA networks (see NRC, 1997; Badalamenti et al., 2000; Pollnac et al., 2001; Christie, 2004; Lundquist and Granek, 2005; Osmond et al., 2010; McCay and Jones, 2011; Voyer et al., 2012; Chen and Lopez Carr, 2015). Social perceptions or “the way individuals observe, understand, interpret and evaluate” various experiences, policies and outcomes (Bennett, 2016:4), has become an accepted form of evidence for evaluating the success of conservation initiatives such as marine protected areas (Webb et al., 2004; Christie, 2005; McClanahan et al., 2005; Dalton et al., 2012; Leleu et al., 2012; Bennett and Dearden, 2014; Cinner et al., 2014). Scholars highlight how perceptions data can reveal important information about social impacts, social acceptability, and the legitimacy of marine conservation initiatives (Bennett, 2016; Lockwood, 2010; Eagles et al., 2013; Bennett and Dearden, 2014). Within this literature, stakeholder perceptions are recognized as an important indicator of the social success of a conservation initiative such as MPAs; meaning persistent negative perceptions of MPAs (including the process through which they were implemented) can indicate a lack of success on social measures.

Scholarship on MPA implementation and success consistently highlights the importance of incorporating participation into the planning process (Scholz et al., 2004; Dalton et al., 2012; Sayce et al., 2013). Research reveals that this can increase ecological and social success when applied to MPA planning and governance (Dalton, 2005; Pollnac et al., 2001; Jentoft et al., 2007; Lundquist and Granek, 2005). Emphasis on participation may be linked to long-standing findings about procedural justice from the field of social psychology. Procedural justice is the concept of fairness in governance or decision-making processes. Research in the area has coalesced around a concept called the “voice effect,” which holds that “the opportunity to present information relevant to a decision enhances judgements of fairness of the decision-making process” (Lind et al., 1990, p 952). Lind et al. (1990: 952) note that the voice effect is “probably the best documented phenomenon in procedural justice research,” a finding that has been confirmed in numerous studies conducted in laboratory and field settings (e.g. Deutsch, 2000; Folger, 1977; Lind et al., 1990; Lind and Tyler, 1988). Some research, however, suggests the voice effect may not apply in all settings (Bauman and Skitka, 2009). In an MPA context, the voice effect suggests that MPA implementation processes that include opportunities for public participation would be more likely to be judged as fair.

Research is also providing insight into how different dimensions of trust play a role in resource management. Distrust has been identified by several studies as an obstacle to effective environmental management, and trust has been identified as a prerequisite to successful conflict resolution (Hough, 1998; Davenport et al., 2007; Hartley and Robertson, 2008; Devine-Wright and Howes, 2010; Carr and Heyman, 2012; Smith et al., 2013; Stern and Coleman, 2014). Trust is also recognized as an important component of social capital, described as “social relations that have productive benefits” (Claridge, 2004, p.1) (Woolcock, 1998; Dasgupta, 2009; Siegler, 2014). While there has been research examining trust in the context of fishing communities (Johnson, 2010; Hartley and Robertson 2006, 2008), stakeholder trust remains an understudied area in relation to MPA formation and management. In this study we consider both quantitative and qualitative measures of stakeholder trust in the context of MPA formation in California's North Coast region.

3. Setting & background

The planning and design of the California MPA network involved a long and controversial process that cost \$38 million and took 13 years

¹ The term ‘fishermen’ is used to denote people who fish. Amongst those in the North Coast fishing community this is the preferred term regardless of gender.

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