Caught in a Maelstrom: Implementing California Marine Protected Areas

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Caught in a Maelstrom: Implementing California Marine Protected Areas

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The first attempt to implement the 1999 California Marine Life Protection Act (MLPA) to establish marine protected areas (MPAs) ended contentiously in 2002. The initial MLPA process is examined by a statutory analysis and an analysis of stakeholder network relationships and beliefs. The failure of the initial MLPA process can be understood by a combination of factors: (i) Insufficient financial support from the California State government; (ii) Unclear, unranked and inconsistent statutory objectives; (iii) The application of a science-based process that excluded affected stakeholders; (iv) Implementing officials who lacked expertise in designing and managing political processes; and (v) A community of stakeholders who were polarized into coalitions of proponents and opponents of MPAs. The article concludes by discussing limitations of its methods and analysis and by offering strategies for learning from policy failures.

Keywords coalitions, implementation, Marine Life Protection Act, marine protected areas, marine reserves

In the summer of 2001, officials from the California Department of Fish and Game (DFG) experienced a public relations nightmare. Charged by the Marine Life Protection Act (MLPA) to establish marine protected areas (MPAs) in state waters, the California DFG organized ten public meetings along the coast to present preliminary, science-based drafts for placing MPAs in state ocean waters. Members of the recreational and commercial fishing communities reacted with outrage. In one meeting, local attendees pelted government officials and scientists with shrimp. In a couple of meetings, local attendees became so riotous that police were needed for crowd control. Members of the fishing community were upset about not being consulted earlier and about the sheer size and locations of proposed MPAs. In the beginning of 2002, the California government ended the first attempt to implement the MLPA. This article seeks to understand the initial failure to implement the MLPA by examining the statutory design of the MLPA and the network relations and beliefs of stakeholders.

Kelleher defines MPAs as “any area of intertidal or subtidal terrain, together with overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment” (1999, xi). Different types of MPAs exist including marine reserves, which prohibit all
resource extractions from a particular marine site. The promulgation of MPAs has been in response to declines in fish stocks, major changes in the abundance and distribution of marine species, and frustrations with traditional approaches to fisheries management (Costanza et al., 1998; Pauly et al., 1998).

MPAs can be found throughout the world including New Zealand (Wolfenden et al., 1994), Indonesia (Crawford et al., 2006; Dahl-Tacconi, 2005), the Philippines (Pollnac et al., 2001; White et al., 2002), Central America (Chuenpagdee et al., 2002), the Caribbean (Brown et al., 2001), Europe (Gomez et al., 2006), and North America (Helvey, 2004; Jamieson & Levings, 2001; Salz & Loomis, 2004; Scholz et al., 2004). As in California, many efforts to plan and implement MPAs have led to conflict and failures (Crawford et al., 2006; Gomez et al., 2005; Helvey, 2004; White et al., 2002; Wolfenden et al., 1994). This article uses systematically collected data from interviews, a mail-in questionnaire, and other publicly available documents to draw lessons from one failed attempt to implement MPAs in order to help design better processes in the future.

Understanding Implementation

Policy implementation occurs after the adoption of a policy, statute, or program (Birkland, 2005, 181–199). Understanding policy implementation requires simplifying an overly complex system to a reasonable number of factors. One way to simplify a complex system is to use one or more analytical approaches to help identify important factors to include or to exclude (Sabatier, 1999, 3–6). In this article, the first attempt to implement the California MLPA is understood by its statutory design and by the networks and beliefs of stakeholders directly or indirectly participating in the MLPA process.

This article structures the analysis of the initial MLPA process based on seven conditions identified by Mazmanian and Sabatier (1989, 25–30) as important for understanding the outcomes of policy implementation.

1. **Clear and consistent objectives** relate to the purpose or purposes of a policy. An ideal policy would identify objectives that do not interfere and that are clearly stated and ranked. Clear and consistent objectives are important for giving direction to implementing officials, bestowing a political resource to advocates, and helping analysts evaluate the outcomes. For example, a MPA statute that asks government officials to balance economic development of commercial fishing communities and protection of marine habitats will probably arouse confusion and conflict within and among implementing actors.

2. **An adequate causal theory** causally connects the conceptual and jurisdictional components of a policy to a policy’s objectives. The conceptual components include the scientific and technical capacity of the instrument (i.e., MPAs) to produce the desired outcomes (e.g., ecosystem restoration). Applied to MPAs, a statutory objective that aims to enhance fisheries creates an uncertain link in the causal theory because the benefits of MPAs as a fisheries management tool have been contested (Holland & Brazee, 1996; Shipp, 2002). The jurisdictional components relate to the autonomy and power of the implementing agency or the extent that the implementing agency legally controls a number of sufficient levers to attain the policy’s objectives. For example, a statute that asks a state agency to protect and restore a fishery using MPAs will be problematic if the restoration requires management tools other than marine reserves (e.g., gear-restrictions or quotas) or changes in policies beyond the agency’s territorial jurisdiction (e.g., inland habitat restoration for salmon).
3. An adequate initial allocation of financial resources provides the critical resources for attaining statutory objectives and an indication of the level of commitment from the legislature and executive. Money is important to hire administrative staff, to integrate members of the public in planning, to conduct research and analysis, and to monitor and enforce agreements. For example, stakeholder participation in a MPA program will be problematic if the financial resources are inadequate to administer the process.

4. Hierarchical integration within and among implementing institutions is important for achieving the policy’s objectives by limiting the number of “veto points” for opponents and by authorizing and making available the use of inducements and sanctions to change the behavior of target populations. Veto points can be legal or illegal and represent situations where opponents can stop, delay, or alter the implementation process. Some veto points can be cleared with the proper inducements, monitoring, or sanctions. In MPA policy, veto points might include curtailment of budgetary appropriations or reluctance by commercial fishers to abide by a marine reserve boundary.

5. Decision rules of implementing agency specify the requirements for selecting and making choices among policy alternatives. Decision rules indicate the burden of proof for selecting a course of action. Decision rules also specify the extent of agreement among stakeholders for making recommendations (e.g., from a slight majority to consensus) and the extent that the implementing agency must adhere to the stakeholders’ recommendations. For example, a MPA statute might require that the final plan consider economic and ecosystem impacts or be subject to review by scientists.

6. Officials’ commitment to statutory objectives and leadership skills aid the implementation of a statute by providing a professional cast of government officials dedicated to attaining the objectives. A new policy will more likely succeed if its objectives are consistent with the mission of the implementation agency and if they have the abilities to lead and manage the process. For example, MPAs might collide with a culture of a government agency that has relied on traditional tools of fisheries management, such as gear restrictions or quotas.

7. Formal access by outsiders provides the political support for implementing a statute. The legal objectives of a statute will more likely be attained if sympathetic stakeholders and elected sovereigns are given access to influence decisions. For example, if a MPA program requires science-based decision making then the statute must provide formal means to incorporate scientific experts into its processes.

Mazmanian and Sabatier’s seven conditions have been criticized for setting unrealistic expectations that are simply unattainable (Winter, 2003, 213–214). The point in using Mazmanian and Sabatier’s conditions is not to argue that the MLPA was flawed in comparison to an ideal policy. Rather, the seven conditions are used to identify the critical components of the MLPA that contributed to the initial conflict in its implementation.

This article also understands the implementation of the MLPA by analyzing the networks and beliefs of stakeholders. Almost every policy process will involve a large number of actors with diverse beliefs and contacts. One way to analyze these actors is to organize them into coalitions of advocates and opponents based on shared network relations and beliefs (Sabatier & Jenkins-Smith, 1999, 120).

Network relations are a critical factor for policy implementation because success usually requires interactions among interested and affected actors (O’Toole, 2000). Actors
in policy implementation interact in different types of relationships. They might identify allies with whom they share beliefs. Actors react to other actors with whom they disagree and expect opposition. Actors coordinate with others by developing and executing common plans. Actors seek information to understand aspects of a policy area, such as the scientific arguments. This article analyzes ally, disagreement, coordination, and advice/information networks among advocates and opponents of the MLPA process.

Beliefs are important for understanding implementation because actors often filter events and information through preexisting beliefs (Lord et al., 1979; Simon, 1985). As a result, actors’ choice to oppose or support a policy usually reflects value priorities, perceptions of the seriousness and causes of problems, and preferences for possible courses of action (Sabatier & Jenkins-Smith, 1999, 120–122). This article analyzes MLPA stakeholder perceptions about the seriousness of marine resource problems, the adequacy of MPA science, the important uses of MPAs, and the likely long-term effects of the Master Plan Team proposal.

Methods of Data Collection

Most of the data analyzed in this article was gathered in the spring and summer of 2002. The initial purpose of the study was to evaluate the first attempt to implement the MLPA and then compare it to the second attempt to implement the MLPA in a stakeholder working group process (Weible et al., 2004; DFG, 2006). In the spring of 2002, I began by conducting approximately 50 preliminary interviews of California MPA stakeholders representing a cross-section of interests. Stakeholders are defined as policy participants who attempt to influence either directly or indirectly the MLPA process for an extended period of time. The preliminary interviews helped provide a historical context to the MLPA process, design and pretest a mail-in questionnaire, establish a stakeholder advisory committee to help with the research design, and generate a snowball sample of MLPA stakeholders. I modified the snowball sample with individuals who were quoted in newspapers, have published on the MLPA or MPA processes in California, and/or were active and alternate members of upcoming the stakeholder working groups.

The total modified snowball sample comprised of stakeholders indirectly involved in the MLPA (n = 177), California DFG officials (n = 13), the initial active members on the stakeholder working groups (n = 105), and the initial members on the Master Plan Team (n = 15). The stakeholder affiliations included federal government officials, DFG and other state government officials, local government officials, harbormasters/directors, kelp harvesters, commercial fishers, recreational fishers, commercial passenger fishing vessel operators, professional boating/touring association operators, consumptive divers, non-consumptive divers, environmentalists, and researchers (university and consultants).

In the summer of 2002, I conducted an additional 47 semi-structured interviews and administered a mail-in questionnaire. The 47 interviewees included federal agency officials (n = 3), state agency officials (n = 8), local government officials or harbormasters (n = 3), commercial fishing interests (n = 7), recreational fishing interests (n = 8), environmental groups (n = 8), scientists (n = 8), and two people who fall in the “other” category. I administered the mail-in questionnaire to the modified snowball sample of 310 MLPA stakeholders. A total of 193 people responded (62% response rate).

The validity of the data is threatened by faulty recollection by the respondents because the interview and questionnaire data were collected a year after the MLPA public meetings. For example, interviewees may have forgotten important events or modified their views over
time. I mitigate these threats in two ways. First, I collect and analyze data sources written during the first two years of the MLPA process, such as newspaper articles, stakeholder documents, and government reports. Second I analyze other ex post descriptions of the MLPA process (Bernstein et al., 2004; Helvey, 2004; Mize, 2006; Scholz et al., 2004).

A Case Study: The Marine Life Protection Act

The Passage of the MLPA

The MLPA was championed through the California legislature by a small group of stakeholders who acted as “entrepreneurs” in promoting a vision and a willingness to commit resources to establish an improved network of MPAs in the state. These entrepreneurs were motivated by at least three factors in pressing for the passage of the MLPA. First, the entrepreneurs perceived a problem in the status and management of state marine resources. By the late 1990s, scientific studies indicated that some California marine resources were under distress (Leet et al., 2001). The state was also reeling after the collapse of the abalone industry—an important recreational, commercial, and cultural species in California (Leet et al., 2001). Furthermore, a Sea Grant report explained how the current network of California MPAs was too small and established in an uncoordinated manner to be effective in protecting marine life and habitats (McArdle, 1997).

Second, the entrepreneurs believed in the general effectiveness of MPAs as a tool for ocean management. The entrepreneurs experienced positive effects of MPAs in other parts of the world, felt MPAs could make a difference, and wanted to establish an improved network of MPAs in California. One entrepreneur described his experience and faith in MPAs bluntly in an interview: “I dive around the world. I have been diving in marine reserves, and I see the difference.”

Third, the entrepreneurs believed they could change marine policy in the State of California through the legislative process. Some of the entrepreneurs were instrumental in working with state Senator Mike Thompson to sponsor Assembly Bill 463 in 1997, which placed a moratorium on harvesting abalone south of San Francisco and a $12 stamp on harvesting abalone north of San Francisco. In this effort, the entrepreneurs learned that they could be efficacious in directing California marine policies. They also found a “crack” in the California Fish and Game Commission. The California Fish and Game Commission has the authority to regulate marine resources—and to designate MPAs—but was reputed to support commercial fishing interests. After the passage of the Abalone Bill, the policy entrepreneurs learned that the Commission was receptive to proposals sympathetic to environmental protection.

The first MPA bill (AB 2404) came in 1998 and was introduced to California’s General Assembly by Assemblyman Kevin Shelley. AB 2404 combined new approaches for fisheries management and for MPA planning. AB 2404 passed both legislative chambers before receiving a veto by Governor Pete Wilson. In 1999 the entrepreneurs and Assemblyman Shelley responded by splitting AB 2404 into two pieces of legislation. To enhance fisheries management, the entrepreneurs introduced the Marine Life Management Act (AB 1241). To establish MPAs, they introduced the MLPA (AB 993).

In the legislature, the MLPA received support from many state environmental groups including the Natural Resource Defense Council, the Surfrider Foundation, and the Environmental Defense Center. Two major commercial and recreational fishing organizations, the United Anglers and the Pacific Federation of Coastal Fisherman,
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The acquiescence of the fishing organizations with the MLPA was a political miscalculation in hindsight. At the time, these fishing organizations were not expecting adverse effects from the MLPA or the unforeseen exclusion of fishing interests in its implementation. Additionally, most interviewees in this study did not know about the MLPA while it was in the state legislature. Eleven out of the thirty-two interviewees said that they had “heard about the MLPA” while it was in the state legislature.

At the time of the interviews, the stakeholder community was divided in their perceptions about the MLPA. Interviewees were asked on a one-to-ten scale (1 = dissatisfaction, 10 = satisfaction) if they were, “satisfied with the design of MLPA.” The commercial fishers, recreational fishers, and local government officials reported dissatisfaction or ambivalence with the organizational means ranging from 2.4 to 5.3. In contrast, state and federal government officials, environmentalists, and university researchers/consultants expressed more satisfaction with the organizational means ranging from 6.8 to 8.3. Stakeholders were also asked on the questionnaire on a seven-point scale (1 = disagreement, 7 = agreement) whether, “The Marine Life Protection Act should be amended to lesson the economic impact on the fishing industry.” The mean responses diverged with agreement from the fishing community and local government officials (recreational fishers = 4.7, local government officials and harbormasters = 6.8, and commercial fishers = 5.9) and with disagreement from the pro-MPA community (researchers = 2.5, state government officials = 2.3, federal government officials = 2.2, and environmentalists = 2.0).

The MLPA was signed by Governor Joseph Graham “Gray” Davis in 1999 and became part of the Fish and Game Code, Chapter 10.5, Sections 2850 to 2863. The MLPA required the DFG to reexamine and augment the state network of MPAs, including marine reserves, through a Marine Life Protection Program. The DFG was also charged to convene a Master Plan Team of scientists to help draft a plan for a network of MPAs based on the natural-sciences before incorporating the views of constituents and the fishing community. The DFG took nominations for the Master Plan Team in the beginning of 2000 and convened a Master Plan Team in April of 2000. The Master Plan Team included 15 people representing state and federal government officials and university scientists and consultants. The Master Plan Team met for approximately 15 months. The plans dealt mostly with habitat protection without much fishery data or contributions from commercial or recreational fisheries (DFG, 2006). One effort to solicit early public input occurred when the DFG mailed in the spring of 2001 surveys to commercial and some recreational fishers hoping to avoid some of the socioeconomic impacts from the pending MPAs but the resulting information was of no value to the Master Plan Team (DFG, 2006).

As the presentation of the preliminary plans neared, some Master Plan Team members predicted that the proposed MPA plan would create a maelstrom in coastal communities (DFG, 2006). One scientist compared the approaching public meetings to walking into a “buzz saw.” Another scientist stated, “Some of us knew what we were walking into but we could do nothing about it.”

The scientists’ apprehension about the public meetings was justified. The public meetings were a disaster. Approximately 2,500 people attended the public meetings (DFG, 2006). The DFG provided inadequate space and seating, poor sound systems, unclear presentations, and ineffective and untrained facilitators. In one meeting, more than 200 stakeholders spilled outside of the meeting hall (Benfall, 2001b). One environmentalist described the presentations as weak and confusing with insufficient explanations for the proposed placement of MPAs. The weak explanation gave the impression that the MPAs...
were randomly placed or even deliberately located to block access to ports and threaten the safety of fishermen. Some stakeholders felt that the DFG made a mistake by creating and posting maps of the preliminary plan, which made it appear that the preliminary plan was more permanent than it was intended to be (DFG, 2006).

On the questionnaire, stakeholders were asked several questions on a seven-point scale (1 = disagreement and 7 = strong disagreement) about the public meetings. Most stakeholders agreed that, “Constituents needed more time to prepare for the public meetings” (total mean = 4.8, p-value = .42). This result has validity because the DFG distributed the initial plans just two weeks before the public meeting (DFG, 2006). The questionnaire respondents confirmed reports that the meetings were poorly facilitated with most disagreeing that, “The meeting facilitator(s) did a good job of enforcing rules of participation” (total mean = 3.7, p = .86). The stakeholders differed in their views of the usefulness of the public meetings for gathering public opinion on the following statement, “Affected stakeholders had adequate opportunities to express their viewpoints at the public meetings” (total mean = 3.9, p < .00). Local government officials, commercial fishers, and recreational fishers disagreed with this statement (organizational means < 4) and environmental groups, state government officials, federal government officials, and scientists agreed (organizational means > 4.7). The range of responses probably reflects respondents’ interpretation of “adequate opportunities to express their viewpoints” in the statement. One interviewee stated: “People got to present their views and did so for hours. But the level of anger was so high during the meetings that there was a lot of abusive behavior by some participants. This was completely counter productive to solving any problems at all.”

The fishing community was upset at the public meetings for several reasons. They were upset about not being consulted earlier. A representative for the Pacific Coast Federal of Fishermen’s Association stated: “There was no consultation with the commercial fisherman, or recreational fishermen or divers about where these proposed areas should be. It’s hard to bring in thousands of people halfway through the process” (Kay, 2001). With possible closures near ports, the fishing community also worried about the adverse effects on safety. As one fisherman stated, “A lot of stuff is too close to ports. A lot of guys don’t have big boats and they can’t go out so far” (Benfall, 2001b). The fishing community was also insulted about the sheer size of the MPAs. The initial plan closed about one sixth of the coast line (Keith, 2001). One recreational fisherman said that the initial MPA plan constitutes one of the biggest government “land grabs” in state history.

Following the public meetings, the DFG organized more than 60 small public workshops in the fall of 2001. Stakeholders adjusted the maps and voiced their concerns in a deliberative setting. By January 2002, however, the DFG ended the first attempt to implement the MLPA. The DFG Director Robert Hight stated that the agency was “wiping the slate clean” and called the preliminary plan “ill-crafted concepts” (DFG, 2006; Zieralski, 2002, x).

By most accounts the first attempt to implement the MLPA was a short-term failure. One interviewee summed up his frustration with the start of the MLPA this way: “The CFG [California Department of Fish and Game] couldn’t have done a worse job of intruding with the MLPA if they had tried. The agency created a backlash that could not have been generated by any other means. Their approach in presenting the information at the first round of meetings set the MPA process back at least five years. It was inappropriate for them to present the audiences with printed maps, creating the erroneous appearance that the reserve configuration was a ‘done deal’. This gave the illusion that real boundaries had already been established without public input.”
A Statutory Analysis of the MLPA

1. Clear and Consistent Objectives. The MLPA identified six goals for the master plan (MLPA, sec 2853):

(a) To protect the diversity and abundance of marine life, and the structure, function, and integrity of marine ecosystems.
(b) To help sustain, conserve and protect marine life populations, including those of economic value, and to rebuild those that are depleted.
(c) To improve the recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbance, and to manage these uses in a manner consistent with protecting biodiversity.
(d) To protect marine natural heritage, including protection of representative and unique marine life habitats in California for their intrinsic value.
(e) To ensure that California’s MPAs have clearly defined objectives, effective management measures, and adequate enforcement, and are based on sound scientific guidelines.
(f) To ensure that the state’s MPAs are designed and managed, to the extent possible, as a network.

The six goals focus primarily on establishing MPAs to protect marine life and ecosystems. However, the goals were not prioritized and, in places, inconsistent. Improving recreational opportunities might conflict with protecting marine life. Likewise, the rationale for protecting marine natural heritage might be founded on principles other than science. Bernstein et al. (2004, 22) also recognized the inconsistencies in MLPA objectives: “The MLPA refers to both biodiversity conservation and fishery related goals but does not explain how these are to be implemented and balanced or traded off against each other.” In all, the MLPA presented objectives that were at times unclear, inconsistent, and not prioritized.

2. Adequate Causal Theory. A policy’s causal theory includes the adequacy of the conceptual and jurisdictional linkages from the proposed objectives, to the proposed action, and to actual outputs and outcomes. One of the primary purposes of the MLPA is ecosystem protection, and the science of MPAs has been shown to be a useful for protecting and restoring ecosystems (NRC, 2001). However, marine ecosystems were threatened by factors outside the jurisdictional control of DFG and beyond the capacity of MPAs, such as nutrient input from run-off from coastal and in-land development.

The MLPA also required the DFG to convene a participatory process without giving adequate time to do so. The 1999 MLPA listed several deadlines that would have been hard for any agency to meet: (i) By July 1, 2001, the DFG must have convened public workshops to review MPA draft plans (sec 2857a); (ii) By January 1, 2002, the DFG must have submitted to the California Fish and Game Commission a draft MPA plan (sec 2859a); (iii) By April 1, 2002, the DFG must have submitted the final plan to the California Fish and Game Commission (sec 2859b); and (iv) By July 1, 2002, the Commission must have adopted the plan (sec 2859b). Some of these deadlines were extended by the state government (DFG, 2006). One of the more ill-fated specifications of the MLPA was its requirement for a science-based approach to implementation. The MLPA separated science-based
processes from political processes by asking the Master Plan Team to first develop a plan based on science before seeking feedback from the fishing community in the public hearings. Such an approach had been shown to be problematic in issues with high scientific uncertainty and with intense goal conflict among stakeholders (see Lilienthal, 1944; NRC, 1996).

3. Initial Allocation of Financial Resources. The MLPA was not initially appropriated financial resources. The expectation was that funding would come from sources external to the state government. In fact, the David and Lucile Packard Foundation contributed nearly $50,000 in 2000 to help pay for the scientists participation on the Master Plan Team (DFG, 2006). The California State Government allocated $2 million in 2000, which provided staff support to the Master Plan Team, but most of this money went to other marine programs (DFG, 2006). Based on the interviewees, the amount of money allocated to DFG was not enough. One DFG official said that one of biggest flaws in the MLPA process was that it was unfunded. The DFG official went on to say: “The department does not have the resources to pursue the designation of these [MPAs] on its own as much as some people within the department would like to see that done.” The DFG official also said that insufficient funding was one reason why DFG was unable to hire a professional facilitator for the public meetings.

4. Hierarchical Integration within and among Implementing Officials. The MLPA included a number of “veto points” where opponents had the opportunities to stop, delay, or alter the MPA process. The most important veto points included (i) the initial feedback from stakeholders and a scientific peer-review process after the development of the Master Plan Team plan and (ii) during the review of the California Fish and Game Commission, which required two public hearings and feedback from the Joint Committee on Fisheries and Aquaculture. As it turns out, the first attempt to implement the MLPA was stopped after the initial feedback from stakeholders to the Master Plan Team plan.

5. Decision rules. The MLPA required that the “best readily available science” be used to develop the master plan (MLPA, sec 2855). This encouraged the DFG and the Master Plan Team to create a proposal based on science before seeking public comments. Enough science existed at the time to argue for an extensive network of MPAs (Murray et al., 1999). However, the commercial and recreational fishing interests questioned the scientific certainty in the general effectiveness of MPAs in California. On the questionnaire, 13% of the 47 commercial fishers and 30% of the 20 recreational fishers disagreed that “empirical studies based outside of California provide sufficient evidence that MPAs will benefit marine resources in California.” In contrast, 90% of the 30 environmentalist agreed with the same question. Eventually, many MPA opponents found science that would support their position in a report to the FishAmerica Foundation by Robert Shipp, who argued that no-take MPAs were not as effective as traditional tools of fisheries management for managing commercial species (Shipp, 2002). In all, the science-based decision rule gave DFG and MPA supporters some political leverage in requiring a science-based process but also gave opponents a counter argument based on the uncertainties of MPA effectiveness in California.

6. Officials’ commitment to statutory objectives and leadership skills. At least one interviewee believed that DFG was an inappropriate agency to implement the MLPA because the DFG’s culture emphasized traditional approaches of fishery management and conflicted with the space-based approaches of MPAs. However,
the questionnaire results provide little support for this argument. Most respondents from the DFG officials held strong pro-mpa beliefs. When asked on a seven-point scale (1 = strong disagreement, 7 = strong agreement) if "MPAs need to be expanded in California" the mean for DFG officials was 5.8 while the mean for commercial fishers was 1.7 and for environmental groups was 6.5. Several interviewees also argued that it was the upper level and not the implementing DFG officials (who tended to respond to the questionnaire) who were unsupportive of the MLPA. If there were merit to this argument, it would not be true of all upper-level DFG officials. One appointed DFG official described strong support for the MLPA in an interview.26 The most consistent opinion among interviewees about DFG was in reference to their lack of professional competence in managing the MLPA process. Based on the findings from separate interviews of MLPA participants, Bernstein et al. (2004, 22) came to a similar conclusion:

Department of Fish and Game staff point out that training as biologists does not prepare someone to deal with complex and potentially contentious stakeholder processes. Thus, managers appear to have overestimated the capacity of the department to successfully design and administer the necessary planning, consultant, and negotiation activities required by the MLPA.

7. Formal access by outsiders. The results are mixed. The MLPA gave the Master Plan Team scientists ample influence. However, the supporters of the MLPA were simply overwhelmed in the public hearings in the coastal communities, which were required by the MLPA (sec 2857). The coastal public hearings limited the participation of non-coastal people and possibly amplified the arguments for considering local costs rather than state-wide benefits. Although the views of California's coastal and inland populations about MPAs are unknown, the effects of different geographical locales on political behavior has been found in previous empirical research, including studies of California coastal land use policy (Mazmanian & Sabatier, 1980). The argument is that coastal communities would more likely bear short-term costs in lifestyle and economic change compared to the state as a whole.

Table 1 summarizes the statutory analysis of the design of the MLPA. The MLPA’s objectives were not ranked and were sometimes inconsistent, which allowed for multiple interpretations about the appropriate balance between ecosystem protection and other priorities such as fisheries management. By separating the scientific process from the political process, the MLPA encouraged the DFG to isolate the Master Plan Team scientists from the fishing community. The lack of access and input into the Master Plan Team process frustrated the fishing community and helped mobilize their ranks into protest. The DFG were incapable of handling the upsurge in opposition partly because of the MLPA’s strict deadlines and inadequate funding for professional facilitators. Whereas MPA opponents were able to recruit their pro-fishing supporters for the public meetings, the DFG and MPA allies were unable to recruit the same level of support, possibly because the public meetings were held only in coastal communities. In sum the design of the MLPA created sufficient conditions for conflict and delay in its implementation.
Table 1  
A statutory analysis of the MLPA

<table>
<thead>
<tr>
<th>Condition</th>
<th>Overall assessment</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Clear and Consistent Policy Directives</td>
<td>Mixed/Low</td>
<td>The statute leaned toward ecosystem objectives but objectives were unclear, inconsistent, and not ranked.</td>
</tr>
<tr>
<td>2. Adequate Causal Theory</td>
<td>Mixed</td>
<td>Adequate for protecting ecosystems/habitats but inadequate for enhancing fisheries. The MLPA gave inadequate time for meeting milestones and assumed a false dichotomy between science and politics.</td>
</tr>
<tr>
<td>3. Initial Allocation of Financial Resources</td>
<td>Low</td>
<td>The statute was under funded.</td>
</tr>
<tr>
<td>4. Hierarchical integration within and among implementing officials</td>
<td>Low</td>
<td>Many veto points for opponents to stop, delay, or alter MPA plans and implementation.</td>
</tr>
<tr>
<td>5. Decision rules</td>
<td>Mixed/High</td>
<td>The science-based decision rules favored MLPA proponents but also allowed opponents to question MPA science.</td>
</tr>
<tr>
<td>6. Implementing Officials’ Commitment and Skill</td>
<td>Mixed/Low</td>
<td>DFG implementing officials supported MPAs. The evidence is unclear for upper level DFG officials. DFG implementing officials lacked expertise in designing and managing contentious processes.</td>
</tr>
<tr>
<td>7. Formal access by outsiders</td>
<td>Mixed</td>
<td>The MLPA gave ample opportunities for sympathetic scientists to influence the early process. But the public hearings favored opponents.</td>
</tr>
</tbody>
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Analysis of MLPA Stakeholders Networks

The MLPA stakeholders were asked to name their top two contacts in four different types of networks in the questionnaire. The question was phrased: “Please identify up to two organizations that: (i) You regard as allies on important MPA issues; (ii) You disagree with most frequently on MPA issues; (iii) You relied on most heavily for information or advice on MPA issues; and (iv) You seek to coordinate with on issues related to MPAs.” The list of organizations included: federal governments (e.g., NOAA, NMFS); state governments (e.g., CDFG, Fish and Game Commission); local governments; harbormasters/directors; kelp harvesters; commercial fishing; recreational fishing; commercial passenger fishing vessels; professional boating/touring associations; consumptive diving groups; non-consumptive
diving groups; environmental groups; researchers (university and consultants); and others. Only two professional boating/touring association representatives responded and were placed in the “other” category.27

Figure 1 summarizes the network citations of the respondents into two coalitions representing proponents and opponents of MPAs across the four networks. A pro-MPA coalition (total $n = 100$) comprises university researchers/consultants ($n = 34$), state government officials ($n = 22$), federal government officials ($n = 13$), non-consumptive divers ($n = 14$), and environmentalists ($n = 17$). An anti-MPA coalition (total $n = 84$) comprises kelp harvesters ($n = 5$), local government officials ($n = 6$), commercial passenger fishing vessel operators ($n = 7$), consumptive divers ($n = 6$), harbormasters ($n = 6$), recreational fishers ($n = 17$), and commercial fishers ($n = 38$). For each network type, Figure 1 presents the mean percent of citations from the pro- and anti-MPA coalitions to the pro- or anti-MPA coalitions. The citing coalition affiliations are listed on the left with total citations in parentheses. The percent of citations received by each coalition is represented by the dark bars for the pro-MPA coalition and by the white bars for the anti-MPA coalition. For example, the 100 stakeholders in the pro-MPA coalition could name two allies for 200 possible ally citations. Stakeholders in the pro-MPA coalition named just 178 allies, indicating that some pro-MPA respondents mentioned one ally or none. Of the 178 ally citations by the pro-MPA stakeholders, 87% (or 154 cites) went to members of the pro-MPA coalition whereas only 13% (or 24 cites) went to the anti-MPA coalition.

The MLPA stakeholders were polarized across almost all network types. For the pro-MPA coalition members, the percent of citations to affiliations within their coalition was 87% for ally networks and 76% for coordination networks. Showing a great deal of isolation, 91% of the pro-MPA coalition’s citations for advice/information networks went to the pro-MPA coalition. The high frequency of advice/information citations from the pro-MPA coalition to the pro-MPA coalition supports assertions in the literature that MPA advocates are not reaching out and listening to the fishing community (Agardy et al., 2003; Brown et al. 2001; Christie et al. 2003; Crawford et al. 2006; Johannes et al., 2000). The pro-MPA coalition also cited the anti-MPA coalition members with a large majority of their disagreement citations (87%).

Further examination of the data suggests that the pro-MPA coalition members served different roles within the coalition. The pro-MPA coalition most frequently named environmental groups as allies (28% their 178 ally cites), placing environmental groups in a lead advocacy role for the coalition. State and federal governments played their most important role in coordination networks (25% and 22% of 178 coordination citations). The non-consumptive divers received a low number of citations across all networks with the most coming in ally networks (19% of 178 ally citations).

University researchers/consultants were the most important source for advice/information for the pro-MPA coalition (45% of the 174 information cites). University researchers/consultants were also frequently named by the pro-MPA coalition as allies (25% of 178 ally citations) and for coordination (20% of 168 coordination citations). In contrast, the anti-MPA coalition rarely mentioned university research/consultants as allies (7% of 161 ally citations) or for coordination (8% of 148 coordination citations). The result suggests that MPA scientists were not neutral in their contacts in the MLPA process.

Compared to the pro-MPA coalition, the anti-MPA coalition expressed nearly the opposite patterns in their networks with a couple important differences. The percent of citations from the anti-MPA coalition to the anti-MPA coalition was 81% for ally networks and 70% for coordination networks. However, the anti-MPA coalition divided their
information sources evenly between the pro- and anti-MPA coalitions with approximately 55% going to the pro-MPA coalition and 45% going to the anti-MPA coalition. The anti-MPA coalition frequently disagreed with the pro-MPA coalition (87% of disagreement citations) and most often with environmental groups (45% of 154 disagreement citations).

A closer look at the data showed that the anti-MPA coalition was splintered into two sub-coalitions: a recreational fishing sub-coalition and a commercial fishing sub-coalition. On one side, recreational fishers, consumptive divers and commercial passenger fishing vessel operators shared similar network contacts, especially in their choices for allies and coordination partners. For example, consumptive divers and commercial passenger fishing vessel operators, respectively, mentioned recreational fishers as their top coordination partner (45% and 27% of their coordination citations) and as their top ally (45% and 38% of ally citations). Likewise, recreational fishers mentioned consumptive divers and commercial passenger fishing vessel operators as their top two allies (32% and 26% of ally citations, respectively). On the other side, commercial fishers and harbormasters shared similar network ties and frequently mentioned each other for ally and coordination networks. Harbormasters most frequently mentioned commercial fishers as allies (45% of ally citations) and as coordination partners (25% of coordination citations). Likewise

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**Figure 1.** MLPA coalitions and networks.
commercial fishers named harbormasters with 17% of their ally citations and 28% for coordination cites (second only to commercial fishers).

It is important to limit the generalizability of the network patterns in Figure 1. The questionnaire asked stakeholders to name their top two contacts across network types and not all network contacts. It was obvious in the interviews that many people interacted with members of the opposing coalition (Weible, 2005). Officials with the California DFG often worked with commercial fishers to manage the fisheries. Interviewees described how stakeholders often contacted opponents because they needed information or because they wanted to understand different points of view. Additionally, many opposing stakeholders had interacted in other collaborative processes, such as the Channel Islands MPA process (Helvey, 2004).

The network analysis provides another approach for understanding the frustrated start for the MLPA. One critique of the Master Plan Team process was that it excluded the perspective of the fishing interests and local communities. The network analysis suggests that this might have been artifact of the stakeholder community interacting within two coalitions. Noteworthy were the insulated information sources for the pro-MPA coalition. Even if the Master Plan Team members considered—and wanted to—contact members of the fishing community they might not have had the connections to do so. A Master Plan Team interviewee stated, “We knew we needed more public input but we didn’t have an avenue and we didn’t have the list of contacts.”28 The largely non-overlapping ally and coordination networks probably exaggerated group-think mentalities, distrust of opponents, and different worldviews, which helps explain the conflict between the two coalitions. In all, the network analysis suggests that the first attempt to implement the MLPA reflected a stakeholder community with separate networks of allies with limited the flow of information, limited joint coordination, and exaggerated perceptions of disagreement about the problem.

Analysis of MLPA Stakeholder Beliefs

On the mail-in questionnaire, stakeholders were asked to respond to five categories of beliefs: (i) beliefs about expanding MPAs, (ii) beliefs about science-based management and MPA science, (iii) the seriousness of marine resource problems, (iv) the important uses of MPAs, and (v) the expected long-term effects of the Master Plan Team drafts.29

The coalitions and their beliefs are summarized in Figures 2 through 5. Each figure shows the belief variables on the left and the percent agreement by the anti-MPA coalition (white bar) and the percent agreement by the pro-MPA coalition (black bar). For Figure 2, 4, and 5, the percent agreement equals the number out of all coalition members who responded with a four or more on a seven-point scale where 1 = strongly disagree and 7 = strongly agree. For Figure 3, the percents equal the number out of all coalition members who perceive an issue to be a severe problem (gave a response greater than 50 on a 100-point scale with 0 = not a problem at all to 100 = a severe problem). For example, Figure 2 shows that 86% of the 100 pro-MPA coalition members agreed (responded with a score greater than 4) that MPAs needed to be expanded in California whereas only 9% of the 84 anti-MPA coalition members agreed. Using a Welsch test for unequal variance between groups, coalitions differ significantly across all belief measures ($p < .00$) except for “reduced commercial fishing landings” ($p < .01$) and “reduced recreational fish landings” ($p = .33$) in Figure 3 and for “safety of fishermen” ($p < .02$) in Figure 5.
The figures show that the coalitions of MPA proponents and opponents diverge in most beliefs. Some of the biggest differences are in Figure 2, where the pro-MPA coalition agreed about expanding MPAs and about the use of science in management. The pro-MPA coalition’s support for science provides one rationale for their support for the first attempt to implement the MLPA. More than half of the pro-MPA coalition members agreed about the adequacy of MPA natural science but only 22% agreed about the adequacy of MPA social science. In contrast, the anti-MPA coalition members expressed skepticism of science-based management and about the social and natural MPA science. Only 9% of the anti-MPA coalition members agreed about expanding MPAs in California. The anti-MPA coalition’s beliefs about science and expanding MPAs provide at least one explanation for their early protest against the MLPA.

In Figure 3, at least 63% of the pro-MPA coalition members agreed about the seriousness of marine habitat destruction, the loss of biodiversity, and reductions in commercial and recreational fish landings. Expressing similar levels of concern, about half of the anti-MPA coalition viewed commercial and recreational fish landings as serious problems. However, the anti-MPA coalition was more likely to disagree than agree about the seriousness of biodiversity loss and the degradation of marine habitats. If one of the conditions for policy change is the perception of a serious problem, Figure 3 suggests that the pro-MPA coalition perceived the current status of marine resources in worse condition than the anti-MPA coalition, giving a possible incentive to support new approaches to marine governance. On the other hand, about half of the anti-MPA coalition did not consider fish
landings, marine habitat destruction, or loss of biodiversity as serious problems, giving some members of the anti-MPA coalition a reason to support current policies.

Figure 4 shows that more than half of the pro-MPA coalition believed that MPAs were useful for ecosystem protection, scientific research, education and recreation opportunities, and fisheries management. About half of the anti-MPA coalition thought MPAs would be useful for ecosystem protection and scientific research, but less than half of the anti-MPA coalition agreed that MPAs would be useful for providing educational opportunities, managing fisheries, and providing recreational opportunities. A comparison of the beliefs of the anti-MPA coalition in Figure 3 and Figure 4 shows that the anti-MPA coalition’s top concern involved reduced commercial and recreational fish landings. However, the anti-MPA coalition did not perceive MPAs as a useful fisheries management tool. From the anti-MPA coalition’s perspective, serious marine resource problems were matched with ineffective policy tools of MPAs. The anti-MPA coalition also believed that MPAs were useful for protecting ecosystems but did not believe that loss of biodiversity or habitat degradation were serious problems, which matches an effective policy tool to a problem not perceived as serious. Kingdon (1995) notes that one of the precursors to policy change is a window of opportunity where stakeholders perceive a symbiotic coupling of policy problems and solutions, the evidence from Figure 3 and 4 suggests that, while the pro-MPA coalition members might have perceived a window of opportunity, the anti-MPA coalition did not.
Figure 4. Percent agreement by anti- and pro-coalitions for important uses of MPAs. Note: Pro- and anti-MPA coalitions statistically diverge at $p < .00$ for all variables using a Welch test assuming unequal variance.

Figure 5 presents stakeholders’ perceptions of the likely effects of the Master Plan Team proposal on coastal communities. More than half of the pro-MPA coalition members believed that the Master Plan Team proposal would have provided good research sites, benefited marine life and marine ecosystems, improved fish landings, and benefited the economies of coastal towns and cities. In hindsight, the positive reviews about the Master Plan Team plan are surprising because the Master Plan Team plan has been criticized by many, including the Director of the DFG (Zieralski, 2002). In contrast, the only positive expectation from the anti-MPA coalition about the Master Plan Team plan was providing sites for scientific research.

The analysis of stakeholder beliefs helps understand the first attempt to implement the Master Plan Team process by highlighting the divergent perceptions between the MPA coalitions of proponents and opponents. The coalitions disagreed about the role of science in management, the seriousness of various marine problems, interpretations of the scientific uncertainty of MPAs, the preference to expand MPAs in California, and the important uses of MPAs. Both coalitions expressed some doubt about the adequacy of MPA sciences, but the pro-MPA coalition was more likely to turn uncertainty into optimism and accept that MPAs were needed in California. Both coalitions agreed that MPAs were a useful tool for ecosystem protection, but the anti-MPA coalition did not consider degraded ecosystems a serious problem. Both coalitions agreed that the fishing industry was stressed, but the anti-MPA coalition did not consider MPAs as a useful tool for fisheries management. Both coalitions agreed that Master Plan Team proposal would not have positive effects on the fishing industry, local communities, and marine stakeholder relationships.
Figure 5. Percent of anti- and pro-MPA coalitions who expect positive long-term effects from the Master Plan Team Plan. Note: Pro- and anti-MPA coalitions statistically diverge at $p < .00$ for all variables except for “safety of fishermen” ($p < .02$) using a Welch test assuming unequal variance.

Conclusions

One can understand the first attempt to implement the MLPA by examining the design of the statute and the beliefs and networks of stakeholders. Stakeholders were largely divided into coalitions of proponents and opponents of MPAs. MPA proponents held strong beliefs about science-based management, the benefits of MPAs, and the serious problems about marine resources. MPA opponents expressed skepticism about science-based management, doubted the effectiveness of MPAs, and questioned the seriousness of most marine resource problems. Opponents were given opportunities to challenge the MLPA process by the statute’s design which included: (i) insufficient financial support, (ii) unclear, unranked, and inconsistent statutory objectives, (iii) an implementing government agency that was unskilled in designing and managing political processes, and (iv) a science-based process that excluded affected stakeholders early in the process. While the DFG ended the initial MLPA process and called the initial plan “ill-crafted,” this analysis shows that the pro-MPA coalition expected that the Master Plan Team’s plan would have provided good research sites and protected ecosystems and enhanced marine life.

A long-term perspective suggests that the first attempt to implement the MLPA was the initial phase of a continuing process (DFG, 2006; Mize, 2006). The second attempt to implement the MLPA (from 2002–2003) included a multi-stakeholder collaborative process that ended because of a state budgetary crisis. The third attempt to implement the MLPA was a phased multi-stakeholder collaborative process starting with central California. Stakeholders in this third attempt recently reached an agreement. And, nearly a decade after
its enactment, the California MLPA has produced MPAs on the California coast (DFG, 2006; Mize, 2006). From a long-term perspective, the initial effort to implement the MLPA can be thought of as the first step in learning among MPA proponents and opponents.

The methods of data collection, analysis, and interpretation used in this article have limits, two of which are identified and addressed. First, an anonymous and knowledgeable reviewer suggested that a primary cause of the initial MLPA conflict was confusion and disagreement about definitions of MPAs. The reviewer claimed: “The lack of clarity and use of a common definition is one of the key problems in dealing with MPAs—it is difficult to reach consensus when one person thinks of MPAs as sites with a range of potential limitations and the other defines MPAs as no-take reserves.” Definitional issues certainly could have contributed to the initial MLPA conflict. I did not inquire nor do I find evidence that competing definitions of MPAs was the major cause of conflict. I encourage other researchers to investigate such “definitional” explanations. However, I caution against explaining MPA conflicts based on definitional issues because disagreements of this kind—especially involving scientific and technical issues—usually originate from underlying values differences rather than communication problems (Mazur, 1981). Robert Lackey, an official with the U.S. Environmental Protection Agency, discusses this point with one of his axioms of ecological policy problems: “The meaning of words matters greatly and arguments over their precise meanings are often surrogates for debates over values” (2006, 286).

Second, this article categorized MLPA stakeholders into coalitions of proponents and opponents of MPAs, which one could argue lacks validity.33 Readers should recognize that respondents were not asked to place themselves in coalitions. Instead, coalition membership was based on the conceptual and methodological approach found in the advocacy coalition framework, which defines coalitions by similar network patterns and beliefs (Sabatier & Jenkins-Smith, 1999, 120). Additionally, coalition members were not homogenous in beliefs or relations. In fact, interview and questionnaire data show that members within a coalition often disagreed in beliefs and varied in their network relations (Weible, 2005). Given less-than-ideal membership, coalitions continue to be a useful approach for examining political phenomena for at least two reasons: (i) People form groups in contentious or high-stake situations to help attain shared goals and (ii) Empirically driven science requires simplification and classification.34 On the latter point, I find political scientist Robert Dahl’s discussion convincing: “A classification is a way of simplifying—and in a sense, ‘distorting’ reality. All empirical analysis requires some simplifying ‘distortion.’ If every atom were treated as unique, physics would be impossible; if every medical case were considered unique, no advances in medicine could occur. In empirical analysis knowledge consists of generalization, which requires one to exclude the unique in favor of the general properties of a concrete event or system. In the real world, concrete systems rarely represent ‘pure’ types; they are usually mixed. This is true in physics, biology, medicine, and, of course, politics” (1963, 30).

A glance at the literature indicates that the first attempt to implement the MLPA is but one of many examples of similar challenges to MPA planning and implementation (Crawford et al., 2006; Gomez et al., 2005; White et al., 2002; Wolfenden et al., 1994). Improving the planning and implementation of MPAs is constrained by the capacity to document and to learn the right lessons from past failures and successes. I see four strategies to improve the learning from MPA processes. First, use complementary methods of data collection and theoretical analysis to understand MPA processes. The research presented in this article benefited from complementary data sources (mail questionnaire, interviews, and the analysis of publicly available documents) and complementary analytical approaches
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Second, focus comparatively across study sites and longitudinally over time. Lessons learned from MPA processes will be limited in applicability until temporal, cultural, economic, and environmental contexts are taken into account. Third, keep processes open. There are too many unknowns about MPA successes and failures to exclude policy researchers from documenting and reporting the processes and outcomes. Finally, compare lessons from MPA processes to other coastal, marine, and terrestrial processes. MPA policies share the same scientific uncertainties and value disputes found in other policy processes, which provide excellent opportunities for advancing the science and practice of governance.

Notes

1. A number of definitions of MPAs exist. See Jones (2002, 198) and Agardy et al. (2003, 355–357) for interesting discussions about defining MPAs.

2. Mazmanian and Sabatier (1989) place the skills of implementing officials in a different part of their framework. I include it in this particular condition to limit the analytical scope of the current article. Additionally, extant research provides a number of examples that illustrate the importance of congruence between a policy’s goals and the implementing agency’s mission and culture (Pressman & Wildavsky, 1973).

3. I have yet to find a better list of conditions for analyzing statutes outside of Mazmanian and Sabatier (1989).

4. Kingdon (1995, 122–123) defines an entrepreneur as a stakeholder who “advocates for proposals or for the prominence of an idea. . . . These entrepreneurs are not necessarily found in any one location in the policy community. They could be in or out of government, in elected or appointed positions, in interests groups or research organizations. But their defining characteristics, much as in the case of business entrepreneurs, is their willingness to invest their resources—time, energy, reputation, and sometimes money—in the hope of a future return, that return might come to them in the form of policies of which they approve, satisfaction from participation, or even personal aggrandizement in the form of job security or career promotion.”

5. The three motivating factors for the policy entrepreneurs are based on interviews with four people involved in drafting the MLPA and advocating its enactment (personal communications, April 4, 2002; April 11, 2002; August 20, 2002; September 9, 2002).

6. This point was also made by Bernstein et al. (2004). Additionally, before the passage of the MLPA, there existed over 100 MPAs covering 14 of the 220,000 square miles of state and federal waters off the coast of California (McArdle, 1997; MLPA section 2851g).


8. Ibid.

9. Ibid.

10. This was also confirmed in at least two interviews in spring and summer 2002 (personal communications, April 4, 2002; September 25, 2002).

11. Not all interviewees were asked this question because of time constraints.


16. Many people felt that the southern California meetings were more effective than the northern California meetings. One stakeholder described a southern meeting as effective in providing information and with stronger facilitation compared to the northern meetings.

17. Also supported by personal communications (September 20, 2002) and by Bernstein et al., (2004, 20).

18. Of the 193 people who responded to the mail-in questionnaire 65% of them attended at least one public meeting (n = 121). For the analysis of the public meeting questions in text, the p-values are
based on One-way ANOVA to test a significant difference among stakeholder organizational affiliations. The stakeholder organizational affiliations include commercial fishers (including kelp harvesters), recreational fishers (including consumptive divers and commercial party vessel operators), local governments, state government officials, federal government officials, environmental groups (including non-consumptive divers), and researchers.

22. Additionally, Bernstein et al. (2004, 22) noted that the MLPA was unclear in its requirements for establishing new MPAs or in redesigning current MPAs.
24. Personal communication, September 12, 2002. This interviewee felt that the California State Parks would have been a better agency for the MLPA.
27. See Weible (2005) and Weible and Sabatier (2005) for a more in-depth network analysis of the coalitions in the initial MLPA process. On the questionnaire, stakeholders were also asked to place themselves in an organizational affiliation. The affiliation categories matched those used in the network analysis. The number of actors in the coalitions does not equal the total number of respondents because some actors fell in the “other” category.
29. The variables in Figure 2 and 4 were measured on seven-point scales with one equal to “strongly disagree” and seven equal to “strongly agree.” The variables in Figure 3, about the seriousness of marine resource problems, were measured on a 100-point scale (0 = not a problem at all, 100 = an extremely severe problem). The variables in Figure 5 were measured on a seven-point scale (−3 = very negative effect, 0 = no net effect, +3 very positive effect). The pro-scientific management beliefs (Figure 2) is a three-item scale comprised of four questions (alpha = .77): (1) Scientific methods provide the best technique for understanding the natural world (factor loading = .76); (2) Scientific experts often look for data, which supports their own personal values (factor loading = −.87, reversed); and (3) Local preferences should ultimately prevail, even when they conflict with the judgment of scientific experts (factor loading = −.85, reversed). For expanding MPAs (Figure 2) stakeholders were asked: “MPAs need to be expanded in California.” For adequacy of MPA science (Figure 2), stakeholders were asked (question reversed): “The existing body of information about the effects of MPAs is inadequate in the (a) natural sciences; (b) social sciences.” For seriousness of marine resource problems (Figure 3), stakeholders were asked: “Please indicate the current seriousness of the following problems for your marine region or community . . . (a) Reduced commercial fish landings, (b) Reduced recreational fish landings, (c) Marine habitat destruction, (d) Low of biodiversity.” For important uses of MPAs (Figure 4), stakeholders were asked: “The most important uses of MPAs along the CA coast include: (a) Ecosystem protection, (b) Scientific research sites, (c) Educational opportunities, (d) Recreational opportunities, and (e) Fisheries management.” For expected long-term positive effects of the Master Plan Team proposal (Figure 5), stakeholders were asked: “Please predict the likely long-term effects of the Master Plan Team’s recommendation, if implemented on the following attributes of coastal/marine systems . . . (a) Commercial and recreational fish landings; (b) Diversity and abundance of marine life; (c) Function of marine ecosystem; (d) Economies of coastal towns and cities; (e) Relationship between recreational and commercial fisheries; (f) Relationship between marine fishermen and non-consumptive divers; (g) Safety of fishermen; and (h) Sites for scientific research.”
30. Many theories of the policy process hypothesize that one of the conditions for policy change is perceptions of a serious problem (Sabatier, 1999).
31. Bernstein et al. (2004) also identified factors two, three, and four.
32. A previous analysis found that the pro-MPA coalition evaluated the Master Plan Team process higher than their expectations for the forthcoming stakeholder working group process (Weible et al., 2004).
33. This was a point raised by an anonymous reviewer.

34. One alternate approach to categorizing stakeholders is by organizational affiliations. My sense is that the conclusions of this article would not significantly change but would increase significantly in complexity if I provided the same information by organizational affiliations. For instance, if I were to analyze the stakeholders by their 14 organizational affiliations as measured in the questionnaire and by the 20 belief variables as presented in the figures, there would have been 280 variables to present and discuss.

References


Shipp, R. D. 2002. No take marine protected areas (nMPAs) as a fishery management tool, a pragmatic perspective. A Report to the FishAmerica Foundation.


