

Methods of social assessment in marine protected area planning: is public participation enough?

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Abstract

Addressing social and economic considerations is crucial to the success of Marine Protected Area (MPA) planning and management. Ineffective social assessment can alienate local communities and undermine the success of existing and future MPAs. The success of methods currently used to incorporate social and economic considerations into MPA planning, however, is rarely critiqued. Three Australian MPA planning processes covering three states and incorporating federal and state jurisdictions are reviewed in order to determine how potential social impacts were assessed and considered. These case studies indicate that Social Impact Assessment (SIA) is under-developed in Australian MPA planning. Assessments rely heavily on public participation and economic modelling as surrogates for dedicated SIA and are commonly followed by attitudinal surveys to gauge public opinion on the MPA after its establishment. The emergence of issues around public perception of the value of MPAs indicates the failure of some of these proposals to adequately consider social factors in planning and management. This perception may have potential implications for the long term success of individual MPAs. It may also compromise Australia's ability to meet commitments for MPA targets, made under a range of international agreements, to gazette at least 10% of all its marine habitats as MPAs. Indeed, this is demonstrated in two of the three case studies where social and economic arguments against MPAs have been used to delay or block the future expansion of the MPA network.

1. Introduction

Marine Protected Areas (MPAs) are a cornerstone of marine conservation and currently cover approximately 1.17% of the world's oceans [1-3]. A range of international agreements to which Australia is a signatory call for the protection of marine biodiversity through a global network of MPAs covering between 10 and 30% of its marine habitats by 2012 [1, 2, 4]. Despite large advances in levels of protection in the last decade it is now apparent that these targets are very unlikely to be met within the specified timeframes [1]. Australia is one of the more advanced countries in the world in terms of its progress towards meeting MPA targets through the ongoing establishment of a National Representative System of Marine Protected Areas (NRSMPA) [5]. At present MPAs make up just under 10% of Australia's territorial waters with planning for additional MPAs well advanced in a number of regions [6]. However Australia's MPA protection remains patchy and it appears to be following an emerging global trend of establishing large MPAs in areas removed from human population. This trend is likely to be a reflection of the complexities of establishing and managing MPAs within the social, political and economic context of more densely populated areas [1]. The difficulties associated with planning and managing MPAs in high use, highly contested spaces suggests a

need to regularly evaluate the way in which social and economic considerations are incorporated into planning exercises.

The complexities of the relationship between people and their environment make it crucial to examine conservation problems hand-in-hand with societal beliefs, customs, attitudes and practices [7]. Despite this, opinion remains divided as to how much the consideration of community views should be factored into conservation management decisions [8-13]. Divergent views within both the terrestrial and marine conservation field include those that advocate a science based, top down approach, often built on a 'preservationist' ethic, and those that argue for a community based, bottom up approach, built on more pragmatic principles [11, 13, 14]. The challenge for global conservation movements is to find a 'middle ground' between these two points of view [13]. Any debate around what is an acceptable compromise between scientific and the socio-economic objectives (sometimes called the parks vs people debate) requires an honest acknowledgement of the trade-offs involved in achieving conservation outcomes. It is only then that meaningful dialogue can commence around what is 'non negotiable' and 'negotiable' in planning exercises in both scientific and socio-economic terms [11, 15]. Social assessment therefore plays an important role in building an understanding and appreciation of the social factors that influence conservation planning and provide insight into the possible areas around which discussions of appropriate 'trade-offs' can occur.

Social assessment is a means of gathering information about the social domain in order to inform management decisions [16]. MPAs primarily regulate human behaviour, so it is inevitable that MPAs will have some affect on local communities [9, 17-19]. The need to include social assessment in MPA planning has therefore been recognised for some time and has long been part of the political and policy framework for the selection and management of MPAs, both in Australia and the rest of the world. [18, 20-24]. In practice, research into the social impacts of MPAs is limited [19, 20, 25]. The role of the social sciences in conservation and MPA management has often been criticised for lagging behind the bio-physical sciences or for being fragmented, disjointed or completely absent [17, 22, 26]. This is despite evidence that social factors are the primary determinants of the success or failure of a MPA [17, 18, 22, 27, 28]. Social impacts can be diverse and complex in their nature and are most likely to be felt by individuals, families or groups at a local rather than regional or national level [16, 29, 30]. In the case of MPAs and, in particular, no-take MPAs (where all forms of fishing or extraction are prohibited), social impacts may include increased congestion in unrestricted areas and a restriction in the choices available to users for safe and accessible fishing locations [19, 31, 32]. MPAs have the potential to affect the wellbeing of individuals and groups who value their use of marine environment as integral to their 'way of life' and social identity [33-36]. MPAs may also cause equity issues within local communities if some stakeholder groups, such as fishers, feel marginalised in favour of other groups, such as divers and other tourism operators [17]. The ability and/or willingness of local communities to absorb these impacts can and does directly affect the success or failure of MPAs [17, 18, 21, 22, 27, 28, 32, 37-39].

Social assessment takes many forms but arguably the most developed tool for predicting social impacts in advance of a management action is formal Social Impact Assessment (SIA). SIA is one of three key impact assessment disciplines which have developed since the 1970s out of the principles of Ecologically

Sustainable Development [40, 41]. SIA, however, is acknowledged to be the 'poor cousin' of the other two disciplines of Environmental and Economic Impact Assessment, and is far less commonly used [16]. This is likely to be due in part to the fact that international guidelines on the development of SIAs promote a comparative model which involves studying events and impacts experienced in the past and extrapolating what is likely to occur in another location where a similar action is proposed. A lack of adequate or reliable data of the impacts of past interventions can make this comparative approach problematic [16]. SIA however serves an important function in providing a strategic approach to social assessment incorporating a range of different methods. These include the development of regional profiles (incorporating key socio-economic and demographic data) and public participation throughout the process [42, 43]. Importantly SIA also considers secondary or cumulative impacts and the development of mitigation strategies which aim to maximise benefits and minimise costs to society and ensure the overall improvement of social wellbeing as a result of a planned policy or action [30, 42, 43].

'Public participation' is a much more commonly used tool for social assessment, however it differs in an important way from SIA in that it is not used to measure or assess social impacts in advance of proposed action. Instead it is mainly used to include the public in the decision making process in an effort to minimise social impacts through negotiation with key stakeholders [41]. Public participation may take many forms. 'Participation' may involve 'consultation', whereby comments are sought from interested parties but ultimately the government makes the final decision. This approach may result in participants feeling disenfranchised if the outcome does not reflect their views. Participation may also mean 'partnership' if the government works with recognised sectoral interest groups, often formalised through advisory groups or committees, to jointly make management decisions. These processes may disadvantage unorganised or disparate minority groups who are without a recognised lobby group. A third form of participation is 'delegation', in which decision making is handed over to a board of community members to ensure separation of decision making from the political arena. No matter which form of participation is selected by governments, it is increasingly being met with mistrust and cynicism by citizens seeking more direct control over decisions that affect them [44]. Frustratingly for public officials, it is not uncommon for decisions taken by governments to be criticised over lack of consultation despite extensive and exhaustive efforts to engage local communities. This is perhaps reflective of a view that despite being given numerous opportunities to 'have their say' stakeholders feel their views have not been listened to.

This paper examines the way in which social assessment is currently undertaken in Australian MPA planning exercises by looking at three case studies which have resulted in significant contributions to Australia's NRSMPA. The case studies incorporate both federal and state jurisdictions and two common MPA models - large multiple use MPAs, where the park is zoned for different types of use, as well as smaller no-take models, where extraction of any kind is prohibited. The paper reviews the social assessment methods used in each of these planning processes and investigates whether these were sufficient tools for measuring and predicting the likely social impacts of these proposals. Finally, some emerging issues relating to a public perception of the failure of management agencies to adequately assess and address the social and economic impacts of MPAs are identified.

2. Social assessment in MPA planning – three Australian case studies

2.2 The Great Barrier Reef Marine Park Representative Areas Program

In Australia most statutes require the consideration of social and economic impacts prior to the declaration of an MPA and during the preparation of management plans [16, 45-47]. When the Great Barrier Reef Marine Park Authority (GBRMPA) reviewed the Great Barrier Reef Marine Park (GBRMP) zoning plan (1999-2004), social and economic impacts were a key consideration in the review process. The Representative Areas Program (RAP) was overseen by a Social, Economic and Cultural Steering Committee who developed a range of principles to ensure these potential impacts were considered [48-50].

An extensive public participation process was conducted as part of the RAP. It involved two formal public involvement phases, over 600 meetings in more than 90 locations, and over 31 000 submissions. The GBRMPA employed individuals with backgrounds in relevant industries, such as commercial and recreational fishing and tourism, to access existing networks of stakeholders and build trust within the community [51]. Ten Local Marine Advisory Committees (LMACs), located along the Queensland coast, made up of representatives of major stakeholder groups from the local area, also played a key role in the planning process [48].

Three independent socio-economic impact analyses of the RAP were undertaken in 2003 and delivered to federal Parliament with the final draft of the zoning plan. They included an overall social and economic assessment of the RAP, as well as more detailed assessments of the impacts on the tourism and commercial fishing sectors. Overall the reports used economic impact assessment methods to conclude that the plan would deliver net economic benefits with the value of tourism and the environmental benefits outweighing the losses associated with forgone commercial fisheries resources [52, 53]. In relation to recreational fishing, the assessments found that the draft plan would close only 1.3 to 5% of regularly frequented fishing locations and that the plan's impact on recreational fishers would be low [52-54]. The report on the commercial fishing sector is unique in its specific focus on social (rather than economic) impacts of the RAP on commercial fishing families and communities [55]. It identified 13 coastal towns with a high dependency on the GBRMP that were likely to be more vulnerable to change and used a variety of factors to measure the resilience of fishing families and communities to this change. It was able to determine the communities and groups most vulnerable to impacts from the proposed zoning plan but stated that additional targeted, regional level surveys would be required to quantify these impacts [54, 55].

2.3 NSW Marine Parks

The state of New South Wales (NSW) manages waters within three nautical miles of the coast. State government policy is to develop a comprehensive, adequate and representative system of MPAs across all its six marine bioregions [56]. This has resulted in the establishment of a system of large multiple use marine parks, supplemented by a number of smaller aquatic reserves and marine national parks. At present all but two of the six bioregions have at least one large marine park contributing to this system, with six marine parks established to date: Byron Bay; Lord Howe Island; Solitary Islands; Port Stephens-Great Lakes; Jervis Bay; and Batemans. All have current zoning plans, with Solitary Islands and Jervis Bay Marine Parks reviewed in 2010 [57, 58]. NSW Marine Parks are declared under the *Marine Parks Act 1997* and a range of guidelines exist to guide the MPA declaration and planning process. It includes key principles

relating to the consideration of the social and economic impacts and the equitable distribution of costs and benefits of any MPA proposal [5, 59, 60].

Port Stephens-Great Lakes Marine Park (PSGLMP) and Batemans Marine Park (BMP) were the most recent additions to the NSW system of MPAs. They were declared in 2005 and 2006 respectively and zoning plans for both parks came into effect in 2007. Both the PSGLMP and the BMP underwent two formal public consultation periods. These two consultation periods across both parks generated a combined total of over 13 500 submissions and involved more than 230 stakeholder meetings [61, 62].

The selection and zoning planning processes also included the development of socio-economic impact reports for each park [63, 64] and separate, independent economic impact assessments of commercial activities, including commercial fishing co-operatives [65-67]. Commercial fisheries impacts were detailed in terms of forgone fishing effort and loss of income and employment opportunities. The reports concluded that these economic impacts would be largely offset at the community level by the revenue and employment generated by the marine park, and at the level of individual fishers by the buy-back of commercial fishing licenses. For non-commercial activities, such as recreational fishing, impacts were considered to be short term and offset by the benefits of marine park creation (such as improvements in fishing quality with an increase in fish stocks). The assessments were undertaken prior to the finalisation of zoning plans so it was not possible to quantify the impact of the Parks. Surveys conducted in the Solitary Islands Marine Park, however, were cited as demonstrating overall long term satisfaction and support for the marine park within the local community [64].

2.4 Victoria

Distinct from most other Australian states, the Victorian government favours a smaller, no-take MPA model. The process for implementing the current system of MPAs began in 1991 when the State's independent public land use advisory body was instructed by the government of the time to conduct a marine and coastal investigation of the entire Victorian coast. The process of selection through to declaration took 11 years in total and this was due, in part, to considerable opposition to the concept of MPAs from specific sectors within the community [68]. The declaration of the reserves attracted considerable resistance, the most dramatic example of which was the march of approximately 1500 fishers (commercial and recreational), fishing families and sympathisers on Victoria's Parliament House in May 2001 [36]. In the lead up to the release of the final recommendations for the establishment of MPAs the advisory body conducted six formal public submission periods and received more than 4500 submissions [68]. It held a series of public meetings and briefings in fifteen locations along the Victorian coast [69]. The process was also guided by an additional advisory group made up of a range of people with expertise in relevant areas such as recreational and commercial fishing.

Social impacts were also considered in a report prepared by an independent economic consultant. This found that the impacts related to the restrictions on recreational fishing would likely be small and isolated due to the availability of alternative fishing areas, the mobility of fishers through boats and cars, and the fact that popular fishing locations had been excluded from the MPAs. In addition it was noted that most towns did not rely heavily on spending associated with recreational fishing [70]. The report also predicted that restrictions on commercial fishing from the proposed MPAs would result in very minor levels of employment loss in some

coastal communities if that catch could not be sourced from other areas. It concluded it was unlikely that this would have long term adverse impacts on the coastal communities near the MPAs due to the fact they did not have a strong reliance on commercial fishing as an income source. It was recognised, however, that individual commercial fishers may be adversely affected by the proposals and as such structural adjustment was recommended [69, 70].

3. Attitudinal studies and MPAs

As demonstrated in Section 2 considerable efforts have been made in Australian planning processes to engage stakeholders. Following finalisation of the MPAs and completion of zoning plans it is difficult to accurately determine how the MPA has affected local communities, and whether these attempts to incorporate social and economic considerations into the planning processes have been successful in minimising socio-economic costs while maximising environmental benefits. The primary goal of the NRSMPA is to 'contribute to the long-term ecological viability of marine and estuarine systems, to maintain ecological processes and systems, and to protect Australia's biological diversity at all levels'[5]. MPA monitoring programs therefore necessarily focus on biological parameters such as fish stocks and habitat health to measure their success. Social or human factors are considered secondary, and monitoring tools commonly involve attitudinal studies and community surveys to demonstrate a wider community acceptance of the MPA [17]. These studies are generally not designed to assess social impacts but rather to gauge opinions and levels of support and acceptance within the local community, region or occasionally within targeted stakeholder groups. They generally take the form of quantitative phone surveys or questionnaires (mail or face to face) and are valuable in that they involve random sampling of the general population and therefore allow insight into the views of the wider community including those that are unlikely to become engaged in public participation exercises [37, 71-74]. They are also valuable in providing an insight into some of the demographic, cultural and social factors that influence community acceptance of MPAs.

Attitudinal surveys have been regularly conducted, both in and outside of Queensland, in relation to support, acceptance and general attitudes towards the GBRMP. One such study, conducted in 2007, found a very high level of community awareness (up to 97%) of the GBRMP, and up to 77% acceptance of 'Green' (or no-take) zones [74]. A more targeted survey program towards recreational fishers was also undertaken in 2006-07 after the finalisation of the new zoning plan. It found that most (68%) agreed that the rezoning process was a good idea and 57% supported (compared with 31% opposed) the new zoning plan. Importantly, the study found that support for the rezoning was most strongly influenced by a belief in its necessity and its conservation benefits. This implies that the majority of fishers were willing to forgo some access for the 'greater good' - being the conservation benefits the zoning plan would provide. Conversely, opposition to the zoning plan was higher amongst people who believed that the plan had led to negative impacts on their fishing activity [73].

Surveys conducted in two NSW marine parks (Solitary Islands and Jervis Bay) also found broad community support for their local MPA. The overwhelming majority of respondents (87%) favoured conserving the Solitary Islands Marine Park [72]. 84% of respondents favoured conserving the Jervis Bay Marine Park [71]. These results are supported by other research in the parks. Visitor surveys conducted in the Solitary Island Marine Park between 2002 and 2005 found average overall satisfaction with the park of between 5.3 and 6.5 out of a possible seven [75]. A survey conducted in 1995 in Jervis Bay prior to the declaration and zoning of

the then proposed aquatic reserve estimated opposition to the reserve somewhere between 12% and 20% of the local community [76]. No similar studies were found to indicate community attitudes towards MPAs in Victoria.

The results of these Australian attitudinal surveys and similar studies around the world demonstrate remarkably similar levels of wider community acceptance for MPAs, ranging between 75-90% support [20, 37, 77]. Lack of integration across biological and social monitoring programs makes it difficult to trace any shifts in people's social and economic conditions and attitudes in response to ecological changes brought about by the MPA however many studies point to a growth in community and stakeholder support for MPAs over time [20, 25, 37]. Based on these figures it can be inferred that opponents of MPAs (or those undecided) represent the minority (less than 25%) of the community. The surveys of recreational fishers in the GBRMP points to a link between social impacts and MPA opposition [73]. Yet despite the fact that community surveys and attitudinal studies are not designed to assess or measure social impacts, proponents of MPAs often rely on them to dismiss the concerns of the opponents by labelling them a minority opinion [2, 68]. This is an understandable reaction given the process for establishing a new MPA in Australia is an intensive and laborious process which allows considerable opportunities for public input, demonstrated in Section 2. A minority opinion becomes significant, however, when this minority is made up of key stakeholders who play a crucial role in determining the success and or failure of an MPA. Section 4 of this paper reveals that there is some Australian evidence that dismissal of community opposition may, in the long term, be detrimental to future relationships with local communities, the success of existing parks, and future attempts to introduce new MPAs.

4. *The politics of social assessment*

Conservation groups in Australia argue for MPAs to cover anywhere up to 50% of state or federal marine jurisdiction, with these MPAs incorporating a significant (up to 33%) no-take component [e.g. 78, 79, 80]. In recent times these groups have become locked in an increasingly polarised debate with fishers who also consider themselves 'conservationists' but strongly resist MPAs, and particularly the 'no-take' model of marine conservation [e.g. 81, 82-85]. This debate contains evidence of fundamental differences in the values, motivations and aspirations of each of the main protagonists, along the lines of the preservationist vs sustainable use ethic described by Jones [13, 86]. The use of MPAs as key election policies for both the Australian Liberal Party (who promised to stop them) and the Greens (who promised to increase them) in the 2010 Australian federal election highlighted the fact that politicians have become aware that this issue is gaining political capital [see 79, 87, 88]. In NSW, where the current MPA network remains incomplete, opposition to marine parks gained significant momentum and political mileage in the lead up to the 2011 state election. A parliamentary inquiry into recreational fishing in 2010 recommended delaying future MPA declarations in NSW for at least 5 years while further research is undertaken, as well as allowing some forms of fishing within established Sanctuary (no-take) zones [89]. A variety of petitions, with an estimated combined total of more than 20 000 signatures, was forwarded to parliament opposing the creation of any more marine parks [84, 90]. Numerous web pages, sites, blogs and forums critical of NSW marine parks, or at least of their no-take components, have also emerged over recent years [81, 84, 91]. The state election in 2011 resulted in a change of government which almost immediately implemented significant changes to marine park management in NSW, including transferring responsibility for their management from the

Environment portfolio to the Primary Industries (incorporating Fisheries) portfolio. The Government also announced the reversal of a number of decisions made by the previous Government to increase MPA protection levels in the state, including changes made to the zoning plans of the Solitary Island and Jervis Bay Marine Parks as part of their review process in 2010/11 and the removal of two fishing closures made for the protection of the endangered Grey Nurse Shark. The reasons cited for this unprecedented reversal of existing MPA protection measures include the need for further public consultation and improved scientific research [92, 93]. A similar situation exists in Victoria, where MPAs currently comprise 5.3% of the state's marine environment. Lobbying from fishing groups prior to the 2011 state election secured bipartisan support for a moratorium on any future marine parks until at least 2014 [94].

Section 2 demonstrates that efforts made by management agencies to engage and consult the general population and stakeholder groups appear to be exhaustive and extensive. Section 3 shows that a body of evidence points to widespread community support for MPAs. Despite this opposition to MPAs remains a powerful and at times dominant force, regardless of the minority status of the opponents [20, 38, 39, 77].

5. Discussion

Table 1 (a summary of the discussion above) shows that social assessment in Australian MPA planning takes two key forms, socio-economic impact reporting and public participation or consultation exercises. These are commonly followed by the development of attitudinal surveys in order to gauge public opinion on the MPA following its establishment. These may then be used to counter the arguments of any remaining opponents within the community and to support future MPA declarations [2, 63, 64, 68].

Table 1. Overview of social assessment in Australian case studies

| Marine Protected Area | Management Agency/ Jurisdiction | MPA size | Social Impact Assessment | Economic Impact Assessment | Public participation opportunities | Review/ Audit |
|---|--|---|--|--|---|---|
| Great Barrier Reef Marine Park Representative Areas Program (RAP) | Great Barrier Reef Marine Park Authority (GBRMPA) – Federal jurisdiction | 344,400 km ² [51] | 1 report designed to measure the resilience of commercial fishing families and communities to changes as a result of the RAP | 2 independent economic impact reports, also Regulatory Impact Statement. Completed after draft zone plan was released. | 10 Local Marine Advisory Committees (representative), 2 public comment periods, range of public and stakeholder meetings | Community surveys and specific stakeholder attitudinal studies, Review of Act in 2008 incorporated review of RAP process. |
| Batemans Marine Park & Port Stephens-Great Lakes Marine Park | NSW Marine Parks Authority – State jurisdiction | BMP 850 km ² [64] PSGLMP 972 km ² [62] | No, some social considerations included in economic reports | 2 socio-economic reports for each park focused primarily on economic impacts, particularly commercial fishing. These were completed prior to a draft zone plan being released. | Marine Park Advisory Committee for each park (representative), 2 public comment periods, range of public and stakeholder meetings | None on specific parks, but community surveys conducted on other NSW parks. Parliamentary inquiry in 2010 included consideration of all NSW Marine Parks. |
| Victorian Marine Parks and Marine Sanctuaries | Identification & selection conducted by independent | 525.73 km ² in total for all MPAs | No, some social considerations included in | 1 independent socio-economic report focused primarily on | Independent advisory body conducted selection and | None found |

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|---------------------|---|------|-------------------|---|---|--|
| implemented in 2002 | land use advisory body. Management of the MPAs is the responsibility of Parks Victoria – State jurisdiction | [95] | economic reports. | economics, completed after the final recommendations on proposed MPAs was released. | identification, expert based advisory group provided input into process. 6 public comment periods, range of public and stakeholder meetings | |
|---------------------|---|------|-------------------|---|---|--|

5.1 Socio-economic reporting

Social and Economic Impact Assessment (usually termed socio-economic reports) is a common method of incorporating social and economic considerations into management planning. Socio-economic reporting in this context however differs from formal Social Impact Assessment (SIA) in that it considers social impacts only in so far as they relate to shifts in local economic conditions, such as through loss of employment or income. None of the reports examined employed the strategic approach recommended through SIA guidelines and principles [30, 40, 42, 43]. GBRMPA stands out as the only management agency which made a concerted effort to measure the potential social impacts of its plan, concentrating on a group they identified as being particularly vulnerable to the proposed changes - commercial fishers and their families. All the other reports were prepared by economists and focused primarily, or in some cases exclusively, on economics. The value of the socio-economic reporting used in NSW was further undermined by the reports being produced prior to the development of draft zone plans making any identified impacts largely theoretical. The socio-economic reports in all three of the case studies were prepared by external consultants separate from the planning processes and their associated participation programs [17, 53, 65, 70, 96].

Socio-economic reporting, which assumes that economic factors are the primary determinant of likely social impacts, fails to appreciate the importance of culture, history, tradition and ‘sense of place’ in the lives of marine users. Much of the worth individuals place on the marine environment has little or no economic basis and attempts by economists to assign economic value to the environment and other non-market commodities (such as through ‘willingness to pay’ models) are poor substitutes for the reality of loss of amenity and/or way of life [29, 97, 98]. While economic growth or shifts in the nature of economic benefits may be seen as a positive at the community, regional or national level, individual groups within the community may see them as having a negative impact upon family traditions, cultural heritage or social values [29]. In the Florida Key Marine Park, for example, a study showed that the management regime had low economic impacts but high social impacts through crowding and conflict amongst user groups [99] *cited in* [17].

5.2 Public participation

In all three case studies public participation played a key role in the management planning process. It is clear from the time, effort and resources that were applied to this form of social assessment that it was considered the key mechanism for incorporating social and economic considerations into each of these planning processes. Large numbers of submissions were received in all three case studies indicating a high level of community interest and engagement. The current situation in MPA planning in Australia therefore appears to be characterised by an inverse relationship between the efforts of management agencies to engage and

consult the general public and the growth in momentum of opposition movements and their political influence. This requires careful examination in order to determine whether these exercises are fulfilling their aim of adequately incorporating social and economic considerations into MPA planning.

Public participation in this context is being used as an end rather than a means – that is public participation has become a surrogate for SIA rather than a tool used to support SIA. The aim of public participation is to attempt to minimise the social impacts of a proposed MPA but this is being done without any rigorous or scientifically robust attempt to accurately determine what those impacts might be or who might be most likely to feel them. Separation of the public participation phases of the planning process from the development of socio-economic reports by external consultants also means that important data relating to social variables is largely lost to the impact assessment process. Public participation is an ideal means of informing and guiding social impact assessment and separating these two processes reduces the efficiency and efficacy of both. Public participation, used on its own, relies on those sections of the community who are most likely to be impacted by a proposal to act as their own advocates. Management agencies rely on stakeholders to be able to communicate (usually in writing) the social and economic impacts of the MPA and how they can be minimised. Delegating this responsibility to stakeholders involves an implicit assumption that stakeholders will be able to understand and navigate a bureaucratic, political or regulatory system that can appear confusing, intimidating and inflexible. This automatically confers power at the negotiating table to politically savvy, articulate and often well educated sections of the community and can marginalise sectors of the community who have lower levels of literacy or confidence in speaking in public forums, or simply a limited level of understanding of the intricacies of the political or bureaucratic system they are attempting to influence [29].

The focus of public submissions are often framed in terms of support or opposition for a specific proposal or aspects of the proposal [100]. This can mean that the complexities of the real social issues at stake can be drowned out by the sheer weight of numbers harnessed by larger, politically savvy, lobby groups in what is essentially a political process. This is particularly true for more marginal groups such as Indigenous and commercial fishing communities.

5.3 Attitudinal studies and social surveys

Social surveys and attitudinal studies are effective tools for gauging community attitudes and overall public sentiment about MPAs. They are valuable in providing insights into the views of the often silent majority but many of the respondents to these surveys have nothing to lose through their support if they are not active users of the proposed MPA [76]. In addition, these surveys are not designed to measure social impacts, therefore while they may indicate widespread community support for an MPA, they do little to indicate whether the MPA has had adverse affects on individuals, families or groups, particularly within those more vulnerable sections of the community. For this reason community surveys should not be used to dismiss or minimise the genuine concerns held by minority groups who are direct users of the MPA and who remain concerned about the impacts of MPAs on their lives or livelihoods. In addition, the preference for quantitative surveys or questionnaires when conducting attitudinal studies means that our understanding of community attitudes to MPAs is reasonably limited. We know that the majority of the community supports MPAs but very little research is available that explores the views of those people that hold opposing or undecided views.

5,4 The way forward

Equitable consideration of all points of view, including minority groups, is essential in ensuring a socially fair and just approach to MPA declaration and management because the potential impacts of MPAs are not distributed equally across society and tend to concentrate amongst extractive users [17, 76]. While it is tempting to dismiss the views of opponents as a minority opinion, the case studies examined in this report highlights that they are having immediate and detrimental impact on Australia's ability to further progress the NRSMPA. It is inevitable that some sections of the community will always remain ideologically opposed to restrictions on their fishing access, and therefore conflict is likely to remain a feature of MPA planning processes. However social assessment, if conducted in an effective and transparent way, should be able to identify where genuine impacts will be felt and identify means of mitigating or compensating these impacts.

This review found that at present social assessment is currently being undertaken in an ad hoc and largely unsystematic manner. While all the tools currently used in Australia are important and useful inclusions in the social assessment toolkit, a more strategic approach to social assessment is required. Formal SIA is one option which requires further consideration. The preference for a comparative approach to SIA means that further work is urgently required on assessing the social impacts of existing MPAs in order to allow for more accurate understanding of potential future impacts of MPAs. In the absence of this data this review has highlighted a number of ways in which MPA planning processes can be improved immediately to allow for a more strategic and cross disciplinary approach to considering social impacts:

- Specific and targeted consideration of social impacts is needed (incorporating qualitative research techniques) separate from (but informed by) consideration of economic impacts.
- Integration of public participation exercises with social and economic impact assessment would add value to each of these processes with each informing the other.
- Incorporation of social science expertise into planning processes would ensure social data is gathered and analysed in a meaningful and scientifically robust manner.

In addition this review highlights that a major rethink is required into the role of public participation in MPA planning processes, with emphasis shifting from it being the primary means of social assessment to an important support tool in SIA. SIA processes which look beyond simple 'support vs opposition' approach of public participation will allow for deeper understanding of the importance of access and use of the marine environment to all user groups and allow for more meaningful discussions around potential trade-offs to achieve optimum environmental protection.

5. Conclusion

Public participation and economic impact assessment are well developed and well utilised tools in MPA planning in the Australian context. Social Impact Assessment (SIA) however, seems to be very much in its infancy and relies heavily on the use of public participation as a surrogate for formal SIA exercises. Without effective studies on the social impacts of current MPAs it is very difficult to predict impacts any future MPAs may have. This is concerning given the increasing numbers of MPAs being proposed and implemented around the world. A lack of understanding of why people oppose MPAs, who MPAs are having an impact

upon, and the severity and extent of these impacts allows for fear and misinformation to dominate planning processes. Moreover it can alienate those groups on whom the success of MPAs is most dependent.

References

- [1] Spalding M, Wood L, Fitzgerald C, Gjerde K. The 10% Target: Where do we stand? In: Toropova C, Meliane I, Laffoley D, Matthews E, Spalding M, editors. *Global Ocean Protection: Present Status and Future Possibilities*. : Brest, France: Agence des aires marines protegees, Gland, Switzerland, Washington, DC and New York, USA: IUCN WCPA Cambridge UK: UNEP-WC-MC, Arlington USA:TNC, Tokyo, Japan: UNU, New York USA: WCS; 2010. p. 96.
- [2] Banks SA, Skilleter GA. Implementing marine reserve networks: A comparison of approaches in New South Wales (Australia) and New Zealand. *Marine Policy*. 2010;34:197-207.
- [3] Kelleher G, Kenchington R. *Guidelines for establishing marine protected areas*: IUCN; 1992.
- [4] Wood L, Fish L, Laughren J, Pauly D. Assessing progress towards global marine protection targets: shortfalls in information and action. *Oryx*. 2008;42(3) 340-51.
- [5] ANZECC. *Guidelines for Establishing the National Representative System of Marine Protected Areas*. In: Australian and New Zealand Environment and Conservation Council TFMPA, editor.: Environment Australia, Canberra; 1998.
- [6] Commonwealth of Australia. *National Representative System of Marine Protected Areas*. Department of Sustainability, Environment, Water, Population and Communities; 2011.
- [7] Gray DL, Canessa R, Rollins R, Keller CP, Dearden P. Incorporating Recreational Users into Marine Protected Area Planning: A Study of Recreational Boating in British Columbia, Canada. *Environmental Management*. 2010;46:167-80.
- [8] West P, Brockington D. An Anthropological Perspective on Some Unexpected Consequences of Protected Areas. *Conservation Biology*. 2006;20:609-16.
- [9] Blaustien RJ. Protected areas and equity concerns. *BioScience*. 2007;57:216–21.
- [10] Wilkie DS, Morelli GA, Demmer J, Starkey M, Telfer P, Steil M. Parks and People: Assessing the Human Welfare Effects of Establishing Protected Areas for Biodiversity Conservation. *Conservation Biology*. 2006;20:247-9.
- [11] Miller TR, Minter BA, Malan L-C. The new conservation debate: The view from practical ethics. *Biological Conservation*. 2010;In Press, Corrected Proof.
- [12] Robinson JG. Ethical pluralism, pragmatism, and sustainability in conservation practice. *Biological Conservation*. 2010;In Press, Corrected Proof.
- [13] Jones PJS. Marine protected area strategies: issues, divergences and the search for middle ground. *Reviews in Fish Biology and Fisheries*. 2001;11:197-216.

- [14] Gray NJ. Sea Change: Exploring the International Effort to Promote Marine Protected Areas. *Conservation and Society*. 2010;8:331-8.
- [15] McShane TO, Hirsch PD, Trung TC, Songorwa AN, Kinzig A, Monteferri B, et al. Hard choices: Making trade-offs between biodiversity conservation and human well-being. *Biological Conservation*. 2010;In Press, Corrected Proof.
- [16] Lane M, Dale A, Taylor N. Social assessment in natural resource management: Promise, potentiality, and practice. In: Dale A, Taylor N, Lane M, editors. *Social assessment in natural resource management institutions*. Collingwood, Vic: CSIRO Publishing; 2001. p. 3.
- [17] Blount BG, Pitchon A. An Anthropological Research Protocol for Marine Protected Areas: Creating a Niche in a Multidisciplinary Cultural Hierarchy. *Human Organization*. 2007;66:103-11.
- [18] Ingram CB. Parks, People and Planning: Local perceptions of park management on the Ningaloo Coast, North West Cape, Western Australia [Unpublished]: Curtin University of Technology; 2008.
- [19] Northcote J, Macbeth J. Socio-economic impacts of sanctuary zone changes in Ningaloo Marine Park: A preliminary investigation of effects on visitation patterns and human usage. In: Tourism CRCfS, editor. *Gold Coast, Queensland 2008*.
- [20] Cocklin C, Craw M, Mcauley I. Marine reserves in New Zealand: Use rights, public attitudes, and social impacts. *Coastal Management*. 1998;26:213 - 31.
- [21] Fiske SJ. Sociocultural aspects of establishing marine protected areas. *Ocean & Coastal Management*. 1992;17:25-46.
- [22] Mascia MB. The Human Dimension of Coral Reef Marine Protected Areas: Recent Social Science Research and its Policy Implications. *Conservation Biology*. 2003;17:630-2.
- [23] National Oceanic & Atmospheric Administration. National Fisheries Guidance for Social Impact Assessment. In: US Department of Commerce, editor. 2001.
- [24] IUCN. Policy on Social Equity and Sustainable Use of Natural Resources. 2000.
- [25] Taylor N, Buckenham B. Social impacts of marine reserves in New Zealand. . *Science for Conservation: Department of Conservation NZ*, <http://www.doc.govt.nz/upload/documents/science-and-technical/SFC217.pdf>; 2003. p. 58.
- [26] Symes D, Hoefnagel E. Fisheries policy, research and the social sciences in Europe: Challenges for the 21st century. *Marine Policy*. 2010;34:268-75.
- [27] Kelleher G, Recchia C. Lessons from marine protected areas around the world. *Parks*. 1998;8:1-4.
- [28] Suuronen P, Jounela P, Tschernij V. Fishermen responses on marine protected areas in the Baltic cod fishery. *Marine Policy*. 2010;34:237-43.

- [29] Rickson RE, Western JS, Burdge RJ. Social Impact Assessment: Knowledge and Development. *Environmental Impact Assessment Review*. 1990;10:1-10.
- [30] Vanclay F. *Social Impact Assessment: International Principles*. IAIA Special Publications: International Association for Impact Assessment; 2003.
- [31] Bess R, Rallapudi R. Spatial conflicts in New Zealand fisheries: The rights of fishers and protection of the marine environment. *Marine Policy*. 2007;31:719-29.
- [32] Kareiva P. Conservation Biology: Beyond Marine Protected Areas. *Current Biology*. 2006;16:R533-R5.
- [33] Momtaz S, Gladstone W. Ban on commercial fishing in the estuarine waters of New South Wales, Australia: Community consultation and social impacts. *Environmental Impact Assessment Review*. 2008;28:214-25.
- [34] Jones PJS. Equity, justice and power issues raised by no-take marine protected area proposals. *Marine Policy*. 2009;33:759-65.
- [35] Solling jnr M. A region in transition : the dispute over 'making the most' of the Manning River fishery [Unpublished]. Sydney: University of Technology Sydney; 2005.
- [36] Minnegal M, King TJ, Just R, Dwyer PD. Deep Identity, Shallow Time: Sustaining a Future in Victorian Fishing Communities. *The Australian Journal of Anthropology*. 2003;14:53-71.
- [37] Wolfenden J, Cram F, Kirkwood B. Marine Reserves in New Zealand: A Survey of Community Reactions. *Ocean & Coastal Management*. 1994;25:31-51.
- [38] Agardy T, Bridgewater P, Crosby MP, Day J, Dayton PK, Kenchington R, et al. Dangerous targets? Unresolved issues and ideological clashes around marine protected areas. *Aquatic Conservation: Marine and Freshwater Ecosystems*. 2003;13:353-67.
- [39] Weible C. Caught in a Maelstrom: Implementing California marine protected areas. *Coastal Management*. 2008;36:350-73.
- [40] Burdge RJ, Vanclay F. Social Impact Assessment. In: Vanclay F, Bronstein DA, editors. *Environmental and Social Impact Assessment*. West Sussex: John Wiley & Sons Ltd; 1995. p. 31-66.
- [41] Burdge RJ. The international institutionalisation of social impact assessment. In: Dale A, Taylor N, Lane M, editors. *Social assessment in natural resource management institutions*. Collingwood, Vic: CSIRO Publishing; 2001. p. 3.
- [42] ICoGP. Guidelines and Principles for Social Impact Assessment Impact Assessment and Project Appraisal. 2003;21:231–50.

- [43] Bureau of Rural Sciences. Socio-economic Impact Assessment Toolkit: A guide to assessing the socio-economic impacts of Marine Protected Areas in Australia. In: Sciences BoR, editor.: Department of Agriculture, Fisheries and Forestry; 2005.
- [44] Bishop P, Davis G. Mapping Public Participation in Policy Choices. Australian Journal of Public Administration. 2002;61:14-29.
- [45] Environmental Protection and Biodiversity Conservation Act. EPBC. Australia:
http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/; 1999.
- [46] Marine Parks Act. MPA. Australia:
<http://www.legislation.nsw.gov.au/maintop/view/inforce/act+64+1997+cd+0+N>; 1997.
- [47] Great Barrier Reef Marine Park Act. GBRMPA. Australia:
http://www.austlii.edu.au/au/legis/cth/consol_act/gbrmpa1975257/; 1975.
- [48] Thomson L, Jago B, Fernandes L, Day J. Barriers to communication - how these critical aspects were addressed during the public participation for the rezoning of the Great Barrier Reef Marine Park. In: Great Barrier Reef Marine Park Authority, editor.2005.
- [49] Fernandes L, Day J, Kerrigan B, Breen D, De'ath G, Mapstone B, et al. A process to design a network of marine no-take areas: Lessons from the Great Barrier Reef. Ocean & Coastal Management. 2009;52:439-47.
- [50] Great Barrier Reef Marine Park Authority. Technical Information Sheet #7: Social, economic, cultural and management feasibility operational principles. Representative Area Program background and history. Townsville2002.
- [51] Osmond M, Airame S, Caldwell M, Day J. "Lessons for marine conservation planning: A comparison of three marine protected area planning processes". Ocean & Coastal Management. 2010;53:41-51.
- [52] Commonwealth of Australia. Review of the *Great Barrier Reef Marine Park Act 1975*. In: Report RP, editor. Canberra: Department of Environment & Heritage; 2006.
- [53] Hand T. An economic and social evaluation of implementing the Representative Areas Program by Rezoning the Great Barrier Reef Marine Park. PDP Australia Pty Ltd 2003.
- [54] Great Barrier Reef Marine Park Authority. Summary report of the social and economic impacts of the rezoning of the Great Barrier Reef Marine Park.
http://www.gbrmp.gov.au/_data/assets/pdf_file/0019/8254/JUG_SR_09-12-03pdf2003.
- [55] Bureau of Rural Sciences. Implementing the Representative Areas Program in the Great Barrier Reef Marine Park: Assessment of potential social impacts on commercial fishing and associated communities. In: Department of Agriculture Fisheries & Forestry, editor. Canberra, ACT: Australian Government; 2003.

- [56] Marine Parks Authority. Developing a Representative System of Marine Protected Areas in NSW - an Overview. In: NSW Marine Parks Authority, editor.: Heartland Publishing, Canberra; 2001.
- [57] Marine Parks Authority. Solitary Islands Marine Park: zoning plan review report. Coffs Harbour: NSW Marine Parks Authority; 2009.
- [58] Marine Parks Authority. Jervis Bay Marine Park: zoning plan review report. Huskisson: NSW Marine Parks Authority; 2009.
- [59] ANZECC. Strategic Plan of Action for the National Representative System of Marine Protected Areas: A Guide for Action by Australian Governments. In: Australian and New Zealand Environment and Conservation Council TFMPA, editor.: Environment Australia, Canberra.; 1999.
- [60] MPA NSW. Developing a Representative System of Marine Protected Areas in NSW - an Overview. In: NSW MPA, editor.: Heartland Publishing, Canberra; 2001.
- [61] Marine Parks Authority. Summary of Submissions on the Batemans Marine Park Draft Zoning Plan. In: NSW Marine Parks Authority, editor. Narooma, NSW2006.
- [62] Marine Parks Authority. Summary of Submissions on the Port Stephens-Great Lakes Marine Park Draft Zoning Plan. In: NSW Marine Parks Authority, editor. Nelson Bay, NSW2006.
- [63] Marine Parks Authority. Socio-Economic Assessment of the Port Stephens – Great Lakes Marine Park. NSW Marine Parks Authority; 2006.
- [64] Marine Parks Authority. Socio-Economic Assessment of the Batemans Marine Park. In: NSW Marine Parks Authority, editor.2006.
- [65] Powell R, Chalmers L. The estimated economic impact of the proposed Port Stephens - Great Lakes Marine Park on Commercial Activities. Centre for Agricultural and Regional Economics Pty Ltd; 2005.
- [66] Powell R, Chalmers L. The Estimated Economic Impact of Batemans Marine Park on Commercial Activities. Centre for Agricultural and Regional Economics Pty Ltd; 2006.
- [67] Read A. 2010.
- [68] Wescott G. The long and winding road: The development of a comprehensive, adequate and representative system of highly protected marine protected areas in Victoria, Australia. Ocean & Coastal Management. 2006;49:905-22.
- [69] Environment Conservation Council. Marine, Coastal and Estuarine Investigation, Final Report. Environment Conservation Council; 2000.
- [70] Essential Economics Pty Ltd. Potential Social and Economic Effects of Recommendations for Victoria's Marine, Coastal and Estuarine Areas, a Review of the Recommendations in the Environment Conservation

Council's Marine, Coastal and Estuarine Investigation Final Report. In: Council EC, editor. Marine, Coastal and Estuarine Investigation Final Report (2000)2000.

[71] McGregor Tan Research. Jervis Bay Marine Park Community Survey. Final Report. 2008.

[72] McGregor Tan Research. Solitary Islands Marine Park Community Survey Final Report. Frewville, SA2008.

[73] Sutton SG, Tobin RC. Recreational fishers' attitudes towards the 2004 rezoning of the Great Barrier Reef Marine Park. *Environmental Conservation*. 2009;36:245-52.

[74] Young J, Temperton J. Measuring community attitudes and awareness towards the Great Barrier Reef 2007. Research publication (Great Barrier Reef Marine Park Authority: Online); no 90. Townsville, Qld: Great Barrier Reef Marine Park Authority; 2008.

[75] Ryan C. Visitors to Solitary Island Marine Park their behaviours, attitudes and perceptions. An analysis of surveys: 2002 to 2005. 2005.

[76] Sant M. Environmental sustainability and the public: responses to a proposed marine reserve at Jervis Bay, New South Wales, Australia. *Ocean & Coastal Management*. 1996;32:1-16.

[77] Thomassin A, White CS, Stead SS, David G. Social acceptability of a marine protected area: The case of Reunion Island. *Ocean & Coastal Management*. 2010;In Press, Corrected Proof.

[78] Winn P. The Torn Blue Fringe: Marine Conservation in NSW. Newtown, NSW2008.

[79] Greens T. Marine and Coastal Areas. Australian Greens Policy2008.

[80] Edmunds M, Mustoe S, Stewart K, Sheedy E, Ong J. VNPA Nature Conservation Review: Marine Conservation Priorities and Issues for Victoria. Report to Victorian National Parks Association. Australian Marine Ecology Report 405. Melbourne2009

[81] Ecofishers. <http://www.ecofishers.com/>.

[82] Kearney B. Response to ACORF on The Torn Blue Fringe: Marine Conservation in NSW (Winn 2008). 2009.

[83] Kearney B. The Pros and Cons of Marine Protected Areas in New South Wales: Who's being Hoodwinked? : University of Canberra; 2007.

[84] Gay D. <http://www.stopmarinelockout.com.au/>. 2009.

[85] Kearney R. The great Batemans MPA swindle: not science, a sham! *Ausmarine: Baird Maritime*; 2007. p. 16-7.

[86] Jones P. Point-of-View: Arguments for conventional fisheries management and against no-take marine protected areas: only half of the story? *Reviews in Fish Biology and Fisheries*. 2007;17:31-43.

- [87] Taylor L. No one wins in this game of fish Sydney Morning Herald: smh.com.au; 2010.
- [88] Liberal Party of Australia. Marine Protected Areas Policy. 2010.
- [89] Parliament of NSW. Legislative Council. Select Committee on Recreational Fishing. Recreational Fishing in New South Wales. Sydney NSW2010. p. 446.
- [90] Parliament of NSW. Marine Parks Amendment (Moratorium) Bill 2010. 2010.
- [91] The outdoor loving people of Australia. Save fishing in the Solitary Islands. 2010.
- [92] Hodgkinson MP K. Media release:Grey Nurse Shark Public consultation commences. Minister for Primary Industries, Minister for Small Business,. Sydney: Parliament of NSW; 2011.
- [93] Hodgkinson MP K, Barker MP R. Media release:NSW Government takes the politics out of marine parks. Minister for Primary Industries, Minister for Small Business,and the Minister for the Environment, Minister for Heritage. Sydney: Parliament of NSW; 2011.
- [94] Morton A. Fishermen win moratorium on marine parks. The Age. Melbourne: Fairfax; 2010.
- [95] Commissioner Environmental Sustainability Victoria. State of the Environment Victoria 2008. Melbourne, Victoria: Commissioner Environmental Sustainability Victoria; 2008.
- [96] NSW MPA. Socio-Economic Assessment of the Port Stephens – Great Lakes Marine Park. NSW Marine Parks Authority; 2006.
- [97] Hundloe T. Valuing Fisheries: An Economic Framework. St Lucia: University of Queensland Press; 2002.
- [98] Badalamenti F, Ramos AA, Voultziadoc E, Sanchez Lizaso JL, D'Aaaa G, Pipitone C, et al. Cultural and socio-economic impacts of Mediterranean marine protected areas. Environmental Conservation. 2000;27:110-25.
- [99] Dobryznski TJ, E. NE. An Evaluation of the Short-term Social and Economic Impacts of Marine Reserves on User Groups in Key West. [Unpublished Masters]. Durham NC: Duke University; 2001.
- [100] NOAA. National Fisheries Guidance for Social Impact Assessment. In: Commerce UDo, editor.2001.