

**Assessing the social acceptability of Marine Protected Areas
(MPAs) – a comparison between Port Stephens-Great Lakes Marine
Park (PSGLMP) and Batemans Marine Park (BMP) in NSW**

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*Thesis submitted in partial fulfilment of the requirements of the degree of Doctor of
Philosophy (C02031)*

CERTIFICATE OF ORIGINAL AUTHORSHIP

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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*This thesis is dedicated to my loving and supportive family –
my husband Deon and my beautiful boys Cameron and Jonathon, as well as my parents,
Helen and Michael.*

*Also in loving memory of Meredith Hall who demonstrated in her work and life that
conservation and compassion need not be mutually exclusive. Her passion, kindness, insight
and sense of humour are sorely missed.*

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List of Acronyms

APB	Aboriginal Protection Board
BMP	Batemans Marine Park
CBD	Convention on Biological Diversity
eNGOs	Environmental Non-Government Organisations
FAO	Food and Agriculture Organisation of the United Nations
GBRMPA	Great Barrier Reef Marine Park Authority
GBRMP	Great Barrier Reef Marine Park
IUCN	International Union for the Conservation of Nature
JBMP	Jervis Bay Marine Park
LGA	Local Government Area
MPA	Marine Protected Area
NSW	New South Wales
NRSMPA	National Representative System of Marine Protected Areas
PSGLMP	Port Stephens-Great Lakes Marine Park
RAP	Representative Areas Program
SIA	Social Impact Assessment
SIMP	Solitary Islands Marine Park

Definitions

Cultural fishing	“Fishing activities and practices carried out by Aboriginal persons for the purpose of satisfying their personal, domestic or communal needs, or for educational or ceremonial purposes or other traditional purposes, and which do not have a commercial purpose” (Department of Primary Industries 2012a)
Marine protected area	“An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means”(International Union for Conservation of Nature 1994)
No take zones	Also often referred to as ‘marine reserves’, ‘highly protected area’ or marine ‘sanctuaries’, no take zones refer to areas in which any extraction of marine resources (living or non-living) is prohibited.
Precautionary Principle	“The absence of scientific certainty should not be a reason for postponing measures to establish MPAs to protect representative ecosystems”(Australian and New Zealand Environment and Conservation Council 1998)
Representativeness	The National Representative System of Marine Protected Areas aims to include a reasonable reflection of the “biotic diversity of the marine ecosystems from which they derive”.(Australian and New Zealand Environment and Conservation Council 1998)
Sea country	“For coastal Aboriginal people, there is no distinction between land and sea: ‘Country’ extends offshore to include the sea and its resources. This holistic view ‘of continuous land and sea Country “as far as the eye can see”’ means that Aboriginal people conceptualise the coast very differently to non-Indigenous Australians, and to the worldview which underpins the Australian legal system...‘Sea Country’ (is) a term which includes the land and waters in the coastal zone of NSW, including the ocean, bays, shores, dunal environment and coastal estuaries and

their shores.” (NSW Office of Environment and Heritage 2012 p.2)

Social impacts

“..the consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organise to meet their needs and generally cope as members of society. The term also includes cultural impacts involving changes to the norms, values and beliefs that guide and rationalise their cognition of themselves and their society.”

(Interorganisational Committee on Guidelines and Principles 2003)

Social impact assessment

“..the process of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.” (Vanclay 2003b)

Abstract

The biological success of Marine Protected Areas (MPAs) depends to a large extent on their social acceptability. Considerable efforts are increasingly being expended on public participation processes and socio-economic assessments during MPA planning exercises, yet local opposition remains a largely consistent response to MPA proposals around the world. This resistance has slowed international progress towards a global network of MPAs. Two case studies in New South Wales, Australia were used to examine some of the factors that may influence community attitudes towards MPAs using a multi-disciplinary approach, incorporating media studies, social impact assessment, social research and oral history traditions. The Port Stephens-Great Lakes Marine Park (PSGLMP) and Batemans Marine Park (BMP) were established in December 2005 and April 2006 respectively. Both underwent virtually identical and concurrent planning processes. However resistance to the BMP was more intense and sustained and continues to this day. This thesis is unique in that the virtually identical and simultaneous planning processes conducted in the two study areas provides a valuable opportunity to look beyond governance processes and examine a wide array of influences on community responses to these MPAs. Key variables were compared to examine what may have contributed to this differential community response. These were:

- demographics and history;
- local media coverage and the role of influential media spokespeople; and
- the social impacts of the parks.

The results found that the BMP demonstrated the 'perfect storm' of opposition triggers – a community struggling in the transition away from a primary production economy, a highly politicised media dominated by powerful elites with ideological objections to the park, and social impacts sufficiently profound to motivate local citizens to support an active campaign against the park. Opposition to MPAs, however, cannot be explained by impact alone. All the marine park opponents interviewed represented themselves as 'knowledge holders' about their local marine area. This knowledge – predominately 'fish' knowledge – appears to have conflicted with a policy position which places biodiversity conservation as the primary objective of MPAs. This has led to a perception that the practical knowledge of users was not valued in the planning of each marine park.

This research points to the importance of looking beyond a 'one size fits all' approach to MPA planning. Planning efforts require a deeper understanding of the social, cultural and political landscape of the communities in which MPAs are proposed. In particular the study identified three main areas in which the better integration of socio-cultural considerations is critical. They are communication and community engagement, social assessment and public policy.

1. Introduction

1.1 Marine Protected Areas (MPAs)

The conflict and contestation surrounding Marine Protected Areas (MPAs) begins even with their definition. MPAs are defined by the International Union for the Conservation of Nature (IUCN) as areas set aside for the primary purpose of conservation, with conservation taking precedence over all other objectives (Day et al. 2012; International Union for Conservation of Nature 2012). The Food and Agriculture Organisation of the United Nations (FAO), however, define MPAs as 'any marine geographical area that is afforded greater protection than the surrounding waters for biodiversity conservation or fisheries management purposes' (Rice et al. 2012), signalling that biodiversity protection must not always be the primary objective of an MPA. This divergence in the definitions of MPAs is significant because the objectives of an MPA are crucial in determining the management approach or approaches used within it. The term 'marine protected area' can encompass a wide variety of spatial management approaches, from limitations on some methods of extraction or target species, right through to full closure to all human access. Multiple use MPAs often incorporate a variety of zones which use a number of these different approaches. MPAs established to achieve fisheries management objectives such as improvements in fish stocks, or managing declining catches, will often be managed quite differently to those established to achieve biodiversity conservation objectives. MPAs established for biodiversity conservation tend to borrow from terrestrial concepts of national park protection and often have an emphasis on 'no take' or sanctuary style protection, particularly in areas of high or representative biodiversity values. MPAs established to manage a particular species or group of species may rely more heavily on gear restrictions, temporal closures or no take zones concentrated on spawning or nursery areas.

There has been considerable debate within the scientific and wider community about the extent to which MPAs can fulfil both fisheries management and biodiversity conservation objectives (Hilborn et al. 2004; Rice et al. 2012). In particular the conservation community have questioned the value of fisheries spatial management measures in achieving biodiversity objectives, and contend that biodiversity protection objectives should be given primacy over all other objectives in cases of conflict (International Union for Conservation of Nature 2012; Rice et al. 2012). MPAs are considered by the IUCN and the wider conservation community as the cornerstone of marine conservation and a key tool in the response to large scale loss of marine biodiversity and habitat, the collapse of a number of global fisheries as well as the increasing and insidious threat of climate change. These concerns, coupled with an adherence to the precautionary principle, have driven the development of global MPA targets. These targets have considerable scope for creating confusion, with a number of different targets of between 10 and 30% established under a range of conventions. The most commonly cited agreement is the Convention on Biological Diversity (CBD), with a target of MPAs covering 10% of global marine habitats by 2012 (Wood et al. 2008; Banks & Skilleter 2010; Spalding et al. 2010). Despite large advances in levels of protection over the last decade it became apparent that these

targets would not be reached so it was agreed to extend the timeframes to 2020 (Spalding et al. 2010; McCay & Jones 2011).

Further feeding public confusion around MPAs is an often dizzying array of terminology used to explain MPAs and their management approaches. No take areas are variously described as 'sanctuaries', 'marine reserves', 'marine national parks' as well as various names given to these zones within individual jurisdictions. Multiple use MPAs can also be called marine reserves, marine parks and marine national parks, often creating a sense of confusion between multiple use and no take models of MPAs. This inevitably leads to stakeholder concerns that the targets establish under the CBD and other conventions refer exclusively to 'no-take' protection, a concern further exacerbated by the development of unofficial 'sub-targets' of no-take protection by conservation groups and scientific consensus statements (National Center for Ecological Analysis and Synthesis 2001; Winn 2008; Yale School of Forestry & Environmental Studies 2010). While these sub-targets usually relate to the geographical area within an established MPA (eg some groups have called for at least 50% of MPAs to be no-take) there is potential that these sub-targets can be misinterpreted (wilfully or unintentionally) as relating to global oceans or specific jurisdictional areas further heightening stakeholder anxiety and muddying the waters of the MPA debate.

Currently MPA's cover approximately 1.17% of the world's oceans (Spalding et al. 2010). Australia is one of the more advanced countries in the world in terms of its progress towards meeting MPA targets. Her policy response to her international commitments has been the progressive implementation of a National Representative System of MPAs (NRSMPA) at State and Commonwealth levels (Voyer, Gladstone & Goodall 2012). Consistent with the IUCN guidelines, the primary focus of the NRSMPA is the conservation of marine biodiversity. Government policy states that the primary objective of the national system of MPAs 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. (Australian and New Zealand Environment and Conservation Council 1998, p. 5)

This policy position does not include any objectives related to the improvement of fishing productivity or fishing experiences, although it is acknowledged that improvement in fish stocks might be a *possible secondary benefit* of MPAs (Australian and New Zealand Environment and Conservation Council 1998; Marine Parks Authority 2001). MPAs in Australia are therefore not intended as a fisheries management tool. They are not aimed at improving fishing productivity or fishing experiences (Australian and New Zealand Environment and Conservation Council 1998; Marine Parks Authority 2001).

Australia has recently completed its commitment to the NRSMPA in Commonwealth waters (waters beyond three nautical miles from the shore), however in inshore areas covered by state jurisdictions Australia's MPA protection remains patchy (Commonwealth of Australia 2013). What is more, recent additions appear to have followed an emerging global trend of establishing large MPAs in areas

removed from human population (Barr & Possingham 2013; Hunt 2013; Pressey 2013). 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 (Spalding et al. 2010). 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. Given Australia's leadership in advancing marine conservation the lessons learnt from the development of its existing MPA network will be of interest globally.

1.2 The human dimension of MPAs – influences on community acceptance

MPAs primarily regulate human behaviour, so it follows that social factors are the primary determinants of the success or failure of an MPA (Kelleher & Recchia 1998; Mascia 2003; Blaustien 2007; Blount & Pitchon 2007; Ingram 2008; Northcote & Macbeth 2008; Suuronen, Jounela & Tschernij 2010). The complexities of the relationship between people and their environment make it necessary to examine conservation problems hand-in-hand with societal beliefs, customs, attitudes and practices (Gray et al. 2010). Resistance from local communities and key stakeholders has led to the failure of many attempts to establish MPAs throughout the world and conflict is often a feature of MPA planning processes (Fiske 1992; Wolfenden, Cram & Kirkwood 1994; Agardy et al. 2003; Weible 2008). Once an MPA is established its success depends to a large extent on the support and goodwill of key stakeholders, especially fishers (Agardy et al. 2003; Hand 2003; Chuenpagdee et al. 2013). The importance of considering socio-economic impacts and engaging local communities in MPA declaration and planning are widely acknowledged, and therefore this is often the focus of attempts to build community support for MPAs. Considerable efforts are increasingly being expended on public participation processes and socio-economic assessments, yet opposition remains a largely consistent response by local communities to MPAs around Australia and the world (Voyer, Gladstone & Goodall 2012). This suggests that efforts to understand community resistance to MPAs need to look beyond process and explore other factors which may influence community acceptance in an integrated way.

The research contained within this thesis recognises that policy implementation does not occur in a social or cultural vacuum. It attempts to explore how external variables can influence and affect the success of management interventions (Vanclay 2012). This thesis looks beyond the MPA planning processes to examine how two communities in New South Wales, Australia, have responded to MPAs in their areas more than five years after their declarations. It is unique in that the virtually identical and simultaneous processes conducted in the two study areas provides a valuable opportunity to examine a wider array of influences on community responses to these MPAs, with a particular focus on social impacts on key user groups. This research is multi-disciplinary, bringing together media studies, social impact assessment, social research and oral history traditions.

1.3 Thesis outline

The thesis begins in Chapter Two by providing a literature review of different approaches to social assessment employed in MPA planning processes, with three Australian MPA planning exercises examined in detail, including the study areas.

Chapter Three provides an overview of the methodological approach to the research, including placing it within its theoretical context. It outlines the research questions, the approach to examining these questions and the ethical considerations incorporated into the research design.

Chapter Four introduces the two study areas and provides the contextual information which underpins the different compositions of each, including demographics and history.

Chapter Five explores the way the media covered the news of the marine park in each community and the role of key spokespeople in advancing particular messages within news media relating to the parks.

Chapter Six contains the results of a series of interviews with marine park users which sought to ascertain the social impacts of the park, who felt them and how communities responded to changes to the way their marine environment was managed.

Finally, Chapter Seven summarises the key findings of this research and provides a number of responses to these findings based around three core areas: communication, community engagement and policy and planning.

This thesis synthesises four publications that have been outputs of this PhD research (contained in Appendix 1), which are listed below and at the beginning of their relevant chapters.

Voyer M, Gladstone W. and Goodall H. 2012. Methods of social assessment in Marine Protected Area planning: Is public participation enough? Marine Policy 36: 432-439.

Voyer, M., T. Dreher, W. Gladstone, and H. Goodall. 2013. Carving the stake: dodgy science or global necessity? Local media reporting of marine parks. in S. Cottle, editor. Environmental Conflict and the Media. Peter Lang, New York

Voyer, M., W. Gladstone, and H. Goodall. 2013. Understanding marine park opposition: the relationship between social impacts, environmental knowledge and motivation to fish. Aquatic Conservation: Marine and Freshwater Ecosystems

Voyer, M., Dreher, T., Gladstone, W. & Goodall, H. 2013, 'Who cares wins: The role of local news and news sources in influencing community responses to marine protected areas', Ocean & Coastal Management, vol. 85, Part A, no. 0, pp. 29-38

2. Literature review: social assessment in MPA planning

2.1 Introduction

The material in this is chapter has been published as:

Voyer M, Gladstone W. and Goodall H. 2012. Methods of social assessment in Marine Protected Area planning: Is public participation enough? Marine Policy 36: 432-439.

Social assessment is a means of gathering information about the social domain in order to inform management decisions (Lane, Dale & Taylor 2001). Predicting and mitigating social impacts is a critical component of social assessment, however research into the social impacts of MPAs is limited (Cocklin, Craw & Mcauley 1998; Taylor & Buckenham 2003; Northcote & Macbeth 2008; Barclay 2012). 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 (Rickson, Western & Burdge 1990; Lane, Dale & Taylor 2001; Vanclay 2003). Any issue that affects people directly or indirectly, can be considered a social impact (Vanclay 2003). Social impacts can be defined as;

..the consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organise to meet their needs and generally cope as members of society. The term also includes cultural impacts involving changes to the norms, values and beliefs that guide and rationalise their cognition of themselves and their society. (Interorganisational Committee on Guidelines and Principles 2003)

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 (Kareiva 2006; Bess & Rallapudi 2007; Northcote & Macbeth 2008). MPAs have the potential to affect the wellbeing of individuals and groups who value their use of the marine environment as integral to their 'way of life' and social identity (Minnegal et al. 2003; Solling jnr 2005; Momtaz & Gladstone 2008; Jones 2009). 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 tourism operators (Blount & Pitchon 2007). The ability and/or willingness of local communities to absorb these impacts can and does directly affect the success or failure of MPAs (Fiske 1992; Wolfenden, Cram & Kirkwood 1994; Kelleher & Recchia 1998; Agardy et al. 2003; Mascia 2003; Kareiva 2006; Blount & Pitchon 2007; Ingram 2008; Weible 2008; Suuronen, Jounela & Tschernij 2010).

2.2 Why assess social impacts?

There are two main reasons social impacts should be assessed and considered when conducting environmental interventions, such as the introduction of new protected areas. They can be summarised as follows:

1. Conservation actions have the ability to impact people, and
2. People have the ability to impact conservation actions.

2.2.1 Impacts on people

At the most basic of levels the consideration of social impacts is required under a range of international, federal and state mandates. Principle 1 of the 1992 Rio Declaration on Environment and Development states that “*Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.*” (United Nations 1992) It is inevitable that conservation actions will create winners and losers amongst affected stakeholders. The danger can be that those more vulnerable or disempowered sections of the community may feel the brunt of adverse impacts if the social costs of a proposal are not adequately considered and addressed in some way (Interorganisational Committee on Guidelines and Principles 2003).

Within the field of conservation biology, opinion is divided as to how much the consideration of people should be factored into conservation management decisions. Commonly referred to as the ‘parks vs people’ debate, two opposing philosophies have emerged (Degnbol et al. 2006; McShane et al. 2010; Miller, Minter & Malan 2010). One side, the ‘nature protectionists’, argue for conservation approaches sometimes referred to as ‘fortress conservation’, which limit human presence and maintain biodiversity conservation as their primary objective. Protected areas are considered to be the paragon of conservation tools given their ability to exclude or greatly minimise human presence, and are thought by many ‘nature protectionists’ to be the last line of defence against the continuing threat of biodiversity loss (Miller, Minter & Malan 2010; Robinson 2010). Protected areas, however, can have dramatic impacts on local residents and have the potential to further entrench existing inequalities, by further marginalising the poor (Christie 2004; West & Brockington 2006; Wilkie et al. 2006; Blaustien 2007) .

On the other side of the ‘parks vs people debate’, the so-called ‘social conservationists’ argue that conservation projects should aim for sustainable use and include social justice issues and poverty alleviation as some of their primary objectives (Degnbol et al. 2006; Wilkie et al. 2006; Miller, Minter & Malan 2010; Robinson 2010). They argue that conservation actions can conflict with ethical obligations and human rights as defined by the United Nations if they deny access to natural resources through restrictions on entry or use (Robinson 2010). Advocates of a ‘social conservationist’ or ‘social ecology’ approach to conservation argue that the philosophical basis of the ‘fortress conservation’ model is fundamentally flawed, in that it disassociates humanity from the rest of nature. They argue that the very concept of biodiversity, which is fundamental to the field of

conservation, is value laden and its definition differs from community to community, according to their cultural values. Importantly, they argue that these values and definitions cannot, and should not, be transferred to or imposed on other communities by a powerful elite (Sarkar & Montoya 2010).

The unifying factor in this debate is that it is clear that conservation actions have an intrinsic ability to impact people and that there will always be 'trade-offs' or 'losses' for local communities and/or the environment when implementing conservation actions (McShane et al. 2010). MPAs, depending on their design, can sit just about anywhere on the scale between these two ends of the 'people vs parks' continuum. A total 'no-take' MPA would be consistent with the fortress conservation model, while MPAs which are open to controlled extractive resource use would fit at the other end of the spectrum. Multiple use models which contain zones for both 'no take' and managed use fit somewhere in the middle, and could be seen as a practical example of how the two differing ideological positions can be accommodated (Agardy et al. 2003).

Acceptable trade-offs will be different for different communities at different times, and will be greatly influenced by individual circumstances relating to upbringing, education, economic conditions, belief systems, life experiences and the environmental conditions being managed (McShane et al. 2010; Robinson 2010). Successful 'trade-off' thinking therefore requires a much greater understanding of the complexities of the social-ecological relationship and much more emphasis on an inter-disciplinary approach to conservation management (Degnbol et al. 2006). A deeper understanding of the different points of view, attitudes, motivations and values of the actors in each conservation debate will inform management efforts and give a richer and shared understanding of what is 'negotiable' and 'non-negotiable' in any given community (Ingram 2008; McShane et al. 2010).

2.2.2 Impacts of people

Equitable consideration of social impacts is a crucial means of increasing the efficiency and sustainability of management efforts. By definition, it is humanity's interactions with nature that determines anthropogenic environmental impacts, hence it follows that the success of conservation actions depends enormously on people's behaviours, attitudes and values (International Union for Conservation of Nature 2000).

There are many examples of how inadequate consideration of social impacts has led to failure of well-intentioned conservation actions, including MPA proposals that have failed or been significantly delayed due to resistance from local communities and key stakeholders (Fiske 1992; Wolfenden, Cram & Kirkwood 1994; Agardy et al. 2003; Weible 2008). Once an MPA is established, community support is essential to its success (Agardy et al. 2003). A number of case studies outlined in the literature point to the social and political acceptability of MPAs as key determinants of their success or failure once established (Suuronen, Jounela & Tschernij 2010; Jentoft et al. 2012; Chuenpagdee et al. 2013; Perez de Oliveira 2013).

2.3 Methods of social assessment

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 derived from the principles of Ecologically Sustainable Development (Burdge & Vanclay 1995; Burdge 2001). It is, however, acknowledged to be the 'poor cousin' of the other two disciplines - Environmental and Economic Impact Assessment - and is far less commonly used (Lane, Dale & Taylor 2001). 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 (Lane, Dale & Taylor 2001). SIA however serves an important function by providing a framework by which to incorporate social considerations into planning and management activities. These include the development of regional profiles (incorporating key socio-economic and demographic data) and public participation throughout the process (Interorganisational Committee on Guidelines and Principles 2003; Bureau of Rural Sciences 2005). 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 (Interorganisational Committee on Guidelines and Principles 2003; Vanclay 2003; Bureau of Rural Sciences 2005).

'Public participation' is a much more commonly used tool for social assessment. Public participation 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 (Burdge 2001). While some form of public participation is commonly enshrined in the legislation which governs MPA planning processes, in practice it takes many forms. Determining the most effective means of engaging communities is a problem that is common across any public and private sector dealing directly with the public and is often highly contested (eg see Consumers Health Forum of Australia 2013). 'Participation' may involve 'consultation', whereby comments are sought from interested parties but ultimately the government makes the final decision. 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. It is often the case that communities do not engage in participation exercises until there is something to react to, as illustrated by this quote from an interview with a government official on the Ningaloo (Western Australia) coast;

"We actually tried to do the educational and community involvement (work) before we put out the first draft of the management plan and we couldn't get anyone to come along. We only got involvement from the community when we put out the first framework paper for the marine park

which introduced the sanctuary zones and that's when the community got up in arms.”(Ingram 2008)

Consultation processes may conform to what is known as a ‘deficit model’ of public engagement, where it is assumed that people have limited knowledge and require active education. This model assumes that education will be sufficient to engender support for a proposed action, rather than recognising the diverse interpretations of stakeholders based on their own alternative form of rationality (Gill, Waitt & Head 2009). In these instances, despite making use of opportunities to ‘have their say’ stakeholders may feel their views have not been heard or considered, which results 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 lack 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, traditionally, it tends to favour well educated, higher income earners who have a good understanding of the tools available to them to influence decision making (Rickson, Western & Burdge 1990).

2.4 Incorporating social assessment into MPA planning

It is clear from the literature that it is impossible to divorce conservation management from the social context in which it exists. Despite this, the role of the social sciences in conservation management has often been criticised as lagging behind the bio-physical sciences, fragmented, disjointed or completely absent (Mascia 2003; Blount & Pitchon 2007; Symes & Hoefnagel 2010). Miller et al (2010) argued that conservation scientists often fall into the category of ‘nature protectionists’, those that hold a view that protected areas, and hence the restriction of human use, are the ultimate and ideal means of biodiversity protection. Social scientists and anthropologists, on the other hand, quite often hold a ‘social conservationist’ viewpoint, in which human welfare, poverty alleviation and economic development are seen as an important component and priority of conservation management efforts (Degnbol et al. 2006; Blount & Pitchon 2007; Miller, Minter & Malan 2010). The different conceptual understandings of the role of conservation results in the two fields ‘talking past’ each other, and finding it difficult to reconcile their conflicting arguments (Degnbol et al. 2006; Miller, Minter & Malan 2010).

Blount & Pitchon (2007) considered the problems associated with a lack of social science input into MPA declaration and management as systemic. They point out that, despite the fact that in essence MPAs are designed to manage human behaviour, regulatory agencies see them as a tool for biological and ecological conservation and therefore focus primarily on marine resources and biodiversity. Human behaviour, including economics, history and culture, are treated generically under the heading of ‘socio-economics’, which forms a secondary priority to the biological and ecological

sciences. In this way social scientists, such as anthropologists and sociologists, are relegated to a secondary, and very narrowly defined role in the planning process.

These problems have resulted in a very limited understanding of the social impacts of MPAs. A search of the literature found little in the way of systematic assessment of the social impacts of MPAs on stakeholders following their inception either in Australia or overseas, with a few notable exceptions (Cocklin, Craw & Mcauley 1998; Badalamenti et al. 2000; Taylor & Buckenham 2003; Ingram 2008; Northcote & Macbeth 2008; Jones 2009; Commonwealth of Australia 2013). While research in the area is slowly beginning to emerge, particularly in developing nations, many of these studies are small scale and focus on one aspect of the many socio-cultural factors that influence community responses to MPAs (Gjertsen 2005; Mascia, Claus & Naidoo 2010; Carneiro 2011; van de Geer et al. 2013).

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. Section 2.5 investigates a number of different approaches to the assessment of social impacts by a range of Australian federal and state government agencies during past MPA planning processes.

2.5 Social impact assessment of MPAs – some Australian approaches

2.5.1 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 (*Great Barrier Reef Marine Park Act 1975; Marine Parks Act 1997; Environmental Protection and Biodiversity Conservation Act 1999; Lane, Dale & Taylor 2001*). 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 (Great Barrier Reef Marine Park Authority 2002; Thomson et al. 2005; Fernandes et al. 2009).

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 professional and recreational fishing and tourism, to access existing networks of stakeholders and build trust within the community (Osmond et al. 2010). 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 (Thomson et al. 2005).

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 professional 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 professional fisheries resources (Hand 2003; Commonwealth of Australia 2006). 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 (Great Barrier Reef Marine Park Authority 2003; Hand 2003; Commonwealth of Australia 2006). At the time the report on the professional fishing sector was unique in its specific focus on social (rather than economic) impacts of the RAP on professional fishing families and communities (Bureau of Rural Sciences 2003). 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 (Bureau of Rural Sciences 2003; Great Barrier Reef Marine Park Authority 2003).

2.5.2 New South Wales Marine Parks

Marine Parks in New South Wales (NSW) are declared under the *Marine Parks Act 1997* and a range of guidelines exist to guide the MPA declaration and planning process. The Act 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 (Australian and New Zealand Environment and Conservation Council 1998, 1999; Marine Parks Authority 2001).

The Government of NSW manages waters within three nautical miles of the coast. Government policy introduced by the previous Labor government, and still in place under the current government, aims to develop a comprehensive, adequate and representative system of MPAs across all its six marine bioregions (Marine Parks Authority 2001). 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 Bay. All have current zoning plans (Marine Parks Authority 2009a, 2009b). 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, which together generated over 13 500 submissions and involved more than 230 stakeholder meetings (Marine Parks Authority 2006c, 2006d).

The selection and zoning planning processes also included the development of socio-economic impact reports for each park (Marine Parks Authority 2006a, 2006b) and separate, independent economic impact assessments of professional activities, including professional fishing co-operatives (Powell & Chalmers 2005, 2006; Read 2010). The impacts on professional fisheries 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 professional fishing licenses. For non-professional 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 on non-professional activities. 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 (Marine Parks Authority 2006a).

2.5.3 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 and this was due, in part, to considerable opposition to the concept of MPAs from specific sectors within the community (Wescott 2006). The declaration of the reserves attracted considerable resistance, the most dramatic example of which was the march of approximately 1500 fishers (professional and recreational), fishing families and sympathisers on Victoria's Parliament House in May 2001 (Minnegal et al. 2003). 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 (Wescott 2006). It held a series of public meetings and briefings in fifteen locations along the Victorian coast (Environment Conservation Council 2000). 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 professional 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 (Essential Economics Pty Ltd 2000). The report also predicted that restrictions on professional 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 professional fishing as an income source. It was recognised, however, that individual professional fishers may be adversely affected by the proposals and as such structural adjustment was recommended (Environment Conservation Council 2000; Essential Economics Pty Ltd 2000).

2.6 Attitudinal studies and MPAs

As demonstrated in Section 2.5 considerable efforts have been made in Australian planning processes to engage stakeholders, including a mix of consultation, partnership and delegation approaches. 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' (Australian and New Zealand Environment and Conservation Council 1998). 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 (Blount & Pitchon 2007). 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 provide insight into the views of the wider community including those that are unlikely to become engaged in public participation exercises (Wolfenden, Cram & Kirkwood 1994; McGregor Tan Research 2008a, 2008b; Young & Temperton 2008; Sutton & Tobin 2009). 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 Queensland and in other states, 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 (Young & Temperton 2008). A more targeted survey program involving 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 (Sutton & Tobin 2009).

Surveys conducted in two NSW marine parks (Solitary Islands and Jervis Bay) also found broad community support for the local MPA. The overwhelming majority of respondents favoured conserving the Solitary Islands Marine Park (87% of respondents) (McGregor Tan Research 2008b) and the Jervis Bay Marine Park (84% of respondents) (McGregor Tan Research 2008a). While these surveys had considerable flaws in their survey design the results are supported by other research in the parks. Visitor surveys conducted in the Solitary Island Marine Park between 2002 and 2005 found the range of scores for overall satisfaction was between 5.3 and 6.5 (out of a possible maximum score of 7) (Ryan 2005). A survey conducted in 1995 in Jervis Bay prior to the declaration and zoning of the then proposed aquatic reserve estimated the reserves were opposed by 12-20% of the local community (Sant 1996). 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 (Wolfenden, Cram & Kirkwood 1994; Cocklin, Craw & Mcauley 1998; Thomassin et al. 2010). 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 (Wolfenden, Cram & Kirkwood 1994; Cocklin, Craw & Mcauley 1998; Taylor & Buckenham 2003). 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 point to a link between social impacts and MPA opposition (Sutton & Tobin 2009). 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 (Wescott 2006; Banks & Skilleter 2010). This is an understandable reaction given the process for establishing a new MPA in Australia is an intensive and laborious process that allows considerable opportunities for public input, as demonstrated in Section 2.5. A minority opinion becomes significant, however, when this minority is made up of key stakeholders who play a crucial role in determining the success or failure of an MPA. 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 as outlined in the following sections (Voyer, Gladstone & Goodall 2013).

2.7 The politics of social assessment

Conservation groups in Australia argue the case 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. The Greens 2008; Winn 2008; Edmunds et al. 2009). 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. Ecofishers; Kearney 2007b, 2007a; Gay 2009; Kearney 2009). This debate contains evidence of fundamental differences in the values, motivations and aspirations of each of the

main protagonists, along the lines of the nature protectionist vs social conservationist debate (also known as preservationist vs sustainable use see Jones 2001; Jones 2007). The use of MPAs as key election policies in both state and federal election campaigns for both the Australian Liberal Party (who promised to stop them) and the Greens (who promised to increase them) in the 2010 and 2013 Australian federal elections highlighted the fact that politicians have become aware that this issue is gaining political capital (see The Greens 2008; Liberal Party of Australia 2010; Taylor 2010). 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 and has remained on the political agenda ever since (see Section 4.2.3 for more detail).

Section 2.5 demonstrated that efforts made by management agencies to engage and consult the general population and stakeholder groups appear to be exhaustive and extensive. Section 2.6 showed 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 (Cocklin, Craw & Mcauley 1998; Agardy et al. 2003; Weible 2008; Thomassin et al. 2010).

2.8 Discussion

Table 2.1 (a summary of the reviews in previous sections) 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 (Marine Parks Authority 2006a, 2006b; Wescott 2006; Banks & Skilleter 2010).

2.8.1 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 (Burdge & Vanclay 1995; Vanclay 2003; Bureau of Rural Sciences 2005). GBRMPA stands out as the only management agency that 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 - professional 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 Australian examples were prepared by external consultants separate from the planning processes and their

Table 2.1: Overview of Australian examples of social assessment in MPAs (Marine Protected Areas)

MPA	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 (Osmond et al. 2010)	1 report designed to measure the resilience of professional 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 (Marine Parks Authority 2006a) PSGLMP 972 km ² (Marine Parks Authority 2006d)	No, some social considerations included in economic reports	2 socio-economic reports for each park focused primarily on economic impacts, particularly professional 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 and Independent Scientific Audit of NSW Marine Parks included consideration of all NSW Marine Parks.
Victorian Marine Parks and Marine Sanctuaries implemented in 2002	Identification & selection conducted by independent land use advisory body. Management of the MPAs is the responsibility of Parks Victoria – State jurisdiction	525.73 km ² in total for all MPAs (Commissioner Environmental Sustainability Victoria 2008)	No, some social considerations included in economic reports.	1 independent socio-economic report focused primarily on economics, completed after the final recommendations on proposed MPAs was released.	Independent advisory body conducted selection and identification, expert based advisory group provided input into process. 6 public comment periods, range of public and stakeholder meetings	None found

associated participation programs (Essential Economics Pty Ltd 2000; Hand 2003; Powell & Chalmers 2005; Marine Parks Authority 2006b; Blount & Pitchon 2007).

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 (Rickson, Western & Burdge 1990; Badalamenti et al. 2000; Hundloe 2002). 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 (Rickson, Western & Burdge 1990). In the Florida Key Marine Park, for example, the management regime had low economic impacts but high social impacts through crowding and conflict amongst user groups (Dobryznski & Nicholson 2001 *cited in* Blount & Pitchon 2007).

2.8.2 Public participation

In all three Australian examples 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. The large numbers of submissions received in all three examples indicates 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 i.e., 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 (Rickson, Western & Burdge 1990).

The focus of public submissions is often framed in terms of support or opposition for a specific proposal or aspects of the proposal (National Oceanic & Atmospheric Administration 2001). 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 professional fishing communities.

2.8.3 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 (Sant 1996). 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 effects 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.

2.9 Conclusions

This review of planning and zoning processes reveals that social assessment of Australian MPAs has previously been 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. More recent MPA declarations in Australia have attempted to address this issue by conducting formal SIA as part of their planning processes, although the scope has been largely limited to professional fishing operations only (Bureau of Rural Sciences 2003; Commonwealth of Australia 2013) Social assessment for commercial fisheries is

better developed than for MPAs within Australia. A number of frameworks have been prepared, or are in development (Schirmer & Casey 2005; Brooks, Schirmer & Loxton 2011), and several studies have been conducted on the social aspects of aquaculture and wild harvest fisheries conducted over the last decade (Brooks 2010; Brooks et al. 2010; Barclay 2012). Despite these advances a critical barrier to achieving a triple bottom line (ecological, social and economic) approach to marine and fisheries management lies in the tendency for assessments to be conducted for each component separately, with difficulties in integrating the final results (Barclay 2012). The importance of considering social, economic and ecological systems in an integrated way is underscored by the interdependence of these systems on each other. Emerging work by Abernethy et al (2013) points to the way social and ecological systems co-evolve, with behaviour adapting to changed ecological and economic situations. Therefore social conditions are contingent on ecological and economic conditions and cannot be considered in isolation from these factors.

A lack of available data on social factors or social indicators collected over time is another significant hurdle for effective social assessment (Barclay 2012). This is particularly relevant to SIA, which promotes a comparative approach to assessment. For this approach to be successful 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. This thesis goes some way towards filling this research gap.

3. Approach and Methods

3.1 Introduction and background: Research philosophy and researcher positioning

This chapter positions this research within theory, provides an overview of the main aims and objectives of the research and the methods employed to undertake the research.

Personal goals, motives, beliefs and values can have important consequences for the validity of a research project. If not recognised and examined, these goals or values may influence perceptions and unintentionally introduce bias. It is a human 'instrument' that gathers research data, interprets it and finds meaning in it and all researchers will to some extent rely on personal experience, assumptions and value judgements to make research decisions (Patton 2002; Hammersley 2011). If acknowledged, made explicit and carefully managed this does not need to threaten the validity of a project (Maxwell 2005). Self-awareness, or reflexivity, on the part of researchers allows them to examine the way in which they, as the human instrument, can influence research findings and adapt their approach accordingly. It forces researchers to examine 'what I know and how I know it' and reflect on how they are applying that knowledge to the research process (Patton 2002).

The research philosophy brought to this thesis is strongly influenced by the researcher's empiricist training in the natural sciences. It therefore recognises the value of the empiricist paradigm in providing improved understanding of the way natural systems work through deductive methods and hypothesis testing. Of interest, however, is the interface between the natural sciences and the way we live in, interact with, and manage the natural environment i.e., the practical application of science in a human setting. This project emerged from a background as a public service officer working in the field of Marine Protected Area (MPA) management and planning. Over a period of ten years working in a range of planning, operational and policy roles the controversy and conflict associated with the declaration and management of new and existing MPAs and other natural resource management interventions was clearly evident. In effect this time revealed the way empiricist approaches to science, applied through policy and politics, can come into conflict with the subjective experiences and constructed realities of human communities.

The unpredictability of human responses and the complexities of the human condition mean that the empiricist paradigm can be problematic. A more interpretive, 'constructivist' understanding of the world recognises that meanings are constructed by people, there is no absolute 'truth' and that people develop their own subjective understandings of the world that influence the way in which they live and interact with others, with nature, and with regulation (Creswell 2009).

The research paradigm 'realism' was found to best bridge the divide between two major paradigms that influenced this thesis - empiricist training and constructivist experience (Miles & Huberman 1994). The realist paradigm acknowledges the constructivist epistemology by recognising that 'knowledge' is constructed by the social and historical contexts in which it exists. In essence the human experience is subjective. However the realist tradition also borrows from positivist notions of there being

overarching mechanisms and structures that help to make sense of the world. Theories can be built and tested, and causal links can be identified between these mechanisms and human responses (Miles & Huberman 1994; Creswell 1998).

3.2 Research purpose

Time spent in government employment revealed many of the same objections to MPAs voiced in several different parts of Australia by many different people. What was not apparent was any concerted effort to follow up these concerns with research or inquiry after the policy was implemented. This research project was born out of these experiences. Time in government employment also enhanced a sense of the need for practical research, particularly in the social sciences – research that would assist natural resource managers to achieve their conservation management objectives while also engaging with and enhancing communities and social systems. Personal goals in undertaking this research involved developing a deeper understanding of the basis of MPA opposition in the hope that improved understanding would facilitate more meaningful engagement of stakeholders and consequently more successful MPAs. From the outset the research was based upon an assumption that understanding the impacts of MPAs would produce a better understanding of the basis of MPA opposition. Four research questions were developed to explore this notion further.

- 1. How are social impacts assessed in Australian MPA declaration and planning processes, and how is the success and/or accuracy of these assessments monitored following the establishment of MPAs?*
- 2. How did communities, particularly park users, respond to the Port Stephens-Great Lakes and Batemans Marine Parks?*
- 3. What social impacts have been experienced in each marine park community and by which sections of the community?*
- 4. If there are any differences between the levels of acceptance in each marine park community why do these differences exist?*

Research question one was primarily addressed by the literature review described in Chapter Two. It revealed some fundamental flaws in the current process of social assessment of MPAs in Australia. Research question two seeks to establish the differences and similarities between community acceptance or perceptions of each marine park, particularly amongst park users. Question three seeks to explore how people (particularly fishers) experienced the marine park and how this influenced their opinions, while question four attempts to understand the characteristics shared by those in the community who oppose marine parks.

During the course of the research it became clear that views about MPAs and marine conservation management more generally were far more complex and could not be described by a simple causal account that correlated personal impacts with opposition. Consequently the methodological approach

was adapted to ensure that it was possible to explore the complex variety of factors that influences attitudes to MPAs.

3.3 Research methodology

This research is a mixed methods, but primarily qualitative, research project incorporating a range of research methods and data sources (see Section 3.6). The research design was an iterative process, which is indicative of the evolution of the philosophical approach underpinning the development of the project. Initially influenced by an empiricist training and background in the natural sciences the original research methodology focused largely on exploration of quantitative research methods such as survey instruments. However, reflection during the literature review stage led to the conclusion that a purely quantitative approach would do little to address the research questions. Quantitative methods such as surveys provide a good understanding of the breadth of an issue, such as how widely a perception is held and who holds it. Chapter Two described a variety of surveys of this nature. Certainly the results indicated that opposition to MPAs was expressed by a minority but they provided limited understanding of how MPAs affect user groups, what factors influence the way these impacts are felt, and how this links with other factors that influence opposition to MPAs. Understanding of these issues required a more in-depth, inductive approach to research, a depth that can be provided by qualitative research (Creswell 2009). Having said that, some quantitative tools and methodological techniques have been incorporated in the research methods, in keeping with the case study research design (see below).

3.4 Research design

A case study approach to qualitative research involves “the exploration of a ‘*bounded system*’ or a case (or multiple cases) over time through detailed, in depth data collection involving *multiple sources of information rich in context*” (Creswell 1998 emphasis added). For this research an embedded case study design was chosen involving two ‘bounded systems’ covering two sites – the Port Stephen-Great Lakes Marine Park and the Batemans Marine Park. The research design is a collective instrumental case study approach in that it involves more than one site, and these sites have been chosen as ‘instruments’ to illustrate and explain a wider issue, namely the social impacts of MPAs and MPA opposition (Creswell 1998). It draws upon the two sites but also upon additional ‘cases’ within each case – the chosen stakeholder groups of professional, recreational and Indigenous fishers. Evidence is drawn from ‘multiple sources of information’ that includes documents, media articles, public submissions, reports, interviews and observational data. The ‘rich context’ of the cases was provided through the development of regional profiles for each case that incorporated data from historical, demographic and other statistical sources.

3.5 Case selection

As detailed in Section 3.1, direct professional experience with MPA planning processes ensured a familiarity with the Australian MPA system which assisted in case selection for this research. The Port Stephens-Great Lakes Marine Park (PSGLMP) and Batemans Marine Park (BMP) were established within months of each other in December 2005 and April 2006 respectively. The process by which they were gazetted and zoned appears, on the surface, to be identical. However, anecdotally there is a general perception that the public response to the declarations and subsequent zoning of the two marine parks was markedly different. The BMP has generated significantly more ongoing controversy and hostility within sections of the local community and stakeholder groups than has been the case in Port Stephens. This was particularly pronounced within the recreational and professional fishing sectors.

Selection of these two cases provided a unique opportunity to explore, compare and contrast the differences and similarities in community attitudes to MPAs across two cases that have essentially very similar attributes and histories. This provides a valuable opportunity to examine differential community responses by looking beyond procedure and process to incorporate a wider array of influences. Differing levels of community acceptance of the marine parks may be related to a variety or combination of factors, including:

- Differing demographic profiles, education levels, economic reliance on fishing and fishing-related industries in each community (Chapter Four).
- Media bias or inconsistencies in media reporting between communities (Chapter Five).
- Media savvy and resourceful individuals or groups able to influence community sentiment and lead 'campaign' style resistance to their local marine park (Chapter Five).
- Differing levels of social and/or economic impacts of the marine parks, real or perceived, in each community (Chapter Six).

This research sought to examine each of these variables and determine the basis of any underlying differences in levels of acceptance of the marine park in each community. In doing so it sought to investigate the nature and extent of marine park opposition – who opposes marine parks and why, and is there capacity to better manage this opposition?

The embedded case study design (Figure 3.1) incorporated three major stakeholder groups deemed most likely to feel the social impacts of the parks as well as the groups most likely to be opponents of the parks. These were all extractive user groups, specifically recreational fishers, professional fishers and Indigenous fishers. Analysis of the response of each of these stakeholders was conducted within their local park but it was also compared and contrasted across both case sites. A review of a number of MPAs in Spain found that the images people held were influential in determining their responses to the MPAs. Images are theorised as a 'representation of what people believe, what they perceive

could happen and what they think should be' (Jentoft et al. 2012) Perception is important in social systems because what people perceive to be real influences their actions, regardless of the 'truth' of their perceptions (Jentoft 2007). For this reason this research did not seek to differentiate between 'perceived' and 'actual' impacts on the stakeholder groups studied but instead explored the images they held about these impacts.

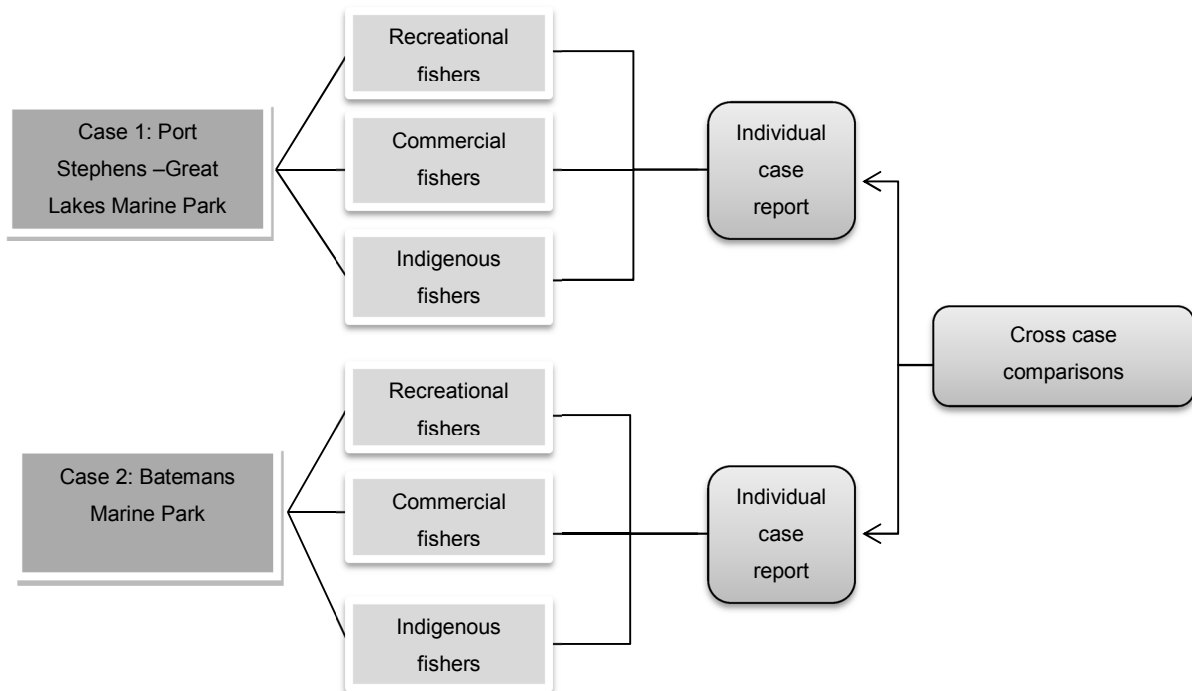


Figure 3.1: Diagram of embedded case study research design

3.6 Research methods

The four research questions directed and framed the research methods and data collection strategies (Table 3.1).

Table 3.1: Research questions, methods and data sources

Research question	Research method	Data source
1. How are social impacts assessed in Australian MPA declaration and planning processes, and how is the success and/or accuracy of these assessments monitored following the establishment of MPAs?	Literature review (Chapter 2)	Existing literature on social assessment and government reports and policy documents
2. How did communities, particularly park users, respond to the Port Stephens-Great Lakes and Batemans Marine Parks?	Document and media analysis (Chapter 4-5)	Marine park submission reports Media articles, letters to the editor

3. <i>What social impacts have been experienced in each marine park community and by which sections of the community?</i>	Interviews (Chapter 6)	Interviews with professional, recreational and Indigenous fishers
4. <i>If there are any differences between the levels of acceptance in each marine park community why do these differences exist?</i>	Regional profiles Media analysis Interviews Document analysis (Chapter 4-7)	Statistical data and historical documents Media articles Interviews with media spokespeople Interviews with professional, recreational and Indigenous fishers Publically available submissions

Research question four is particularly complex as it seeks to examine some of the factors that influence fisher attitudes towards each marine park and to compare and contrast the relevance of these factors across both parks. As detailed in Section 3.5, differing levels of acceptance of marine parks may be related to a variety or combination of factors. Table 3.2 outlines these factors and how the methodology examined each of them. In addition Table 3.2 indicates the chapters where further details of the methods used in each component of the study can be found.

Table 3.2: Methods and factors influencing community acceptance matrix

Factors influencing community acceptance	Document analysis	Regional profiles	Media analysis	Stakeholder interviews	Chapter reference
Community make up (eg demographics, history etc)		✓		✓	4
Consultation processes	✓	✓		✓	4
Social and economic impacts	✓			✓	6
Media coverage			✓	✓	5
Campaigns by sectoral interest groups	✓		✓	✓	5

Drawing on multiple sources of data in this way helps to ensure against ‘bias’ potentially introduced, for example, through the interview techniques or approach of the researcher. The use of multiple methods and multiple sources allows for triangulation of results across cases to increase the reliability of the findings (see Section 6.1.3).

3.7 Generalisability versus transferability

Given this research is not based on a probability sample the findings cannot be generalised in an empiricist sense of drawing conclusions about a sub-sample of the population and extending these conclusions to a wider population. However the value of qualitative research such as this is that it can provide a rich and deep understanding of the studied cases, which can build theory that can be extended and tested in other cases (Maxwell 2005). The case study design of this research involved purposive selection of cases that would provide insights into issues common to MPAs across the world. It is therefore expected that the findings could be transferred or extrapolated to many similar situations both in Australia and other developed nations (Patton 2002; Maxwell 2005).

3.8 Human ethics

This research was conducted in accordance with UTS Human ethics approval (UTS HREC 2010-313). Ethical considerations were incorporated into the research design in the following ways:

- Ensuring informed prior consent of all participants.
- Ensuring the anonymity of all participants through de-identification of all data.
- Incorporating member checks and sharing of research findings with participants into the research design and write up to allow participants to withdraw from the research if they were uncomfortable with the use of their data or specific quotes.
- Ongoing liaison with Aboriginal Land Councils over research aims and results.

3.9 Conclusion

This thesis contains the results of research developed in order to understand and interpret differential community responses to MPAs and gain insight into the factors that influence their community acceptance. It takes a multi-disciplinary approach in order to explore the full breadth of factors that may be important aspects in determining a community's response to an MPA, including media analysis, history and demographic analysis and social assessment.

4. Context

4.1 Introduction

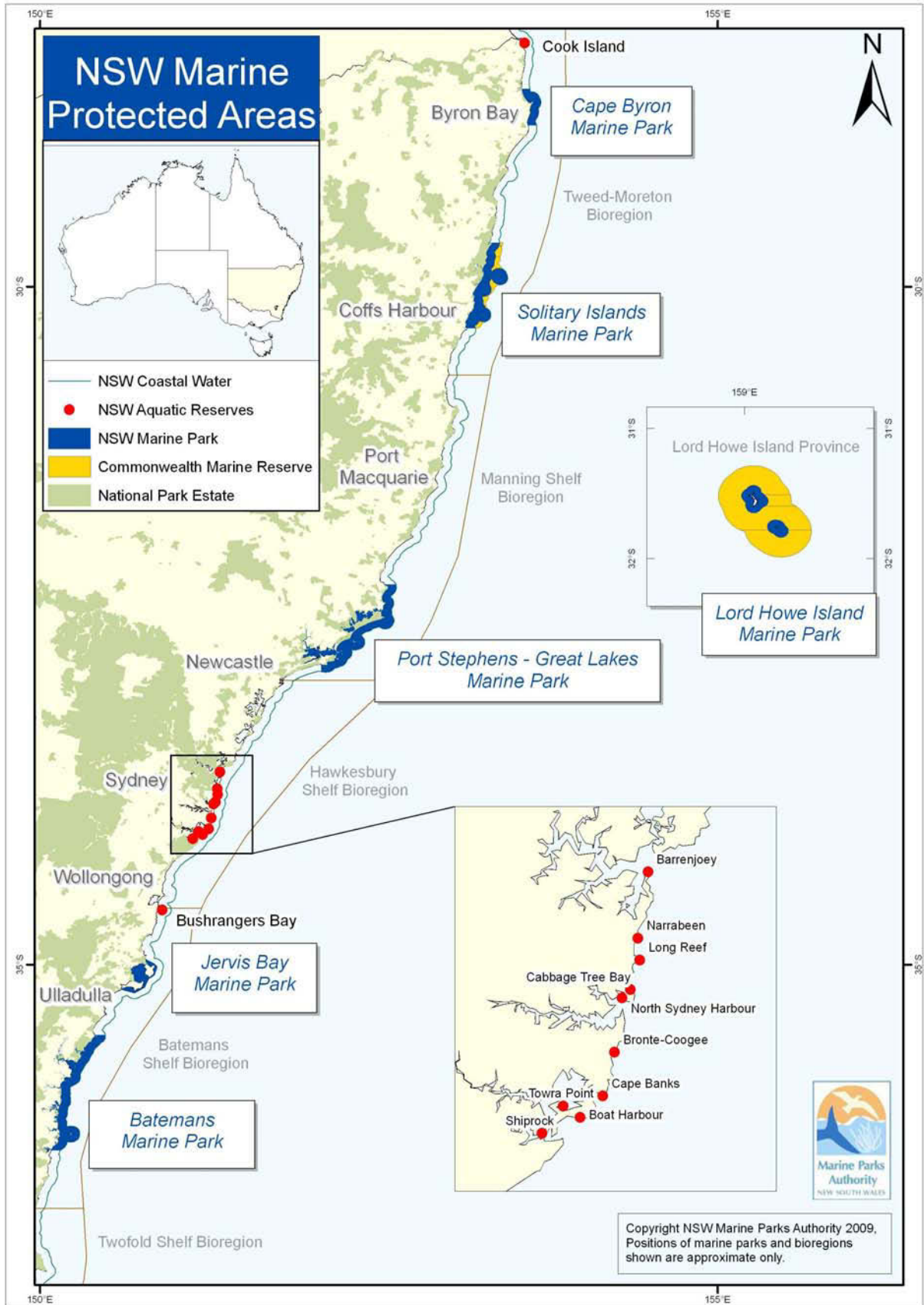
This chapter begins by introducing the two study areas, including their location and the history of their declaration and planning. It then goes on to test the anecdotal evidence that the two communities neighbouring the study areas responded differently to the parks in order to address Research Question Two: *How did communities, particularly park users, respond to the Port Stephens-Great Lakes and Batemans Marine Parks?*

The chapter develops the 'rich context' of the case study research design through the development of regional profiles for each study area, incorporating demographic, historical and oral history sources. This is designed to address, in part, Research Question Four *'If there are any differences between the levels of acceptance in each marine park community why do these differences exist?'* There are a number of factors which could help to explain any differences in community acceptance between the PSGLMP and BMP. In order to adequately address research question four it is necessary to understand the context preceding the introduction of the parks. For example, were there any clear differences in the demographic profiles, histories and cultures of each community that may have affected the level of acceptance of the marine parks, and were groups more vulnerable to the impacts of the parks (such as fishers) over represented in either community? The demographic make-up and local history and culture are likely to strongly influence the way in which a community responds to management interventions such as MPAs.

Both study areas are located in NSW, Australia (Figure 4.1). Both are marine parks established under the NSW *Marine Parks Act 1997 (Marine Parks Act 1997)*, and are large multiple use marine parks zoned for a variety of purposes. These zones include no-take Sanctuary Zones where no extraction of marine life or habitat is permitted. Other zones include Habitat Protection Zones, General Use Zones and Special Purpose Zones which have a range of different restrictions on the types of use and methods permitted which can vary slightly from park to park. Anecdotal reports indicated that the BMP was far more controversial than the PSGLMP and heavily resisted by sections of the local community, particularly fishers. The geographical location of each park, as well as the demographics, history and economic status of the towns within the boundaries are explored in detail in the sections below.

Following page:

Figure 4.1: NSW Marine Protected Areas (From Marine Parks Authority 2012a)



The Port Stephens-Great Lakes Marine Park (PSGLMP) is located on the mid north coast of NSW and stretches from Cape Hawke (Forster) in the north to the northern end of Birubi Beach in the south (Figure 4.2). The PSGLMP was declared on the 5 December 2005 and includes 98 000 hectares of seabed, waters, estuaries, rivers, creeks and lakes from the limit of tidal influence to three nautical miles offshore (Marine Parks Authority 2012a). The park is within the boundaries of the Great Lakes and Port Stephens local government areas.

The Batemans Marine Park (BMP) is located on the south coast of NSW and stretches from Brush Island in the north to Wallaga Lake in the south (Figure 4.3). The BMP was announced at approximately the same time as the PSGLMP but formal declaration did not occur until the 7 April 2006. It includes 85 000 hectares of seabed, waters, estuaries, rivers, creeks and lakes from the limit of tidal influence to three nautical miles offshore (Marine Parks Authority 2012a). It is entirely within the boundaries of the Eurobodalla Shire Council area. About three-quarters of the Eurobodalla Shire, which encompasses over 3 400 square kilometres, is national park or state forest (Profile ID 2012).

Following pages:

Figure 4.2: Port Stephens-Great Lakes Marine Park Zoning Map (From Marine Parks Authority 2012a)

Figure 4.4: Batemans Marine Park Zoning Map (From Marine Parks Authority 2012a)

Port Stephens-Great Lakes Marine Park Zoning Plan 2007



Port Stephens-Great Lakes Marine Park Zoning Plan 2007



- Legend**
Port Stephens - Great Lakes Marine Park ZONE
- General Use Zone
 - General Use Zone (Seasonal Commercial Closure)
 - Habitat Protection Zone
 - Habitat Protection Zone (Seasonal Recreational Trolling Only)*
 - Habitat Protection Zone (Fishing for Bait Only)*
 - Habitat Protection Zone (Restrictions Apply)*
 - Habitat Protection Zone (No Anchoring & Restrictions Apply)*
 - Special Purpose Zone
 - Sanctuary Zone
 - Sanctuary Zone (Speed Restriction 4kn)

- Other Features**
- Line of Sight
 - Roads
 - Marine Park Boundary
 - National Park/Nature Reserve
 - Grey Nurse Shark Critical Habitat
 - Department of Defence (Salt Ash Air Weapons Range) Restricted Area
 - Navigation Facilities (Selected Areas Only)

ACTIVITY	General Use Zone	Habitat Protection Zone	Special Purpose Zone	Sanctuary Zone
WATER SPORTS (Seasonal)				
Life saving			X	X
Surfing			X	X
Canoeing			X	X
Water skiing, wind surfing, water skiing, speed			X	X
COMBOAT				
Recreational shell collecting			X	X
Canoeing for recreation, recreational and private			X	X
Recreational vessel collection			X	X
RECREATION				
Independent fishing			X	X
NON-RECREATIONAL RECREATIONAL ACTIVITIES				
Management of vessels			X	X
Public dining and drinking			X	X
Motorised watercraft			X	X
Recreational, animal and wastewater			X	X
Domesticated animals			X	X
SPORTS				
Life and speedfishing			X	X
Life line activities			X	X
OTHER ACTIVITIES				
Research			X	X
Archaeology			X	X
Commercial spearing or other activity			X	X
Research			X	X
COMMERCIAL / TOURISM ACTIVITIES				
Commercial fish harvesting			X	X
Charter fishing			X	X
Commercial (fisheries)			X	X
Fish and green harvesting			X	X
Beach watercraft activities			X	X
Life saving			X	X
Fish and water harvesting			X	X
Harvest gathering			X	X
Longline and trap fishing			X	X
Estuary crane netting			X	X
Estuary trap and net fishing			X	X
Cold and net fishing			X	X

- Activity labels symbols**
- 1 The Life Saving Zone is the only area of fishing permitted in the Life Saving Zone.
 - 2 The Life Saving Zone is the only area of fishing permitted in the Life Saving Zone.
 - 3 The Life Saving Zone is the only area of fishing permitted in the Life Saving Zone.
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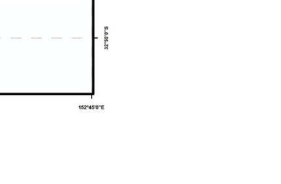
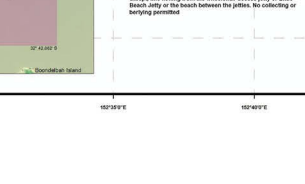
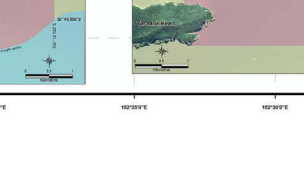
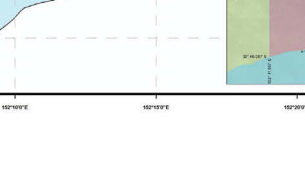
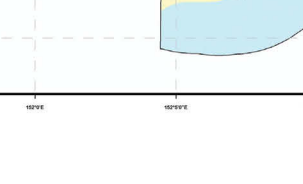
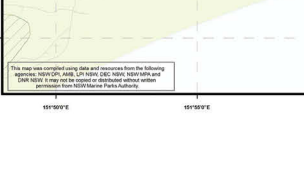
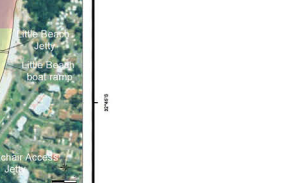
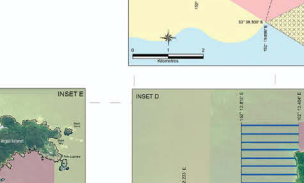
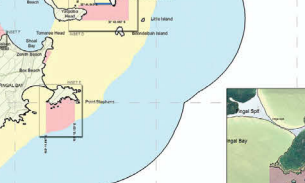
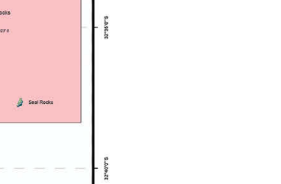
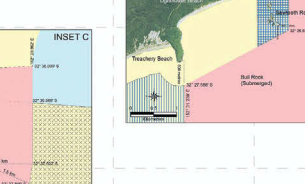
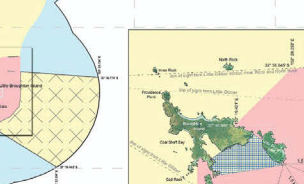
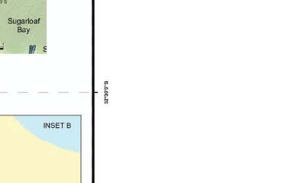
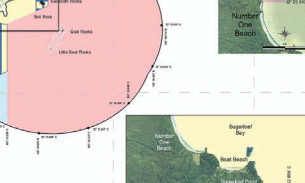
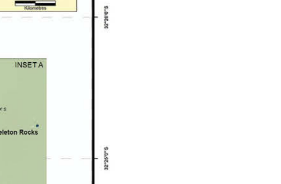
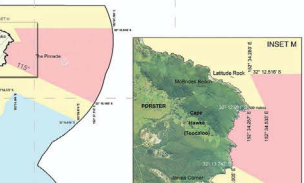
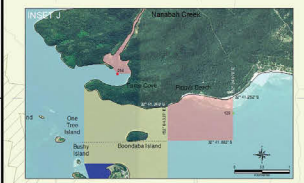
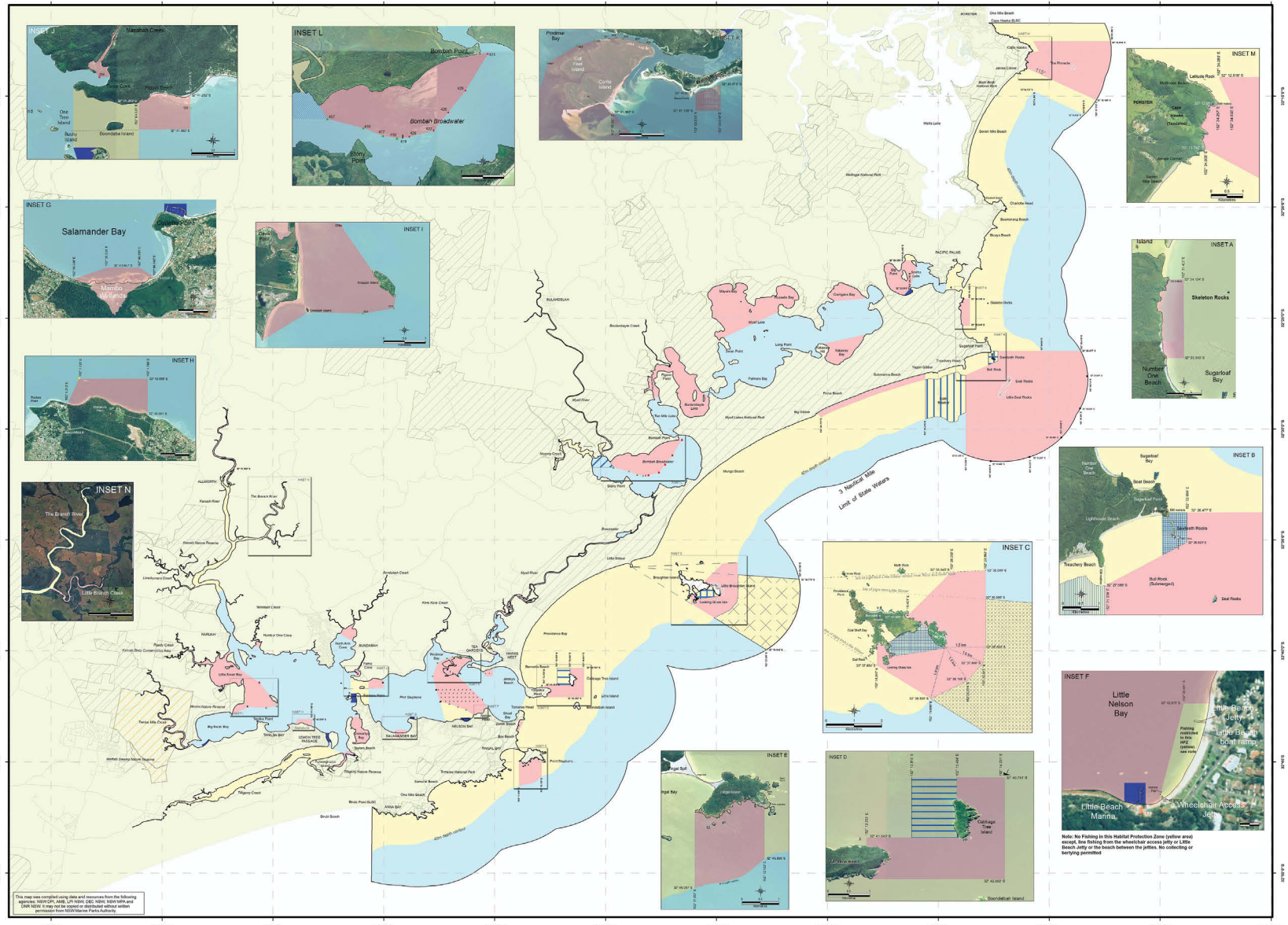
NOTICE TO MAP USERS

The purpose of this map is to help interpretation of the Marine Parks (Zoning) Plan (Zoning Plan) and details of this map are available from the map information system.

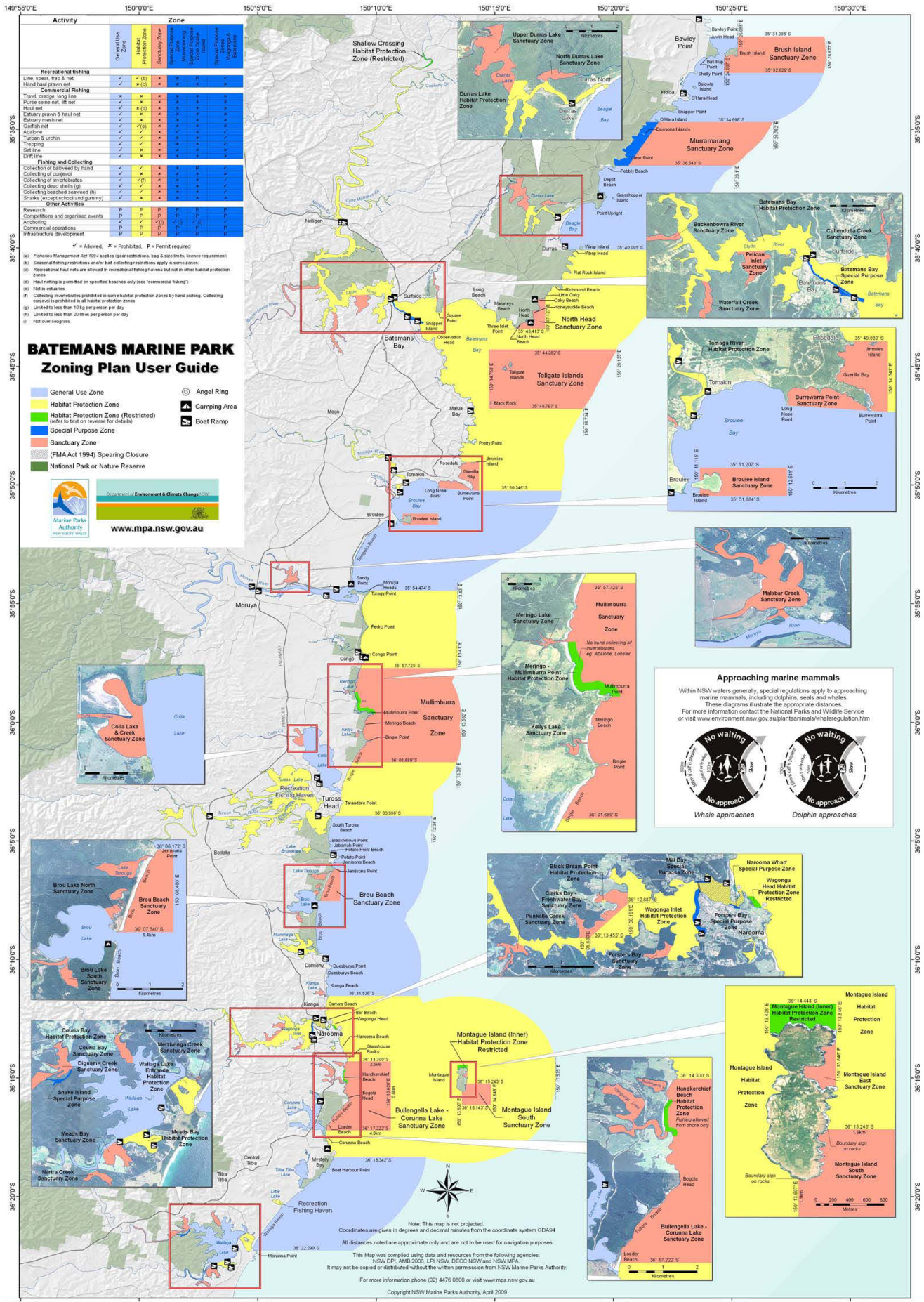
This map is not to be used for navigation. Commercial and recreational vessels should consult the relevant nautical charts and other publications available from the Hydrographic Office.

This map is available on-line and is updated by the Port Stephens-Great Lakes Marine Park Authority on a regular basis. The Port Stephens-Great Lakes Marine Park Authority will be responsible for any updates or corrections to this map.

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This map was compiled from data and information from the following sources: NSW DPI, Coast, 1:50,000 DEC Hydrographic Office, 1:50,000 NSW Department of Environment and Heritage, 1:50,000 NSW Marine Parks Authority, 1:50,000



Activity	General Use Zone		Habitat Protection Zone		Special Purpose Zone		Sanctuary Zone	
	Allowed	Prohibited	Allowed	Prohibited	Allowed	Prohibited	Allowed	Prohibited
Recreational fishing								
Line spear, top 5 net	✓	✗	✓	✗	✓	✗	✓	✗
Hand held prism net	✓	✗	✓	✗	✓	✗	✓	✗
Commercial fishing								
Trawl, dredge, long line	✗	✗	✗	✗	✗	✗	✗	✗
Purse seine net, 85 net	✗	✗	✗	✗	✗	✗	✗	✗
Hand net	✓	✗	✓	✗	✓	✗	✓	✗
Effluent prism & haul net	✓	✗	✓	✗	✓	✗	✓	✗
Effluent mesh net	✓	✗	✓	✗	✓	✗	✓	✗
Garfish net	✓	✗	✓	✗	✓	✗	✓	✗
Abalone	✓	✗	✓	✗	✓	✗	✓	✗
Turbot & urchin	✓	✗	✓	✗	✓	✗	✓	✗
Trapping	✓	✗	✓	✗	✓	✗	✓	✗
Silt line	✓	✗	✓	✗	✓	✗	✓	✗
Drift line	✓	✗	✓	✗	✓	✗	✓	✗
Fishing and Collecting								
Collecting of bivalves by hand	✓	✗	✓	✗	✓	✗	✓	✗
Collecting of crayfish	✓	✗	✓	✗	✓	✗	✓	✗
Collecting of invertebrates	✓	✗	✓	✗	✓	✗	✓	✗
Collecting of sea shells (S)	✓	✗	✓	✗	✓	✗	✓	✗
Collecting beached seaweed (H)	✓	✗	✓	✗	✓	✗	✓	✗
(Sharks except school and gummy)	✓	✗	✓	✗	✓	✗	✓	✗
Other Activities								
Research	P	P	P	P	P	P	P	P
Competitions and organised events	P	P	P	P	P	P	P	P
Anchoring	✓	✗	✓	✗	✓	✗	✓	✗
Commercial operations	P	P	P	P	P	P	P	P
Infrastructure development	P	P	P	P	P	P	P	P

- (A) Fisheries Management Act 1994 applies (see restrictions, bag & size limits, licence requirements)
- (B) Seasonal fishing restrictions and/or bait collecting restrictions apply in some zones.
- (C) Recreational hand nets are allowed in recreational fishing havens but not in other habitat protection zones.
- (D) Hand netting is permitted on specified beaches only (see 'commercial fishing').
- (E) Not in estuaries.
- (F) Collecting invertebrates prohibited in some habitat protection zones by hand picking. Collecting crayfish is prohibited in all habitat protection zones.
- (G) Limited to less than 10 kg per person per day.
- (H) Limited to less than 20 litres per person per day.
- (I) Not over seasaws.

BATEMANS MARINE PARK Zoning Plan User Guide

■ General Use Zone
■ Habitat Protection Zone
■ Habitat Protection Zone (Restricted) (refer to text on reverse for details)
■ Special Purpose Zone
■ Sanctuary Zone
■ (FMA Act 1994) Spawning Closure
■ National Park or Nature Reserve

○ Angel Ring
■ Camping Area
■ Boat Ramp

www.mpa.nsw.gov.au

Approaching marine mammals

Within NSW waters generally, special regulations apply to approaching marine mammals, including dolphins, seals and whales. These diagrams illustrate the appropriate distances. For more information contact the National Parks and Wildlife Service or visit www.environment.nsw.gov.au/plantsanimals/whaleenforcement.htm

Whale approaches

Dolphin approaches

Note: This map is not projected. Coordinates are given in degrees and decimal minutes from the coordinate system GDA94. All distances noted are approximate only and are not to be used for navigation purposes. This map was compiled using data and resources from the following agencies: NSW DPI, MMB 2006, LP, NSW, DECC, NSW and NSW MPA. It may not be copied or distributed without the written permission from NSW Marine Parks Authority. For more information phone (02) 4476 0600 or visit www.mpa.nsw.gov.au. Copyright NSW Marine Parks Authority, April 2009.

4.2 Methods

4.2.1 Document analysis

Research Question Two essentially seeks to test whether the perception of differing levels of community acceptance of each park is verifiable. One of the most direct measures of stakeholder sentiment or public controversy is the response of local communities to government consultation exercises. By comparing the responses to the marine parks in the PSGLMP and BMP it is possible to examine the perception that there were differences in the levels of community (particularly stakeholder) acceptance of each park.

There are two publically available sources of data on public submissions relating to the PSGLMP and BMP. Firstly, reports were published by the NSW Marine Parks Authority on the submissions received during the public consultation process for each marine park. While the actual submissions received remain confidential the reports outline some of the key messages the Marine Parks Authority received in planning the zoning of each park. They also contain basic information on numbers of submissions received and their origins. This information was compared between the two parks. Secondly, two major inquiries were undertaken into NSW marine parks during the study period both of which made the submissions it received available online (Parliament of NSW 2010b; Beeton et al. 2012). These submissions were used as informal reference points whereby key ideas and themes from the interview data were checked against the submissions to test for consistency across different data sources for the purposes of triangulation (see Section 6.2.3).

4.2.2 Regional Profiles

The development of a regional profile for each community provides a point of comparison of some key socio-economic and demographic traits, as well as the local history of each community. The study considered a range of dimensions relevant to the human environment as recommended in leading Social Impact Assessment guidelines (Interorganisational Committee on Guidelines and Principles 2003; Vanclay 2003; Bureau of Rural Sciences 2005). Table 4.1 contains an overview of the data requirements and data sources that were used to access the information required to build an effective regional profile (adapted from Interorganisational Committee on Guidelines and Principles 2003).

Table 4.1: Regional Profile data requirements and sources

Dimensions of human populations	Data requirement	Data source
Population characteristics	Demographics (population size, age, gender, household structure, socioeconomics)	ID population experts http://home.id.com.au / MPA socio-economic reports (Marine Parks Authority 2006b, 2006a)
	Current employment patterns	
Economic and financial background	Employment history	
Relationships with biophysical environment	Patterns of settlement/age profiles	Interviews
	Attitudes to environment	
History	Population shifts	ID population experts http://home.id.com.au
	Key development eras and events	Local libraries, oral history
Political and social resources	Distribution of age and ethnicity	ID population experts http://home.id.com.au
Culture	Trust in political and social institutions	Interviews

4.3 Regulatory and planning background

4.3.1 Marine park declaration and planning

The planning process for both parks provided a number of opportunities for stakeholders to have their say on the marine park proposals following (but not prior) to their announcement. These opportunities included advisory committees, stakeholder and public meetings, and written submissions (Voyer, Gladstone & Goodall 2012). Following the declaration of the PSGLMP and BMP a period of planning was undertaken for both parks during which zoning plans were developed in consultation with local communities. Unlike previous NSW marine park planning processes, which took several years, the zoning plans for the PSGLMP and BMP were developed over a relatively quick 18 month period (Banks & Skilleter 2010). Two formal periods of public consultation were conducted during the preparation of zoning plans beginning with the distribution of user surveys. These surveys were designed to gain an understanding of the different levels and types of use of the marine park. In addition large numbers of meetings were held with various stakeholders (Table 4.2). Based on the information obtained through these early planning stages a draft Zoning Plan was released for public comment on the 8 May 2006 in the PSGLMP and the 15 July 2006 in the BMP. The draft plans were then distributed throughout each community and neighbouring areas and a range of meetings held with various stakeholders. Public submissions closed on 23 September 2006 (PSGLMP) and the 15 October 2006 (BMP). The final plan for the PSGLMP was developed by the NSW Marine Parks Authority following completion of the public comment period and came into effect on the 21 April 2007. For the BMP, the final plan came into effect in June 2007 (Marine Parks Authority 2012a). The plans also included structural adjustment packages for professional fishers. These incorporated licence buybacks and retraining grants (Marine Parks Authority 2012b).

Table 4.2: Planning stages of the PSGLMP and BMP and community response

Planning stage	PSGLMP	BMP
Surveys distributed round 1	50000	40000
Stakeholder meetings round 1	62	63
Draft zoning plans distributed	43000	60000
Submissions received round 2	4399	4988
Stakeholder meetings round 2	75	98

The perception of differing levels of community acceptance of each park was tested by comparison of public submissions received during the planning processes of each park. Regardless of the views they expressed the act of making a submission can be inferred to mean a high level of interest in the marine park proposal. This analysis specifically focused on submissions received in the second period of public consultation in each park following the release of the draft zoning plan for comment. While the PSGLMP and BMP are relatively similar in size (98 000 ha and 85 000 ha respectively) the PSGLMP is located within a much more densely populated area (see Section 4.5). Given the larger population size of the PSGLMP area it would be reasonable to assume that there would be a greater response to the call for submissions on the marine park within this area. A chi-squared test was conducted to test the hypothesis that the number of submissions received was distributed according to the population size in each area. Expected values were calculated relative to each park's population size (Table 4.3). This comparison was made for the total submissions received in each park, as well as for only those submissions that indicated the respondent resided in the marine park area. The number of submissions received was not proportional to the relative population sizes of the two areas, with a much greater than expected number of submissions received in the BMP area, and a lower than expected number received in the PSGLMP area (Table 4.3).

Table 4.3: Population size of marine park area compared with the number of submissions received during the planning process, including the results of Chi square tests comparing the frequency of submissions on the two marine parks.

Submissions	PSGLMP		BMP		Total	χ^2	P-value
	Actual	Expected	Actual	Expected			
Population size*	69,031 (70%)		32,633 (30%)		101664		
Total number of submissions**	4399	6571	4988	2816	9387	2393.2	<0.0001
Number of submissions from marine park area**	2216	2540	1412	1088	3628	137.8	<0.0001

* (Powell & Chalmers 2005, 2006; Profile ID 2013)

** (Marine Parks Authority 2006c, 2006d)

Statistically significant difference

Chi squared tests were also conducted to test for significant differences between submissions from different geographical locations as noted in each submission report (Table 4.4). While submissions received from the Sydney metropolitan area are in line with the expected ratios, significant differences occurred for all other variables tested. In the PSGLMP a greater than expected number of submissions were received from the marine park area and from interstate/overseas. In the BMP planning process significantly more than expected numbers of submissions were received from neighbouring regions and other regional areas in NSW.

Table 4.4: Summary of actual and expected numbers of submissions according to geographical origin. Expected values were calculated relative to the proportion of total submissions received on each park (47% on PSGLMP and 53% on BMP). Also shown are the results of Chi square tests comparing the frequency of submissions from different geographical areas in the two marine parks.

Location of respondents	PSGLMP		BMP		Total	χ^2	P-value
	Actual	Expected	Actual	Expected			
Marine Park area	2216	1705	1412	1923	3628	288.938	<0.0001 [#]
Neighbouring region (ie BMP: Canberra area, PSGLMP: Central Coast & Swansea)	199	310	461	350	660	94.948	<0.0001 [#]
Sydney Metropolitan	787	782	877	882	1664	0.06	0.806
NSW (all other areas)	531	1055	1713	1189	2244	491.192	<0.0001 [#]
Other states and international	304	231	188	261	492	43.487	<0.0001 [#]
No post code given	362	310	297	349	659	16.470	<0.0001 [#]

[#] Statistically significant difference

People making submissions were requested to nominate their interests in the marine park from a range of categories (Marine Parks Authority 2006c, 2006d). Analysis was conducted on submissions aligned with particular interest groups such as conservation and fishing bodies. These interest groups ran campaigns in both parks urging people to make submissions. They assisted people in making submissions by providing them with alternative zone plans to endorse, or they provided form letters or petitions (Marine Parks Authority 2006c, 2006d). The success of these campaigns can be measured by the number of generated submissions. The BMP planning process attracted a significantly greater than expected number of submissions from the recreational fishing and charter fishing interest groups (Table 4.5). Recreational fishers dominated the BMP submissions, making up 81% of respondents. On the other hand the PSGLMP had a significantly larger number of respondents than the BMP respondents who nominated conservation and spearfishing as their main area of interest in the marine park.

Table 4.5: Summary of actual and expected numbers of submissions according to interest groups of respondents. Expected values were calculated relative to the proportion of total submissions received on each park (47% on PSGLMP and 53% on BMP). Also shown are the results of Chi square tests comparing the frequency of submissions from different interest groups in the two marine parks.

Main interest in marine park	PSGLMP		BMP		Total	χ^2	P-value
	Actual	Expected	Actual	Expected			
Recreational fishing	2282	2980	4059	3361	6341	308.449	<0.0001 [#]
Conservation	2010	1455	1085	1640	3095	399.521	<0.0001 [#]
Scuba diving	487	509	596	574	1083	1.796	0.1802
Spearfishing	842	596	427	673	1269	191.457	<0.0001 [#]
Charter fishing	114	234	383	263	497	116.291	<0.0001 [#]
Personal watercraft/motorised water sports	262	267	307	302	569	0.176	0.6745
Professional fishing	126	113	114	127	240	2.826	0.0927
Aquaculture	95	89	94	100	189	0.764	0.3819
Other	474	464	513	523	987	0.407	0.5236

Statistically significant difference

Note: the sum of the interests exceeds the total number of submissions as people were able to allocate more than one area of interest

In order to test whether these results translated into the dominance of any particular messages within the submissions further analysis was conducted into the key findings of the reports. Of particular note is the dominance of two conflicting sectoral interest groups. In the PSGLMP note was made of the number of submissions received from individuals referring to an alternative zoning plan developed by conservation groups which called for an increase in protection through Sanctuary Zones. A total of 1203 submissions (27.35% total submissions) referenced this alternative plan compared with a similar plan in BMP that was referenced in 15% submissions (see Table 4.6). In contrast the BMP was heavily dominated by submissions received by recreational fishers, represented by the prevalence of two form letters circulated by fishing bodies. These comprised 71% of the total submissions received and called for a decrease or complete removal of some or all sanctuary zones. No comparable form letter was mentioned within the PSGLMP report. The BMP submission report notes that the names and addresses of the second form letter appeared to be a single recognisable handwriting style. This was confirmed by one of the BMP interview participants who filled out a large number of submissions on behalf of friends and family.

I put in 185 submissions, I rang all my friends and asked them do you mind? And I filled in their names and all their details and I told them what I was putting in and asked them if they were happy with that and they said yep. I just grabbed submission forms, my grandson even put one in because the idiots didn't put an age on it. It didn't say you have to be over a certain age.

BMP recreational fisher

Table 4.6: Summary of actual and expected numbers of submissions generated by sectoral interests groups. Expected values were calculated relative to the proportion of total submissions received on each park (47% on PSGLMP and 53% on BMP). Also shown are the results of Chi square tests comparing the frequency of submissions generated by sectoral interest groups across the two parks.

Main interest in marine park	PSGLMP		BMP		Total	χ^2	P-value
	Actual	Expected	Actual	Expected			
Conservation group alternative zone plan	1203	909	731	1025	1934	179.417	<0.0001 [#]
Fishing body supporting a decrease or complete removal of sanctuary zones (form letters combined total)	Unknown		3519				

The main body of comments assessed in each submission report are not directly comparable as they deal with the specific details and locations of each zone plan. The reports do, however, include comments that were made on the plan in its entirety. As demonstrated in Table 4.7 the numbers of submissions commenting on the plan as a whole are relatively low in the PSGLMP while quite high in the BMP, where 3849 submissions (mostly form letters) indicated they supported a decrease or complete removal of all Sanctuary Zones within the park and 844 called for an increase in all Sanctuary Zones. This suggests that the submissions received in the PSGLMP were targeted at specific aspects of the draft zoning plan. In the BMP there seemed a much more vigorous debate about the value of the park (or more specifically its Sanctuary Zone components) in its entirety. Those opposed called for the complete removal of Sanctuary Zones and those in favour called for their expansion. These results should be treated with caution, however, given they could be due to inconsistencies in data analysis across the two parks.

Table 4.7: Frequency of comments relating to all zones in the draft marine park zoning plans in the PSGLMP and BMP

Issues and comments in regards to "All zones" of the draft plans	PSGLMP	BMP
Disagree: prefer a decrease or removal of all Sanctuary Zones	unknown	3849
Disagree: prefer an increase in all Sanctuary Zones	64	844
Agree with all zones as drafted	96	79
Disagree (other)	73	52

4.3.2 Regulatory context – professional fishing

The PSGLMP is entirely within the Manning Shelf Bioregion, which extends from north of the Hunter River to Nambucca Heads, on the mid north coast of NSW. This Bioregion incorporates Ocean Zone 5 and Estuary Region 4 professional fishing areas. An assessment of professional fishing conducted in 2006 as part of the planning process for zoning the PSGLMP found that 430 professional fishing businesses were operating within these zones (Table 4.8). The majority of these businesses held

licences in the Estuary General sector and this was the most valuable fishing sector followed by ocean prawn trawl and lobster (Marine Parks Authority 2006a).

The BMP is entirely within the Batemans Bay/Two-fold Shelf Marine Bioregion, which extends from Shellharbour south of Wollongong to the Victorian border. The BMP makes up less than 30% of the bioregion (Marine Parks Authority 2006a). An assessment of professional fishing conducted in 2006 as part of the planning process for zoning the BMP found that 334 professional fishing businesses were operating within the Marine Bioregion (Table 4.8). The majority of these businesses held licences in the Estuary General sector. The most valuable fishing sector at the time was the abalone industry followed by ocean hauling and estuary general sectors.

Table 4.8: Total Ocean Zone 5 and Estuary Region 4 (PSGLMP) 2002/03 and Batemans Bay/Two-fold Shelf Marine Bioregion professional fishery value 2004/05 (From Marine Parks Authority 2006a; Powell & Chalmers 2006)

Fishery	Fishing Businesses (Number)		Catch (Tonnes)		Catch Value (\$)	
	PSGLMP	BMP	PSGLMP	BMP	PSGLMP	BMP
Estuary General	220	133	1649	431	5,505,357	2,026,247
Fish Trawl	26	23	267	304	931,132	1,059,225
Ocean hauling	45	18	596	1,199	1,328,699	2,429,388
Ocean Prawn Trawl	48	2	183	1.4	1,795,081	24,419
Ocean Trap & Line	59	70	125	212	621,052	970,739
Abalone	n/a	61	n/a	78	n/a	3,102,360
Lobster	32	27	31	28	1,422,162	1,027,390
Total	430	334	2851	2,254	11,603,485	10,639,768

While overall the PSGLMP area was utilised by a greater number of fishing businesses and produced higher catch totals the value of the catch from the PSGLMP area was largely in line with the BMP. This indicates the significant value of the abalone industry which contributed more than three million dollars in catch value to the BMP area.

4.3.2.1 Estuary general

The estuary general fishery is a diverse sector conducted in NSW estuaries using a variety of gear types and targeting a range of species. The estuary general sector incorporates all forms of estuary fishing apart from estuary prawn trawl and includes meshing, hauling, trapping and some handlining and hand gathering (Marine Parks Authority 2006a; Department of Primary Industries 2012b). Target species include mullet, luderick, bream, flathead, whiting and crabs.

In 2003 the estuary general fishery was the most significant fishery in the Manning bioregion in terms of the number of businesses licenced to fish in this sector. It was also responsible for the highest catch rates in kilograms and in value. In the Batemans Bay/Two-fold Shelf Marine Bioregion the

estuary general fishery was the most significant fishery in terms of the number of businesses licenced to fish in this sector, and 2005 data reveals it was also responsible for the third highest catch rates and value (Marine Parks Authority 2006a, 2006b).

Leading up to the declaration of the PSGLMP and BMP the estuary general sector had undergone significant changes to its management. In 2002 the sector was zoned into seven regions accompanied by the introduction of nine different share allocations within each zone. These related to different fishing methods and species, such as haul, prawn or trap. In order to participate fishers were required to hold an endorsement for that share class in the region in which they wished to fish. Limits were placed on the number of shares required to hold an endorsement and shares were allocated according to a range of criteria including past catch records (Department of Primary Industries 2012b). As a result of the introduction of share allocation fishers who operated mostly within the now PSGLMP area were largely limited to what became Region Four (depending on the endorsements they held), which extends from Taree to the Central Coast. Similarly fishers who fished primarily in the BMP area were restricted to Region Seven which extends from just south of Ulladulla to the Victorian border (Department of Primary Industries 2012b).

In addition to restructures within the fishery the estuary general sector was also impacted by the

introduction of a series of recreational fishing havens along the NSW coast (Momtaz & Gladstone 2008). In total 30 havens were introduced in NSW rivers, lakes and estuaries and involved a complete removal of professional fishing for the purposes of providing recreational fishers with improved angling opportunities (Department of Primary Industries 2012c).

Two of these havens are located in Region Four - in the Manning River and Lake Macquarie. Neither were within the PSGLMP boundaries. Nearly half of the havens, however, are located in Region Seven. Five are within what is now the BMP including Tuross Lake, a significant estuary within the region (Figure 4.4).

During the planning of the BMP a decision was made that no recreational fishing haven would contain Sanctuary Zones (Sportsfish 2006). This meant estuarine Sanctuary Zones were concentrated in those areas which had remained open to



Figure 4.4: Recreational fishing havens in NSW (Department of Primary Industries 2012c)

professional fishing and further restricted the fishing grounds in Region Seven available to estuary general fishers.

4.3.2.2 Abalone & Lobster

Abalone diving and lobster trapping are significant industries on the south coast in terms of numbers of business (61 for abalone and 27 for lobster) and catch value (Table 4.8). Catch data from 2005 indicate that abalone was the most valuable fishery in the BMP area leading up to the declaration of the marine park. The majority of the NSW abalone catch is sourced from within the Batemans Bay/Two-fold Shelf bioregion and is a share managed fishery. Lobster was a significant fishery in the Manning Bioregion in the lead up to the declaration of the PSGLMP. Lobster is also a share managed fishery and the amount of allowable catch for both industries is set every year by an independent body. This quota is then distributed proportionally to all shareholders.

4.3.2.3 Ocean Haul

The ocean haul sector uses professional hauling and purse seine nets to target approximately twenty finfish species from sea beaches and in ocean waters. These species include sea mullet, luderick, yellowtail scad, blue mackerel, pilchards and sea garfish. In 2005, when the parks were announced the ocean haul accounted for 11% of the value of seafood product coming out of the Manning Shelf Bioregion and 10% in the Batemans/Bay Two-fold Bioregion. This referred to 45 licence holders in the former and 18 in the latter (Marine Parks Authority 2006a, 2006b). At the time the sector was moving towards share management arrangements, a process that was completed in 2007 along similar lines to the estuary general sector. The ocean haul fishery has five separate endorsements (general ocean net, general haul net, garfish, anchovy and pilchard, and purse seine net) and is also subject to weekend closures, meaning hauling is not permitted on the weekends.

4.3.2.4 Ocean fish trawl and ocean prawn trawl

The NSW ocean trawl fishery incorporates both the fish and prawn trawl sectors. Both use similar equipment to target school whiting, prawns, flathead, trevally and various other species (Department of Primary Industries 2012b). The ocean trawl fishery was significant in the lead up to the PSGLMP, with 26 fish trawl and 48 prawn trawl licence holders in the area bringing in significant catch returns (Table 4.8). By way of contrast the ocean prawn trawl fishery had only two businesses operating in the Batemans Bay/Two-fold Bioregion area in 2005. They conducted fishing predominately at Long Beach, Batemans Bay using otter trawl techniques to target school prawns (Hropic 2011). Fish trawl operations for the entire bioregion numbered 23 businesses in 2005. After the BMP was introduced all forms of trawling were removed from the park boundaries.

4.3.2.5 *Ocean trap and line*

The Ocean Trap and Line fishery is a multi-method fishery that targets a variety of demersal and pelagic fish including snapper, kingfish, bonito and trevally. Methods include fish traps, set lines, hand lines and trolling. In 2005 there were 59 business in the Manning Shelf Bioregion and 70 businesses within the Batemans Bay/Two-fold Bioregion. The fishery is a restricted fishery subject to share management.

4.3.3 *Political context*

The declaration and planning associated with each marine park was conducted during the lead up to the March 2007 state government election. The parks were significant election issues in the relevant electorates at that time and then again in the following state election in 2011. Opposition to the BMP continues to this day and many of the key opponents of the BMP have remained engaged in actively lobbying the State government for the overturning or review of the zoning plans.

Significant changes to marine park management in NSW have occurred since the commencement of this thesis. A parliamentary inquiry into recreational fishing in 2010 recommended delaying future MPA declarations in NSW while further research was undertaken, as well as allowing some forms of fishing within established Sanctuary (no-take) zones (Parliament of NSW 2010a, 2010b). 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 (Gay 2009). Numerous web pages, sites, blogs and forums critical of NSW marine parks, or at least of their no-take components, also emerged in the lead up to the 2011 state election (Ecofishers ; Gay 2009; The outdoor loving people of Australia 2010). The ruling NSW Labor party was soundly defeated at this election (Australian Broadcasting Corporation 2011) and almost immediately the new government implemented significant changes to marine park management in NSW. This included the transfer of responsibility for the management of the parks from the Environment portfolio to the Primary Industries (incorporating Fisheries) portfolio. The new Government also announced a moratorium on new marine park declarations and any changes to existing marine parks for five years and the reversal of a number of decisions made by the previous Government. These included 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 included the need for further public consultation and improved scientific research (Hodgkinson & Parker 2011; Hodgkinson MP 2011).

In 2011 the government announced an Independent Scientific Audit of NSW Marine Parks. Its findings were released in January 2012. The audit took large numbers of submissions from interested parties and held public hearings as well as undertaking a comprehensive review of the scientific literature around NSW marine parks and MPAs in general. It recommended some substantial changes to marine park management in NSW including the adoption of a more inclusive spatial

management approach to marine estate management and the better integration of socio-economic considerations into marine park planning (Beeton et al. 2012).

In March 2013 the NSW Government responded with the replacement of the Marine Park Authority with the NSW Marine Estate Management Authority. Its remit is to guide management of the entire NSW marine estate including marine parks (NSW Government 2013). Controversially they also issued an amnesty over line fishing from all coastal beaches and headlands within NSW marine park Sanctuary Zones, effectively allowing recreational fishing in these Sanctuary Zones. Furthermore as part of the package of reforms a review of the BMP zoning plans was announced ahead of the statutory reviews of other marine parks which were significantly delayed by the introduction of the moratorium (Gorton 2013). This announcement is likely to have been a concession to the intensive lobbying of BMP recreational fishers subsequent to the release of the audit report (*research participants pers. comm*).

4.4 History of the Port Stephens area

4.4.1 Indigenous history

The Worimi Nation stretches from the Myall Lakes to the Hunter River, taking in the majority of the coast contained within the PSGMLP. Seafood was an extremely important component of the Worimi diet and consisted of oysters, fish and lobster, with bark canoes used to move around Port Stephens in search of food. At the time of white settlement there were about 400 members of the Worimi tribe living around the estuary of Port Stephens (Bennett 1929; Armstrong 1989). William Scott, a child of an employee of the Australian Agricultural Company, lived in the Carrington area from his birth in 1844 until 1873. In his adult years he recorded many observations of the Worimi people whom he had lived alongside. These records indicate the importance of fishing in the lifestyles and social structures of the clan as well as their ceremonial practices. For example, some women went through a ceremony which involved the removal of a section of one finger, which was then committed to the waters of the bay, with the belief that fish would then be attracted to the hand from which the finger had come. This woman was then responsible for making the fishing lines for the remainder of the clan (Bennett 1929). The process by which this ceremony was conducted was described in the interviews associated within this research project by one of the Indigenous participants:

The Worimi tribes in Port Stephens practiced the Aboriginal custom of fingertip removal known as Malgaan – it was an operation where one particular child, a girl, would be designated as a fisher, and they would get some twine out of the bush and they'd put it around the first joint of little finger on the left hand and they would leave it and let it mortify and when it dropped off they'd pick up the mortified finger, take it out into the bay as an offering to the fish and the belief was that the fish would eat this part of the girls finger, and would ever, thereafter be attracted to the rest of the hand from which it come. So there was a connection, and this was practiced...

Indigenous fisher, PSGMLP

Bennet also recorded the practices the local Indigenous fishers employed to secure fish, lobsters and oysters, including their practice of fashioning fishing line from the bark of the kurrajong tree, hooks from shells, and spears from timber and flower stems (Bennett 1929; Clarke 2011). The women were responsible for line fishing and diving for lobsters while the men were chiefly responsible for spearing and were particularly proficient at this activity during the annual migration of mullet along the northern shore of Port Stephens:

By some uneering (sic) instinct the blacks knew to within a day when the first of the great shoals would appear through the heads. The women would be on the lookout for the shining, shimmering mass of fish to come round some wooded headland and when their shrill outcries told of the approach of their finny prey, the men would rush to the shore. (Bennett 1929, p. 19)

Despite widespread dispossession from their lands Aboriginal people from NSW made a number of attempts to secure tenure over sections of their country in the late 19th century. Many of the reserves established for Aboriginal people in the latter part of the 19th century were in response to their demand for land and in many cases were selected by Aboriginal people themselves, chosen for economic as much as cultural or subsistence reasons (Goodall 1996; Inkpin 2011). In 1873 Aboriginal people were granted 'permissive occupancy' over a coastal reserve in Nelson Bay (on the foreshore of the Port Stephens estuary, within the current boundaries of the PSGLMP), and again in 1905 over a reserve in Karuah (on the banks of the Karuah River that drains into the western portion of Port Stephens). It is likely that the proximity to important fishing ground was a factor driving Worimi attempts to secure these sections of coast (Goodall 1996).

While many NSW reserves were established by the Government's Aboriginal Protection Board (APB) to formalise existing encampments of Aboriginal people, this formalisation process often meant that these communities came increasingly under the control and influence of the Board (Goodall 1996). The reserve in Karuah was the early focus of the newly established Australian Inland Mission in the early 1900s, which worked in partnership with the APB. Missionaries from the group lived and worked within the reserve, employing Aboriginal people as 'native workers' to assist the AIM in its evangelical work (Inkpin 2011). From 1909 government policy increasingly involved the segregation of Aboriginal people and the assimilation of mixed race children into the European way of life, often involving the forced removal of light skinned children. Aboriginal children were often excluded from public schools, including in Karuah (Goodall 1996; Inkpin 2011). In response to this the AIM took on a role of educating the children of the Karuah mission as explained by one of the participants in this research project:

I come from the Karuah mission, we had to go to that school on the mission, it was called a mission because there were missionaries involved in the communities, mission because it was AIM – Aborigine's Inland Mission. There would have been probably 100 people living on the mission and there probably would have been about 15-20 children going to the school at the time and our schooling only went to 6th grade primary education. The Aboriginal school opened in 1914 and it closed in 1954, so it was operating for some 40 years and the reason

they had an Aboriginal school on the community is... the non-Aboriginal people in Karuah said if those Aboriginal children come to our school then we are going to pull all our non-Aboriginal people out of the school.

Indigenous fisher - PSGLMP

The presence of a school in the mission and exclusion of Aboriginal children from white schools meant that for many families moving to APB reserves was the only option available if they wished to secure an education for their children. This brought more Aboriginal people under the control of the APB (Goodall 1996; Inkpin 2011). To its credit the AIM argued against the segregation of schooling in Karuah and its presence on reserves such as this was often sympathetic to Aboriginal needs. Their enthusiasm for evangelism and their belief in the superiority of European way of life, however, also assisted in the erosion of Aboriginal language and culture (Inkpin 2011). In addition, permissive occupancy provided no security of tenure and left Aboriginal reserves at the mercy of Government whims (Goodall 1996). The Nelson Bay reserve is no longer in existence but the Karuah reserve continues to exist, run by the Karuah Aboriginal Land Council. However the lack of security of ownership remains a concern for some residents:

All we've got here is a 99 year lease, that's all we've got, we don't own this land - a 99 year lease, \$1 it cost us, so who's in front the Government or the Aboriginal people? ...We own the land, we own it, our ancestors own it, but we don't own nothing...they can come here at anytime and take it off us.

Indigenous fisher - PSGLMP

For Aboriginal people in the Port Stephens area their connection to fishing and seafood has been tested but not broken by these successive interventions that included dispossession from their land. Seafood has remained a crucial part of the Aboriginal diet and many of the Worimi people remained connected to their 'sea country' throughout the 20th century through employment in the oyster industry, as professional fishers or as boat builders (Department of Environment & Climate Change 2007; Sutherland 2011; NSW Office of Environment and Heritage 2012). This was confirmed through the interviews conducted as part of this research where close to all the Indigenous fishers interviewed had a connection to one of these maritime occupations either directly or through their parents or grandparents:

I've lived here around the Port all my life, I used to travel from work in little launches up from Karuah, (I) worked for the biggest oyster farmer in the world.... When he started oyster farming all the Aboriginals started him off, a few of our uncles, down at Pindimar, then around to Bundabah then finished up on a bit of land in Oyster Cove and that's where we started. I did 27 years straight for the Phillips up there and I had one holiday in 27 years.

Indigenous fisher – PSGLMP

4.4.2 Colonisation and European history

Port Stephens was first observed in modern historical records by Captain James Cook in 1770 who named the area after his personal friend Sir Philip Stephens (Armstrong 1989; Wikipedia 2012). There is some suggestion that Cook's records of the Port prompted Arthur Phillip to consider it as a possible alternative site for the first settlement when Botany Bay was determined to be unsuitable. However, Sydney Harbour was discovered and established without the need to explore further north (Armstrong & Morrison 2006).

The area was not explored by European settlers until 1791 when the *Salamander*, a ship from the third fleet, entered the port. The township of Nelson Bay was initially merely a stop for ships to gather fresh water from a well but grew into a small township over time. The new colony began to move into the Port Stephens area in the early 1800s when the Australian Agricultural Company established a large sheep grazing station on the northern shore of the Port. While the land was discovered to be unsuitable for wool growing the station established the bay's credentials as a valuable port (Armstrong 1989). Around the same time a garrison of soldiers was established at what is now Soldiers Point in response to the popularity of the area amongst escaped convicts (Armstrong 1989; Wikipedia 2012).

Fishing played a crucial role in the development of the colonial towns around Port Stephens. The earliest records of professional fishing in Port Stephens are from 1880 when a 'Commission into the Fisheries of the Colony of New South Wales' indicated the area has 'an apparently unlimited endowment of the best fish' (Clarke 2011). The Commission noted that the Chinese dominated the early fishing efforts in this part of the colony where they fished for snapper, garfish, salmon and lobster which they often cured and exported. The Chinese also fished for abalone (or mutton fish) and its value as a Chinese delicacy soon secured the growth of a profitable industry (Clarke 2011). The lack of any means to adequately store the fish for transport to Sydney markets constrained the development of the professional fishing industry in Port Stephens until 1881 when the NSW Fish Company established itself in Nelson Bay to handle fish and provide ice, however this venture was to close after just a few years in operation due to poor communications systems with its markets (Armstrong & Morrison 2006; Clarke 2011). In 1927 a professional shark fishing operation in the Port produced leather, oil, meat and fins however it too closed after just six years in operation (Armstrong & Morrison 2006). The depression years saw an influx of people and fishing was often an essential means of survival during these lean years (Armstrong & Morrison 2006).

From very early on Nelson Bay was a popular tourist attraction. As early as 1894 expeditions of holiday makers regularly took the two day journey from Sydney for relaxation and fishing excursions (Armstrong & Morrison 2006; Clarke 2011). In the 1930s a gamefishing club was established with some of its founding members responsible for constructing a number of roads in the district in order to access fishing grounds and their newly established clubhouse (Armstrong & Morrison 2006).

Preceding the Second World War Nelson Bay consisted of less than 200 residents most of whom were associated with the fishing industry. During the war Nelson Bay was used as an amphibious landing training base for Australian and American forces and a garrison was established to guard the entrance. This resulted in the construction of numerous roads (Armstrong 1989; Armstrong & Morrison 2006) which led to an influx of visitors and new residents including refugees and migrants who were housed in the naval centre and army base. Since that time the Port area has expanded rapidly particularly with upgrades to the roads, as well as the construction of marinas and a boat harbour. The discovery of a permanent population of approximately 160 bottlenose dolphins in the Port led to the development of dolphin watching - augmented by whale watching. This is now a big industry which attracts large numbers of tourists each year (Armstrong & Morrison 2006).

The history of Port Stephens is littered with examples of serious consideration of the area as a major deep sea port, naval and submarine base, oil refinery, steelworks and, in more recent times, a pearl farm (Armstrong 1989). In the 1970s attempts were made by the Port Stephens Council to industrialise the old naval base by seeking interest from companies to establish developments including an oil refinery, steel works and a coal loading complex. These were opposed by local residents and were eventually abandoned in favour of increased residential development in the area (Armstrong 1989). Since that time other environmental disputes in the area have focused on upstream development and mining in the catchment as well as a large scale pearl farm that was proposed within the Port itself and strongly opposed by sections of the Port Stephens community.

The growth of the townships surrounding Port Stephens have largely come on the back of fishing, and tourism industries as well as the popularity of the area as a retirement destination. The Lakes District to the north of the harbour experienced commercial success through the timber industry (Armstrong & Morrison 2006). Fishing remains an important aspect of the Port's history and its economy. Annual gamefishing and trailer boat fishing tournaments attract large numbers of entrants every year. The area also is the home port of a large number of charter fishing companies (22 businesses in 2006), and the area is a popular tourist destination for recreational fishers (Marine Parks Authority 2006b). A recreational fishing survey released in 2003 indicated that the Hunter Region, including Port Stephens, had a recreational fishing participation rate of 25.2%, compared with a state average of 17.1% and a national average of 19.5% (Henry & Lyle 2003).

4.5 History of the Eurobodalla area

4.5.1 *Indigenous history*

The Yuin Aboriginal Nation stretches along the south coast of NSW from the Shoalhaven River to the Victorian border and incorporates several language groups. The Walbanga and Djiringani people lived within the country incorporated into the BMP (Waddell 2010). The south coast of NSW was traditionally occupied by Indigenous people on what appears to at least initially have been a sporadic or seasonal basis. In more recent history (from around 5000 BP) archaeological evidence suggests more consistent and regular use following sea level stabilisation and the emergence of tidal lagoons

and rock platforms that allowed for Aboriginal exploitation of abundant marine resources (Nicholson & Cane 1994; Waddell 2010). Seafood was used for both subsistence and trade by the Indigenous people of this area with many middens offering evidence of the role shellfish played in the traditional diet. Abalone –otherwise known as walkun or mutton fish – was a staple part of the diet as it was easily accessible, and able to be prised off the rocks at low tide. Pipis, mussels and lobster were also regular parts of the Aboriginal diet (Cruse, Stewart & Norman 2005). From around 1500 BP Aboriginal people appeared to develop a range of fishing technologies including fish hooks, nets and fish traps that led to finfish playing an increased role in the Aboriginal diet (Nicholson & Cane 1994; Bennett 2007; Waddell 2010).

With the arrival of European settlers a number of recordings were made of the fishing practices of Aboriginal people in the area. In the first half of the 19th century the majority of the historical observations of the south coast Aboriginal community related in some way to fishing. Aboriginal people were able to use their superior knowledge of fishing to conduct trade with Europeans, exchanging fish for flour, tea or sugar (Bennett 2007). On occasions they were also employed as labour in the farming, timber or quarry industries (Bennett 2007; Dale Donaldson 2008).

After 1850 the government, through the APB, began to supply many Aboriginal communities on the south coast with boats, the majority of which were used for fishing purposes, including professional fishing. In 1872 three senior men from the Bodalla region were granted 'permissive occupancy' of lands around the entrances of Tuross and Birroul Lakes after they made requests to local officials for secure land tenure. The lack of security of tenure attached to 'permissive occupancy' over what remained crown land led the men to persist in their demands and the lands were finally registered as Aboriginal reserves in 1878 (Goodall 1996). A similar reserve was granted to local Aboriginal people in Batemans Bay after they had reoccupied a portion of land for use as a residential base for their fishing activities. This reserve came under increasing pressure in the early half of the 20th century as the expansion of the township of Batemans Bay caused the reserve to be of interest for urban development. Several attempts by the local Progress Association and the APB to revoke the Batemans Bay reserve spanned nearly ten years. Tactics included establishing an alternative reserve, issuing removal orders and excluding Aboriginal children from the local public school. These tactics were not successful and the Aboriginal people of Batemans Bay remained on their land. Similar reserves to the north (Ulladulla) and south (Moruya) however were not so lucky (Goodall 1996).

Until the commencement of truck transportation in the 1930s the south coast was largely seen as an 'underexploited' fishery. With the exception of oysters Indigenous fishers experienced little competition from European fishermen (Bennett 2007). A notable exception occurred in Jervis Bay in the 1920s when school segregation was used to force Aboriginal people to move to a reserve at Wreck Bay – a policy initiated in response to pressure from white fishers in the area who resented the competition from Aboriginal fishers (Goodall 1996). In addition muttonfish, or abalone, sparked the interest of many Chinese settlers given its popularity as a delicacy in China. They established trade centres to supply Chinese miners working in the goldfields. Aboriginal people were employed to

collect and dry the abalone for these traders and worked with the Chinese all along the south coast throughout the latter half of the century and into the 20th century (Cruse, Stewart & Norman 2005). During the 1960s the popularity of abalone increased with the opening up of a professional market. Many Aboriginal people got involved in the industry, diving for abalone and selling them to traders or directly through the fish markets. A number of changes occurred to abalone management as interest in the fishery grew, including the introduction of licences in 1980 and eventually movement into share management (Department of Primary Industries 2012b). Aboriginal people who had not kept records of their catches or could not produce evidence of consistent historical involvement in the fishery missed out on these early licences, excluding many from the industry (Cruse, Stewart & Norman 2005), as explained by one of this project's research participants:

We've lost our endorsements on the lobsters that we dived for we was always lobster fishermen and abalone...

Q So they bought you out of them?

No we refused to go and we was forced out on history as criteria, the criteria we had they say we never had enough criteria to stay in the industry but the thing is we always diversified in our industry. Diversified - that means in one time of the year we'd be catching lobsters, or prawns, and fish and river work the whole thing and in all those criteria that we had we had a sustainable fishery, we had a very sustainable fishery, because we never depleted the lobsters, we never hit them that hard that we could deplete them or the salmon or the whiting, we diversified in them and because of that we lost out on the lobsters the abalone and there were a lot, the hand gathering, a hell of a lot of the fishery we missed out on.

Indigenous professional fisher

The growing popularity and value of abalone also led to the introduction of recreational size and bag limits, which currently limit possession to two abalone over 11.7 cm in diameter (Department of Primary Industries 2012c). This caused great anger within the Aboriginal community who believed these rules discriminated against their cultural rights to continue to practice their traditional fishing as well as limiting access to an important part of their diet (Cruse, Stewart & Norman 2005). Since 1991 south coast Indigenous fishers have repeatedly been involved in court cases in which they seek to defend their rights to access abalone (Cruse, Stewart & Norman 2005). Many have been prosecuted for illegally harvesting excess numbers of abalone and a number have been imprisoned for their involvement in abalone poaching, as described by one of the project's research participants:

The laws have changed so that if we practice us what our grandfather taught us, we'd all end up in gaol and a lot of my relations are ending up in gaol, my brother in law will probably do anywhere from about 2-5 years for diving, he's going to court soon and that just breaks my heart, so what do you do? Do you just keep going to gaol, going to court?

Indigenous cultural fisher

A long tradition of employment in the fishing industry amongst Aboriginal people on the south coast continues to this day with many of the Indigenous fishers interviewed for this research indicating a family history associated with activities on or around the water (also see Dale Donaldson 2008):

There are five generations of fishermen in my family, I've been a fisherman since I was 15, it's always been a part of my life, I just love it - I can go out in the morning throw a net get the fish back in and take them to the truck then come back down to the beach and just sit and watch the water for a while and before you know it it's 5 pm, you just blend in, it's your country, you just feel relaxed and comfortable. I can't imagine doing anything else. I will die a fisherman.

Indigenous professional fisher

In addition to employment the coast is an important spiritual place for Aboriginal people on the south coast as well as a meeting place, a source of food and a source of fun and enjoyment. For example, Christmas camps were a common part of life for Aboriginal people who lived along the entire NSW coast during the twentieth century. Christmas camps, in places like Mystery Bay within the BMP, were places where Aboriginal people could escape the restrictions of life on Government or missionary controlled reserves. Entire communities would camp together on the beach for weeks at a time, allowing Aboriginal people of all ages to enjoy the coastal environment. These times are remembered fondly as times of fun, freedom and reconnection with kin in the oral histories of Aboriginal men and women on the south coast, and throughout NSW (Dale Donaldson 2006; Kijas 2009; NSW Office of Environment and Heritage 2012).

4.5.2 Colonisation and European history

Historically settlement on the south coast of NSW developed out of mining, quarrying and transportation interests. However the bulk of its growth occurred on the back of three major primary production industries; fishing, forestry and the dairy industry. Europeans first began settlements in the area in 1828 on the banks of the Moruya River. The original settlement of Broulee, first surveyed in 1837, was a busy port frequented by whalers and trade vessels (Bayley 1964; Eurobodalla Coast Tourism 2012). Construction of breakwaters and dykes allowed vessels to cross the difficult Moruya River bar and the township of Moruya developed as the hub of the district (Eurobodalla Coast Tourism 2012). Its growth was based on transport through its port, agriculture, gold mining and quarries, including provision of granite for the bridge pylons for the Sydney Harbour Bridge. Settlement around Wagonga Inlet commenced in 1839 when Francis Hunt established the farm 'Noorooma', which later gave the town of Narooma its name. When gold was discovered in the 1860s further development in the upper reaches of the inlet progressed to service the gold township of Nerrigundah (Eurobodalla Coast Tourism 2012). In the 1860s Thomas Sutcliffe Mort took up land at Bodalla and established a series of dairies in the area and oversaw the growth of dairy and cheese industries (Eurobodalla Coast Tourism 2012). Fishing, forestry and the dairy industry all experienced sustained growth during the late 19th century and early 20th century but all have faced significant pressures in the past few decades.

Professional fishing is thought to have commenced on the Clyde River at Batemans Bay in the 19th century. Some of the first professional fishers also conducting the mail run along the river (James 2001). As the gold declined in the 1890s the miners, including some 6000 Chinese, took up farming, fishing or other industries or businesses. Many commenced professional fishing operations in Narooma in the Wagonga Inlet and surrounds. Sharks were hunted for oils and skins at the entrance to the inlet and Chinese settlers caught snapper and prawns at Corunna Lake. In a dispute which resonates with modern times many residents blamed the Chinese for the depletion of snapper in the area with complaints to the local Fisheries Inspector as early as 1900 about nets used by the Chinese (Pacey 2001). A sustained push by locals led to the closure of Wagonga Inlet to professional fishing in the mid-1930s on the grounds that it would allow fish to spawn (Pacey 2001). This action is reminiscent of current recreational fishing havens established nearly 80 years later and underlines the popularity of the area for fishing even then (Pacey 2001).

Diving for oysters began in the region around 1895. By the early 1920s modern methods of oyster farming had developed using waste timber from the mills to make 'walls' – a precursor to modern oyster racks. Oyster farming remains an important industry in the region today with growers in the Clyde and Moruya Rivers, Turross Lake and Wagonga Inlet (James 2001; Eurobodalla Coast Tourism 2012). During the Depression years many oyster farmers and factory or mill workers turned to fishing as a sideline business to maintain an income. Long Beach became a popular area for prawning during this time and remained so until the removal of trawlers was required by the commencement of the Marine Park zoning plan in 2006 (James 2001).

In the early days of professional fishing on the south coast the only means of transport to market was via steamers. It required large amounts of ice and salt to preserve fish. In the 1930s truck transport to Sydney began and in the late 1930s Australia's first fish cannery was established on the banks of Wagonga Inlet (Pacey 2001). The establishment of the cannery brought a guaranteed market to local fishers and employment for many families in the region. By the early 1950s up to 80 people worked at the cannery, and almost every family in Narooma had someone working in the cannery at some time. Between 1956 and 1960, however, production gradually declined and eventually the plant ceased operation altogether. It was used for other purposes until 1974 when it closed entirely and was bulldozed for residential development (Pacey 2001).

Narooma was also the home port of a large fleet of seine trawlers that moved into the area after World War II. In 1948 there was up to 26 trawlers in the Narooma area alone, mostly fishing for tiger flathead (Pacey 2001). Since that time the fisheries within what is now the BMP have undergone many structural changes and are now managed by NSW Department of Primary Industries. With the introduction of the BMP all trawling was removed from within the park boundaries resulting in a number of fishing families exiting or partially exiting the industry after several generations of involvement in fishing in the area.

Batemans Bay was established in 1841 originally as a satellite suburb of Broulee. It remained a small settlement until sawmilling and farming led to its expansion in the 1860s. A large number of sawmills

were built during this period. By 1883 there were at least 13 mills in Batemans Bay and the Clyde River. With the growth of sawmilling came the expansion of the Port of Nelligen on the Clyde River as hardwood sleepers were shipped throughout the colony (Bayley 1964; James 2001; Eurobodalla Coast Tourism 2012). The invention of the chainsaw, mechanisation of milling equipment and a drop in demand for railway sleepers saw a steady reduction in timber workers throughout the first half of the 20th century. However, the Batemans Bay area still supported eight sawmills and 84 families as late as 1962. Today one mill remains (James 2001).

During the 1990s the south coast (along with many other parts of Australia) was the scene of bitter disputes between environmentalists and forestry workers in a campaign to protect old growth forests from logging (Lester 2007). These conflicts were often highly confrontational involving arrests and property damage. In the Eden area alone protests resulted in up to 500 arrests (McManus 2002). When Australia signed the Convention of Biological Diversity in 1992 forestry became subject to international agreements and increased regulation. The ruling state Labor government found itself in the difficult situation of managing a conflict fought between two of its major voter bases – rural, blue-collar workers and union members, and progressive urban, largely Sydney-based, voters with environmental concerns and an increasing interest in forestry practices on the south coast (McManus 2002). It managed the conflict through the development of Regional Forestry Agreements with the Federal Government. The Eden and Southern RFAs (taking in the BMP area) were signed in 1999 and 2001 respectively after a highly controversial process characterised by sometimes violent protests. It resulted in the continuation, and in some places expansion, of woodchipping operations, balanced with the creation of 150 new areas of national park totalling almost one million hectares. Interviews with workers and residents of the south coast at the time interpreted this increased protection as ‘locking up’ the forests and denying local workers long-term resource security (McManus 2002). While the forest industry generates only relatively minor levels of employment and income for the state of NSW it is an important industry for small towns like Batemans Bay, Narooma and, further south, Eden where a significant pulp mill exports woodchips to Japan (McManus 2002; Schweinsberg, Wearing & Darcy 2011). At the turn of the century South East NSW (including the south coast) provided 68% of the timber to this mill for chipping. The increasing regulation of forestry by centralised governments and the heavy reliance on the timber industry of towns such as Eden means that historically much of the south coast has been dependent for their ongoing viability on decisions made outside their local region (McManus 2002).

The recent history of conflict with environmental groups meant that some research participants for this project had had direct experience of fundamental ideological differences between them and “greenies”:

I had one lady (customer), going back 4-5 year ago and her and her husband used to be into logging and they closed down the forest they were working and they broke down and lost everything, their business, their trucks. They got back up and running got a new business just a coffee shop at Cobargo and this woman's turned up this day just having a coffee, and they were just making small talk and she asked her what's brought her down and she said 'I'm

down here to protest', they were trying to organise a scenic drive so people could enjoy the forest that they'd saved and she was down there to protest that. So this lady said 'well you don't want people in there, you took our trucks out, you don't want people in there what do you want?', she said 'to know it's there'.

Recreational fisher (BMP)

The dairy industry has also withstood profound changes and challenges in recent history with deregulation in 2000 and record droughts throughout the latter half of the 20th century and early 21st century. Despite the challenges of a changing economy the south coast towns within the BMP have continued to grow largely on the back of the tourism industry and retirees moving to the area from the larger urban centres of Sydney and Canberra.

The importance of the south coast as a recreational fishing destination dates back to the early 20th century when Narooma was a popular destination for many fishing parties of tourists (Pacey 2001). The south coast area, particularly Bermagui Batemans Bay and Narooma, were popularised amongst game fishers by the famous American novelist, Zane Grey. Grey visited the area in the 1930s, writing about his experiences in his book 'The American Angler in Australia' (Grey 1937).

The growth of the importance of Batemans Bay as a tourism destination was further aided by the development of infrastructure in the area in the mid-20th century. The road between Canberra and Batemans Bay was sealed in 1962, making travel to the coast much easier for holiday makers from Canberra (James 2001). Batemans Bay is now the largest town within the BMP area, and the Eurobodalla Shire, with a population of just under 17 200 people (Eurobodalla Shire Council 2012). Fishing remains a highly popular pastime in this region of NSW. A recreational fishing survey published in 2003 found that the south east region, which includes what is now the BMP, had a participation rate of 30.1% in recreational fishing, well above the national average of 19.5% (Henry & Lyle 2003).

4.6 Regional profile of the Port Stephens area

4.6.1 Population demographics

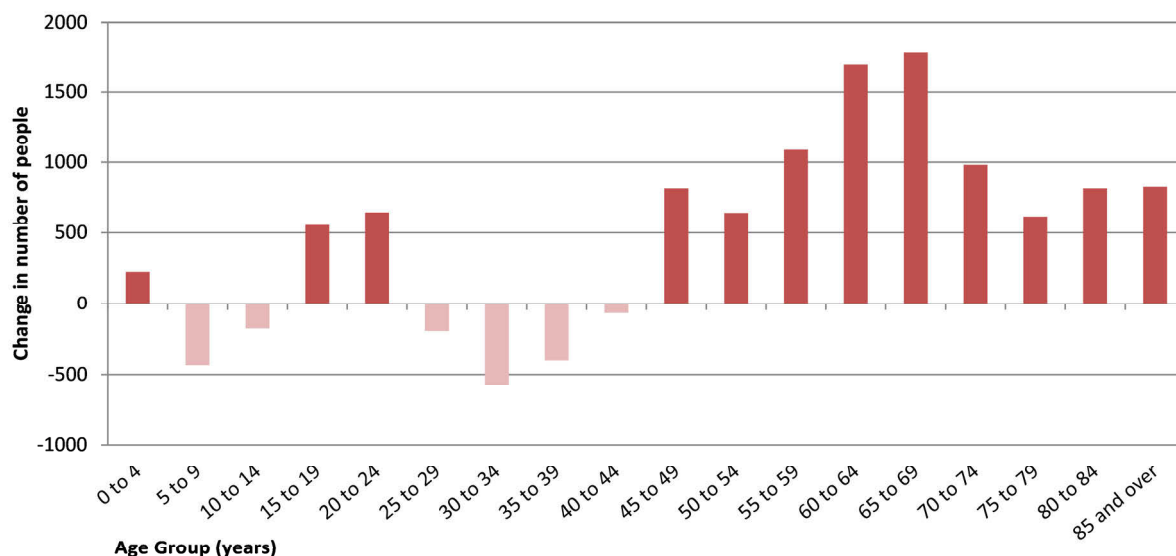
The PSGLMP crosses two local government areas, incorporating the Port Stephens Shire and the Great Lakes Shire. Demographic information that combines the coastal districts of each of these two LGAs has been prepared and is presented below. The combined areas are referred to collectively as the 'Port Stephens Area'.

The Port Stephens area has experienced sustained, gradual population growth over the past 20 years. In 2006, just after the declaration of the PSGLMP, the population of the area was just under 70 000 people (Profile ID 2012, 2013). The Port Stephens area shows a clear trend of growth in people of retirement age (60+), which can be attributed to an in-migration of retirees moving to the area as well as an ageing population. Figure 4.5 shows the marked increase in population numbers in the

retirement age brackets between the 2001 and 2011 census. The decline in people within the 25-45 and 0-15 age brackets indicates an out-migration of young families from the area during that time.

Change in five year age structure, 2001 to 2011

Port Stephens area



Source: Australian Bureau of Statistics, Census of Population and Housing, 2006 and 2011 (Usual residence data)
Compiled and presented in profile.id by .id, the population experts.



Figure 4.5: Increase or decrease in the number of people in the Port Stephens area shire within 5 year age brackets since 2001, based on 2011 census data (Profile ID 2013)

Figure 4.6 indicates that people within the retirement age bracket of 65 and over are relatively evenly spread throughout the region with the highest concentrations around Tea Gardens/Hawks Nest, Anna Bay and Williamstown. Aboriginal people made up 3.5% (or 2,602 people) of the total population of the Port Stephens area, above the NSW average of 2.5% (Profile ID 2013).

People aged 65 years and over, 2011, Usual residence

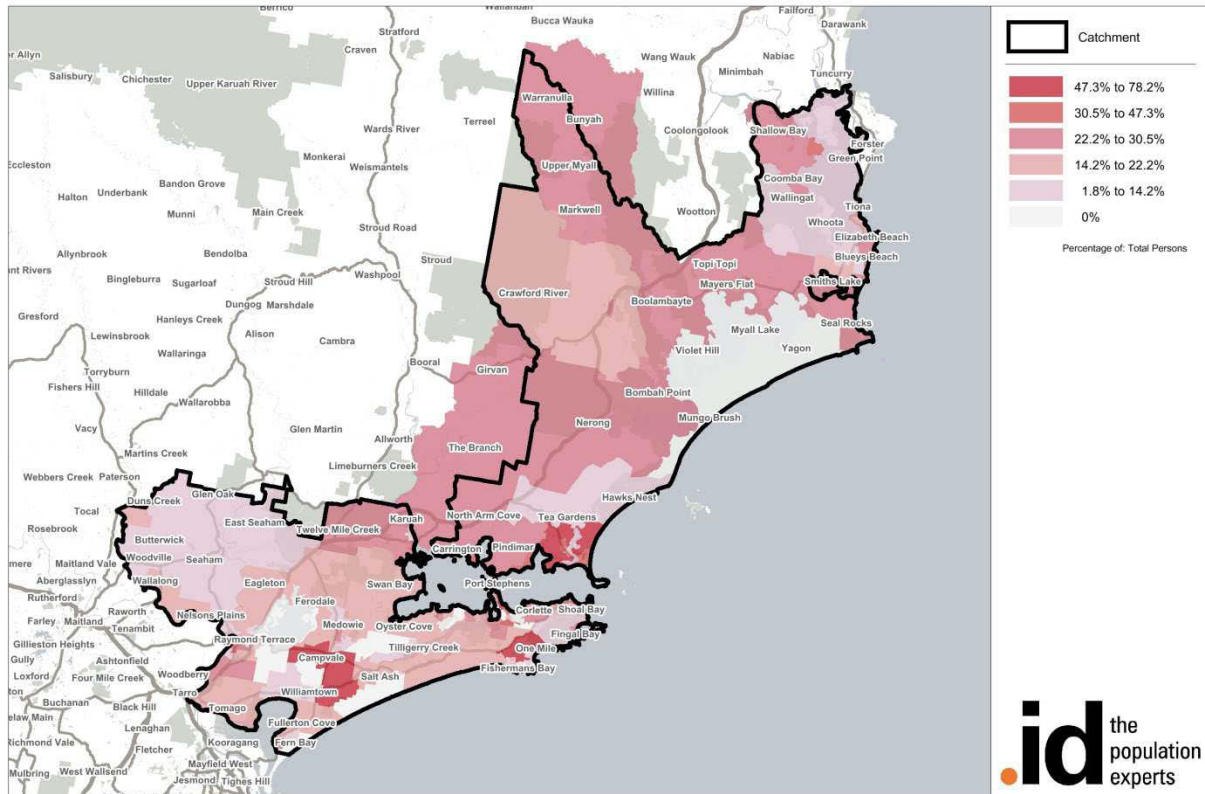
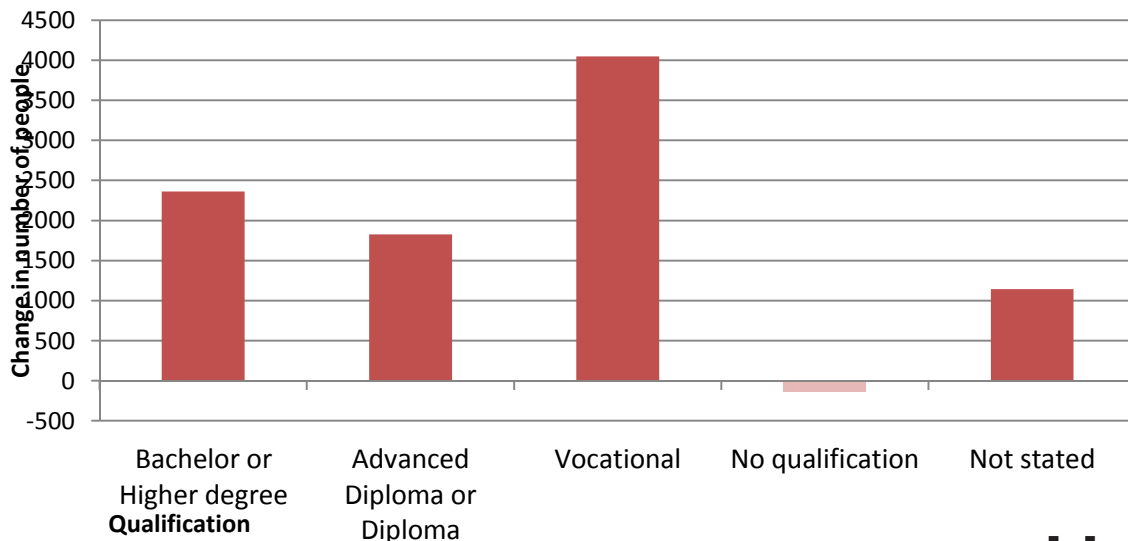


Figure 4.6: Concentration levels of the number of persons aged 65 and over residing in the Port Stephens area, 2011 (total persons excluding overseas visitors)(Profile ID 2013)

4.6.2 Education

The 2011 Census indicated that 45.8% of the adult population of the Port Stephens area have no formal qualifications, which is just above the state average of 41.8%. In addition half (52.2%) of the adult population of the Port Stephens area completed school at or prior to Year 10 (or lower secondary school), compared with the state average of 37% (Profile ID 2013). Figure 4.7 indicates that all levels of education have increased over time, most likely reflecting the inward migration of retirees from other areas of the state, as well as ongoing education of residents. Vocational training has been the largest area of growth, however, large numbers of residents have also completed university education since the 2006 census.

Change in highest qualification achieved, 2006 to 2011



Source: Australian Bureau of Statistics, Census of Population and Housing, 2006 and 2011 (Usual residence)



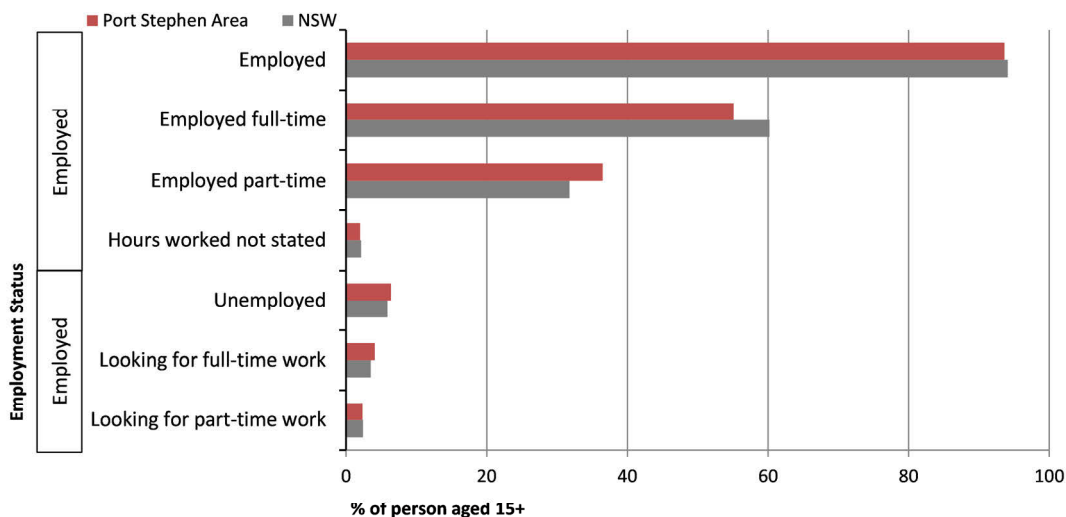
Figure 4.7: Increase or decrease in the highest qualification achieved of persons residing in the Port Stephens area. Changes measured since 2006, based on 2011 census data (Profile ID 2012).

4.6.3 Employment and Income

The Port Stephens area has unemployment rates slightly over the state average – 6.4% compared with 5.9% (Figure 4.8). Overall, 93.6% of the labour force is employed compared with 94.1% for NSW.

Employment status, 2011

Port Stephens area



Source: Australian Bureau of Statistics, Census of Population and Housing, 2006 and 2011 (Usual residence data)
Compiled and presented in profile.id by .id, the population experts.

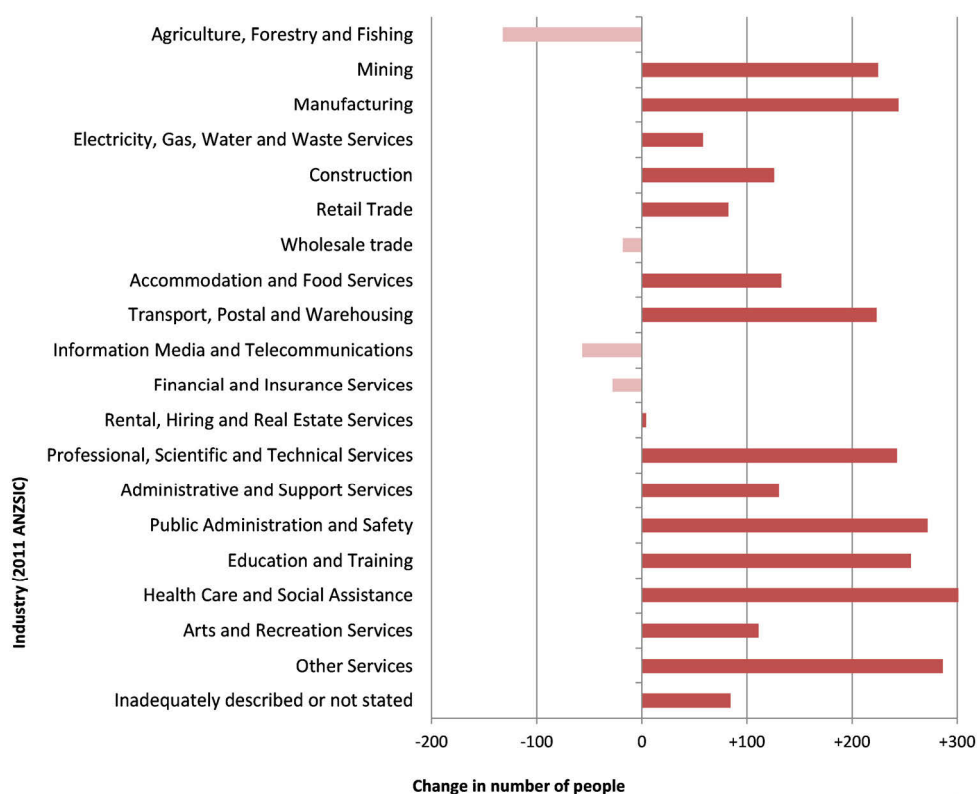


Figure 4.8: Employment and labour force status, Port Stephens Area and New South Wales, 2011 (Profile ID 2013)

Census data shows that in 2011, 479 individuals, or 1.6% of the workforce, were employed in the fisheries, forestry or agriculture industries, down from 612 in 2006 (Figure 4.9). The Port Stephens area shows a diverse of employment base, with employment growth in a range of industries including mining and manufacturing through to service and professional industries. The largest employers in the area are health care and social services, retail trade, and manufacturing each accounting for over 10% of the workforce, with construction and hospitality industries also providing significant employment in the area. The presence of the NSW Government run Port Stephens Fisheries Centre and the nearby University of Newcastle is likely to be partially responsible for the high level of employment in the 'professional, scientific and technical' field, which currently employs 4.6% of the workforce (Profile ID 2013).

Change in employment by industry, 2006 to 2011

Port Stephens area



Source: Australian Bureau of Statistics, Census of Population and Housing, 2006 and 2011 (Usual residence data)
 Compiled and presented in profile.id by .id, the population experts.

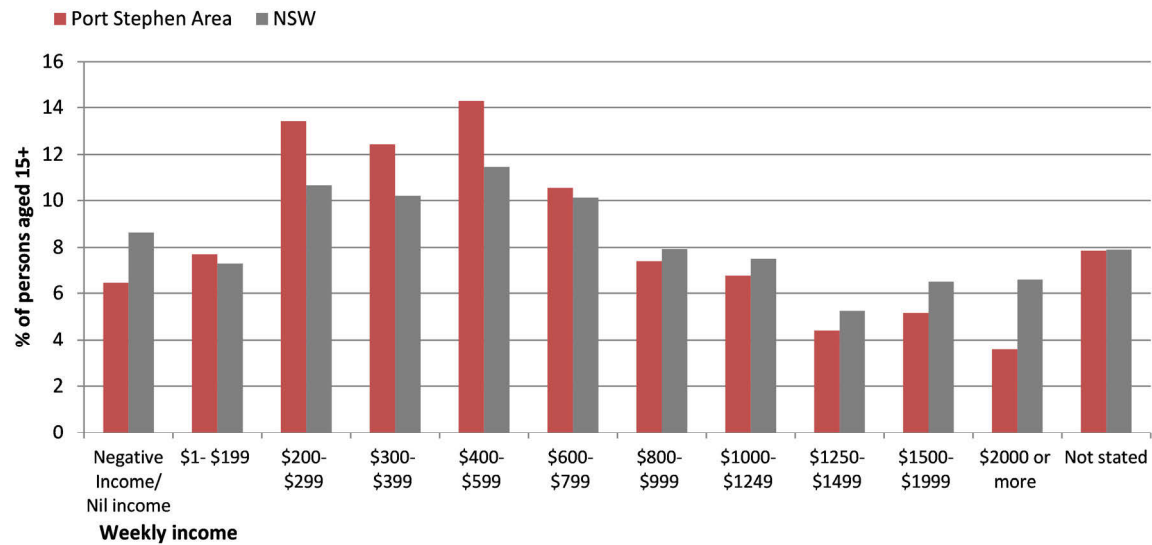


Figure 4.9: Increase or decrease in the number of people employed per industry from 2006 to 2011, Port Stephens Area (Profile ID 2013).

A greater proportion (54.3%) of residents of Port Stephens area earn a low income (less than \$600 a week) in relation to the state average (36.7%) (Figure 4.10). This is perhaps reflective of the higher than average number of individuals employed part time (as seen in Figure 4.7).

Weekly individual income, 2011

Port Stephens area



Source: Australian Bureau of Statistics, Census of Population and Housing, 2006 and 2011 (Usual residence data)
Compiled and presented in profile.id by .id, the population experts.



Figure 4.10: Weekly individual income, Port Stephens area and New South Wales, 2011. (Profile ID 2013)

4.6.4 Summary

The population of the Port Stephens area is experiencing sustained, but stable growth particularly within the retirement age bracket. The area has lower than average levels of education and income compared to the state of NSW however trends suggest an increased level of education over time as residents pursue further education and educated retirees move to the area. Unemployment and the number of low income earners in the area is slightly higher than state-wide trends however the latest census indicates a diverse economic base with growth in employment across a wide variety of sectors. The traditional industries of forestry, fishing and agriculture have continued to decline. In addition the area has higher numbers of Indigenous residents than the state average.

4.7 Regional profile of the Eurobodalla area

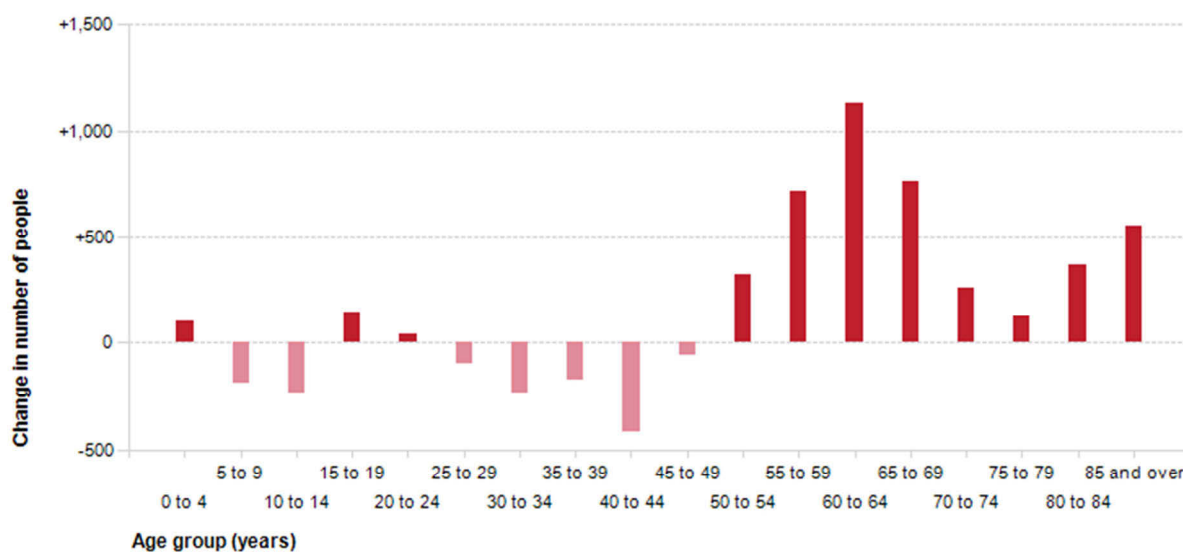
4.7.1 Population demographics

The Eurobodalla Shire has experienced sustained population growth over the past 25 years with the population doubling between the 1980s and 1990s (Profile ID 2012). This trend is attributed to an immigration of retirees moving to the area from Canberra, Sydney and rural areas as well as from overseas (Forecast ID 2012). In 2001-2006 population growth rates for the area, were roughly twice the state average (Powell & Chalmers 2006; Forecast ID 2012). However since 2006 this has fallen away sharply (from 1.5 to 0.2% per annum). The area is a significant retirement destination with more than 30% of the population aged 60 years or older in the 2006 census, nearly double the state-wide

average of 18.6%. This trend has continued since 2006 with just over 35% aged over 60 in the 2011 census, compared with 20% state-wide (Forecast ID 2012). Figure 4.11 shows the marked increase in population numbers in the retirement age brackets between the 2001 and 2011 census. The decline in people within the 25-50 and 0-11 age brackets indicates an out-migration of young families from the area during that time.

Change in five year age structure, 2001 to 2011

Eurobodalla Shire



Source: Australian Bureau of Statistics, Census of Population and Housing, 2001 and 2011 (Usual residence data)
Compiled and presented in profile.id by .id, the population experts.



Figure 4.11: Increase or decrease in the number of people in the Eurobodalla shire within 5 year age brackets since 2001, based on 2011 census data (Profile ID 2012)

Figure 4.12 indicates that people within the retirement age bracket of 65 and over were most heavily concentrated in the Dalmeny (36.3%), Tuross Heads (33.2%) and Narooma (30.1%) areas (Atlas ID 2012).

Aboriginal people made up 4.4% (or 1,556 people) of the total population of the Eurobodalla Shire in 2006, a figure double the NSW average of 2.1%. Aboriginal people in the Eurobodalla were generally much younger than the non-Aboriginal population of the Shire, with median ages of 21 and 48 years respectively. There are 5.5 times more non-Indigenous people over the age of 65 years, than in the Aboriginal population (Rogers 2009).

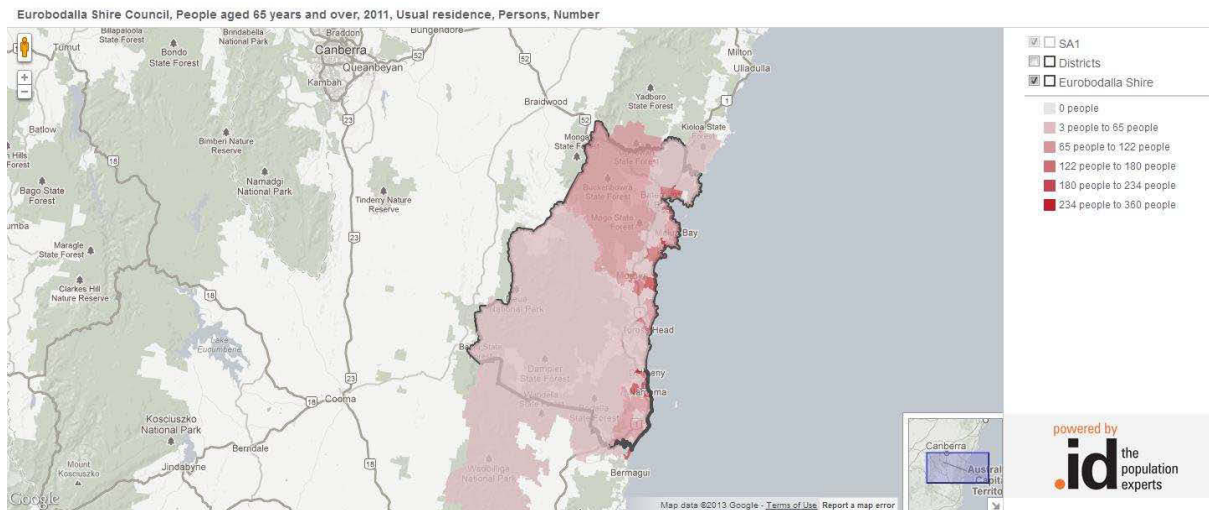


Figure 4.12: Concentration levels of the number of persons aged 65 and over residing in the Eurobodalla Shire, 2011 (total persons excluding overseas visitors) (From Atlas ID 2012)

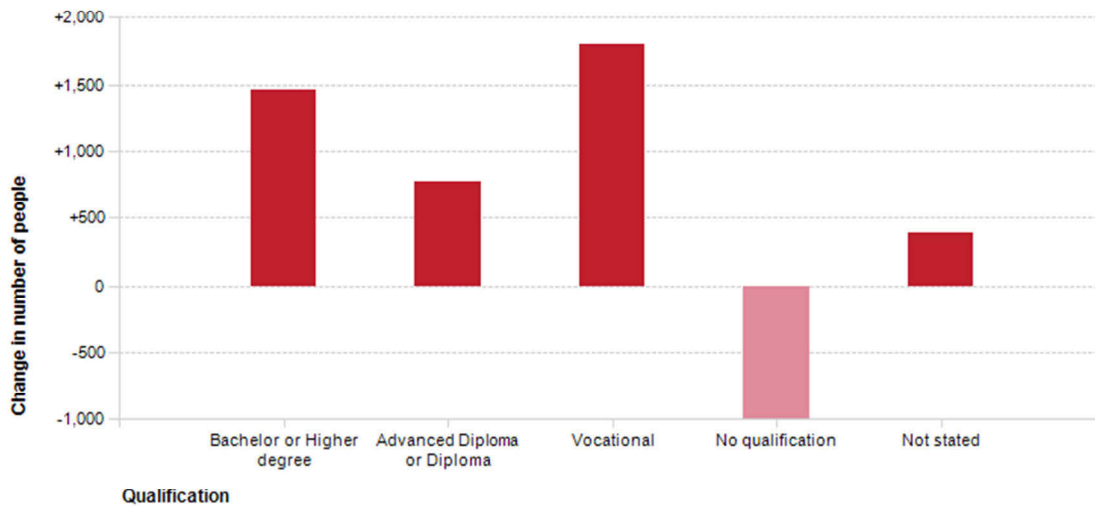
4.7.2 Education

The 2011 Census indicated that 45.8% of the adult population of Eurobodalla had no formal qualifications, which is just under the state average of 41.8%. In addition half (50.3%) of the adult population of the Eurobodalla Shire had completed school at or prior to Year 10 or before, compared with the state average of 37% (Profile ID 2012). Completion of Year 10 or higher schooling for Aboriginal people is nearly a third less, proportionately, than the Shire's population. Enrolment in higher education, such as TAFE or University, in the Aboriginal community is nearly half that of the rest of the Shire (Rogers 2009).

Figure 4.13 indicates that all levels of education have increased over time, most likely reflecting the inward migration of retirees from other areas of the state, as well as ongoing education of residents.

Change in highest qualification achieved, 2001 to 2011

Eurobodalla Shire



Source: Australian Bureau of Statistics, Census of Population and Housing, 2001 and 2011 (Usual residence data)
Compiled and presented in profile.id by .id, the population experts.



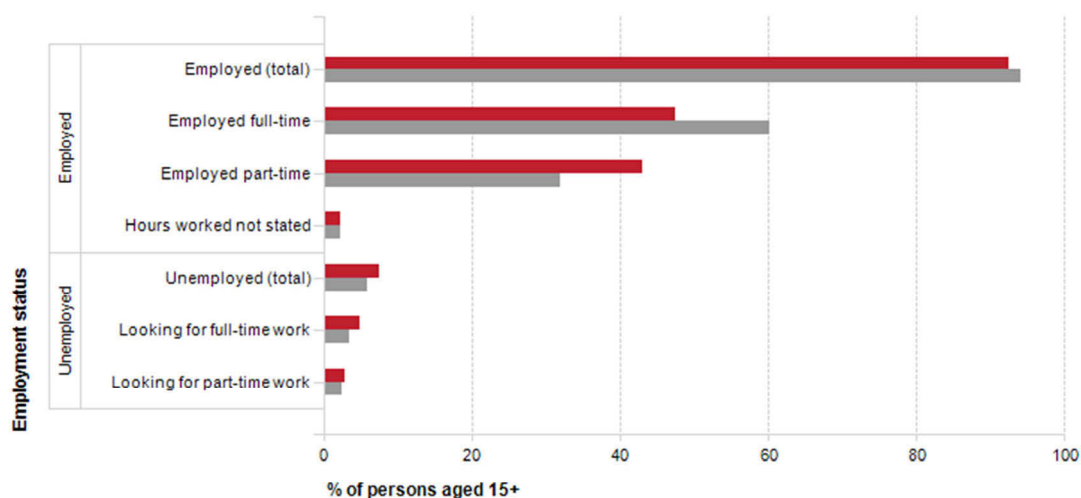
Figure 4.13: Increase or decrease in the highest qualification achieved of persons residing in the Eurobodalla Shire. Changes measured since 2001, based on 2011 census data (Profile ID 2012).

4.7.3 Employment and Income

The Eurobodalla Shire has higher unemployment than the state average – 7.5% compared with 5.9% (Figure 4.14). Overall, 92.5% of the labour force was employed compared with 94.1% for New South Wales.

Employment status, 2011

■ Eurobodalla Shire ■ New South Wales



Source: Australian Bureau of Statistics, Census of Population and Housing, 2011 (Usual residence data)
Compiled and presented in profile.id by .id, the population experts.

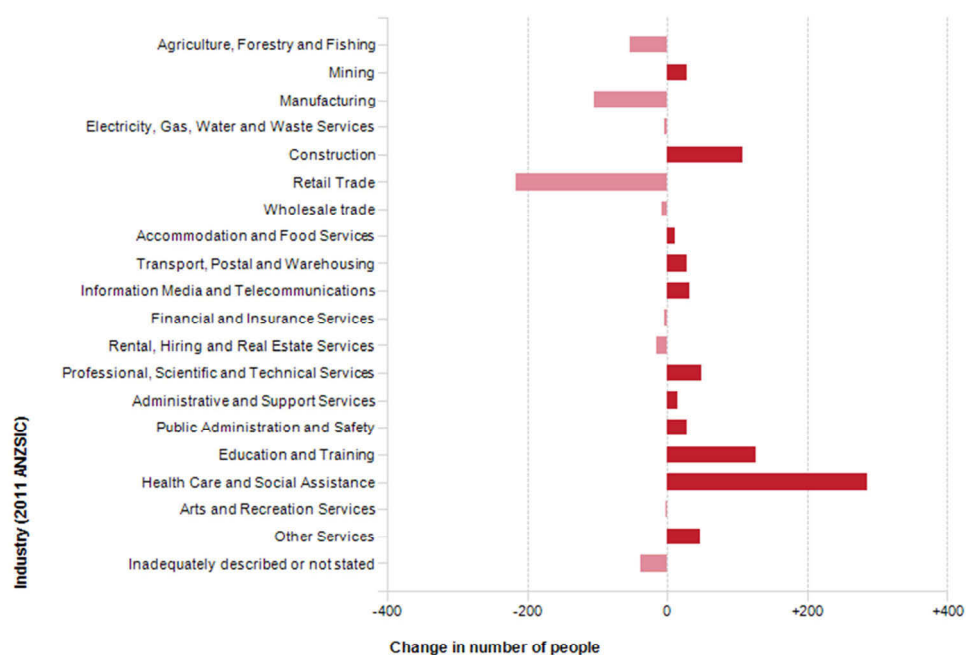


Figure 4.14: Employment and labour force status, Eurobodalla Shire and New South Wales, 2011 (Profile ID 2012)

Census data shows that in 2011 340 individuals, or 2.7% of the workforce, were employed in the fisheries, forestry or agricultural industries. This figure has been in steady decline for decades and, as indicated in Figure 4.15 has continued since the 2006 census (Profile ID 2012). While prior to 2006 there was a period of growth in employment in service industries such as retail trade this has contracted in more recent times with retail trade showing the biggest decline in employment (-216 people) since 2006. Despite this, retail trade remains the largest employer in the region, accounting for 14.8% of the workforce, followed by health care (13.6), hospitality industries (11.6%) and construction (10.9%) (Profile ID 2012). Service industries tied to the tourism industry therefore dominate the Eurobodalla economic profile with retail trade and hospitality industries by far the biggest employers in the region, making up more than a quarter of the workforce.

Change in employment by industry, 2006 to 2011

Eurobodalla Shire



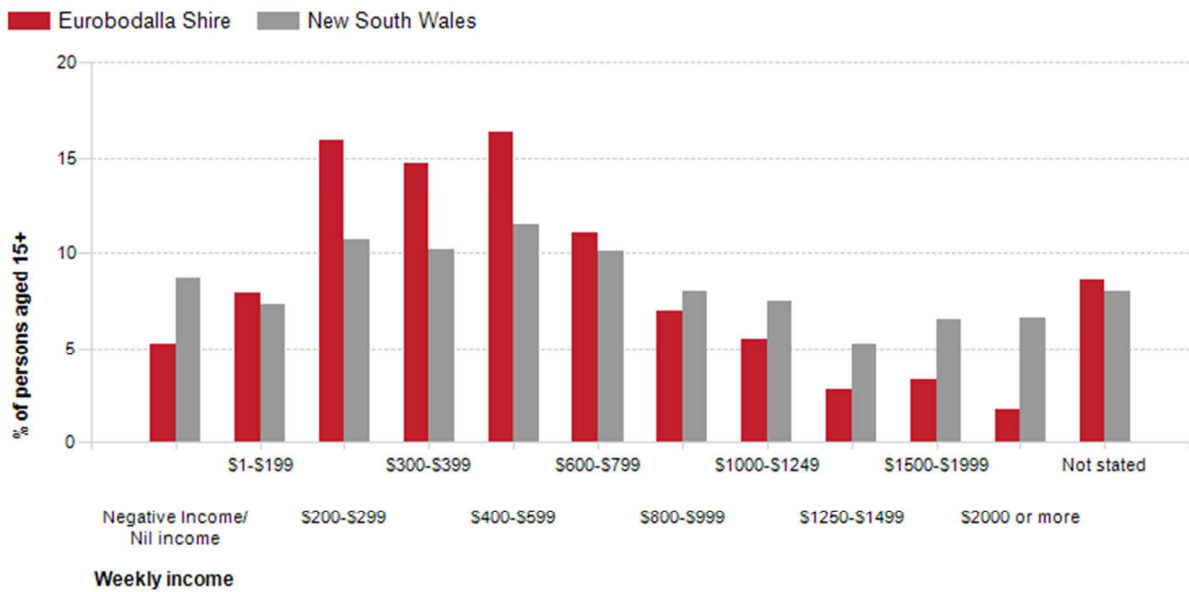
Source: Australian Bureau of Statistics, Census of Population and Housing, 2006 and 2011 (Usual residence data)
Compiled and presented in profile.id by .id, the population experts.



Figure 4.15: Increase or decrease in the number of people employed per industry from 2006 to 2011, Eurobodalla Shire (Profile ID 2012).

A greater proportion (43.8%) of residents of Eurobodalla Shire earned a low income in relation to the state average (36.7%) (Figure 4.16). This is likely to be a reflection of the high level of part-time employment and the larger number of retirees in the region (see Figure 4.14). Aboriginal people were also earning over one-third less than the non-Indigenous population of the Shire in individual weekly income (Rogers 2009).

Weekly individual income, 2011



Source: Australian Bureau of Statistics, Census of Population and Housing, 2011 (Usual residence data)
Compiled and presented in profile.id by .id, the population experts.



Figure 4.16: Weekly individual income, Eurobodalla Shire and New South Wales, 2011. (Profile ID 2012)

4.7.4 Summary

The population of the Eurobodalla is therefore undergoing significant changes. The population has experienced rapid growth in the past three decades and is expanding and ageing due to the influx of retirees from surrounding areas. The Shire has lower than average levels of education and income compared to the state of NSW however trends suggest an increased level of education over time as residents pursue further education and educated retirees move to the area. While the 2006 census indicated a clear growth in employment in service industries this has contracted in recent years. The traditional industries of forestry, fishing and agriculture have continued to decline. Employment is below the state average. In addition the Shire has higher numbers of Indigenous residents. Indigenous residents tend to be younger with lower levels of education and income than their non-Indigenous neighbours.

4.8 Discussion

The coast is a place which holds rich meaning for coastal Aboriginal people, through direct connection to ancient stories and ancestral ties but also more recent stories of adaptation and resilience in the face of changes brought about through colonisation. During the post-contact period Aboriginal people were progressively dispossessed of their traditional country, through the expansion of townships, agriculture, industry and forestry (Goodall 1996; NSW Office of Environment and Heritage 2012). The coast remained a haven for many Aboriginal people during those times as it was seen as unproductive or of little use or value to the European settlers (NSW Office of Environment and Heritage 2012). The second half of the twentieth saw significant changes in the way non-Aboriginal people began to value the coast. Increasing mobility, through car ownership, and the rising popularity of the beach as a tourism destination increased demand for coastal spaces for non-Aboriginal people, through tourism, residential and recreational developments. This, along with the expansion of coastal national parks and changes to fisheries regulations throughout the state has significantly changed the way Aboriginal people can use and access the coast, including the loss of some areas that have a long and direct history of use by Aboriginal people since colonisation (NSW Office of Environment and Heritage 2012). There is a considerable amount of evidence of resistance and activism amongst Indigenous communities in both the BMP and the PSGLMP relating to land rights and access to country. Aboriginal people around Port Stephens and the south coast were active in lobbying government to secure Aboriginal access to country for their social, economic and cultural needs throughout the last century. In both areas Aboriginal people repossessed land and access to seafood resources was a crucial component of their choice of land. On the south coast there has been a more recent history of resistance to changes to fisheries regulations which have limited access to important seafood resources such as abalone and other molluscs. It is unsurprising then, given this long history of activism that further restrictions on their use of their country would be viewed as further dispossession and placed in the context of two centuries of colonisation.

Both the PSGLMP and BMP areas have urban areas which have largely been built up on the back of fishing and other primary industries as well as fishing-related tourism. Both have higher than average levels of unemployment, low income earners and adults with no formal qualifications. However there are also some notable differences in their community profiles. The most significant is the employment and economic base of each community and the environmental history of each region.

In contrast to the Eurobodalla Shire, in which the BMP is based, the Port Stephens area has a much wider diversity of occupational and professional industries in which its residents are employed, likely reflecting a range of backgrounds, ideologies, attitudes and opinions. The presence of the Port Stephens Fisheries Centre with its large number of staff may have been a possible influence on community attitudes towards the PSGLMP. It can be assumed that staff would have a greater technical understanding of the science and policy basis of MPAs which may have assisted them in contributing to informed debate within the community. The real value of its diverse employment base, however, is that the Port Stephens area is likely to have a greater resilience to changes in its

economic makeup and a greater sense of autonomy from external regulatory and market drivers which might influence the viability of individual sectors of the economy.

The Eurobodalla, on the other hand, has seen a recent and relatively rapid shift away from primary industries to a more service based economy, especially tourism related industries and health care for an ageing population. The area does not have the benefit of employment diversity offered by the proximity to mining, manufacturing and professional industries seen in the Port Stephens area. This heavy concentration of employment in tourism may leave the Eurobodalla community feeling particularly exposed to any change that may impact these industries, a fear perhaps realised since 2006 with marked declines in these industries in the five years leading up to the 2011 census. While it is not possible to determine whether the BMP contributed in any way to these declines it does highlight the vulnerability of these industries to external factors (such as economic downturns) which can have serious flow-on effects to the wider community.

This vulnerability to external factors has historically been a feature of the Eurobodalla economy. The experience with forestry demonstrates the way in which local communities can be impacted by decisions made by remote governments. The south coast has a history of conflict over the management of environmental resources dating right back to the early 20th century when fishers in Narooma lobbied for the exclusion of Chinese netters from the waters of Wagonga Inlet. Since that time conflict between user groups over management of fisheries and forestry has occurred on a number of occasions. These have included conflict between forestry workers and conservationists, between professional fishers and recreational fishers over recreational fishing havens and between Aboriginal fishers and other stakeholders and regulatory bodies over the harvesting of abalone and access to land. The area has seen massive declines in employment and income in previously profitable industries within the living memory of its residents through the closure of the tuna and salmon canneries and a large number of timber mills. Prior to the relatively recent population growth in these south coast towns most families in the region would have had employment connections of some form to these two major employers in the region making the changes brought about by their closures a part of their own personal histories. One research participant and long term resident of the BMP explained it this way:

Historically from what we've seen from every other government initiative was that they do what they want and we've sort of got to make our own way as best we could and we've seen that progressively with grandfather with the timber industry, with our hire boats, with the different industries that we've had to keep adapting along the way, it hasn't been easy..we've just had to go..this is the new government thing how are we going to adapt to that? It's a new set of rules a new set of goalposts and we have to fit into that.

Professional fisher, BMP

In effect the environmental history of the south coast area has been one of successive generations of long-term residents dealing with management changes and competing with other user groups for increasingly limited resources. The recent influx of sea change retirees, as well as 'greenies' visiting

from urban areas has brought with them new ideas about how these natural resources should be managed and who should have access to them and this clash of cultures was demonstrated by the bitter disputes over forestry seen in the late 20th century and again over the marine park.

Environmental conflict in the PSGMLP, on the other hand, has focused on community rejection of large scale industrialisation. Recent history includes records of the local community rallying to protest a range of proposals including port facilities, coal terminals and steelworks and in more recent memory a large scale pearl farm. Rather than being a divisive force within the community the recognition of a common enemy has often brought disparate forces together to fight local environmental issues where common values are shared.

4.9 Conclusion

Comparing the regional profiles of the PSGMLP and BMP sheds considerable light on the disparate community responses to the marine parks in these areas. While sections of the PSGMLP community clearly objected to the marine park there was sufficient diversity in professions, education, philosophical and ideological persuasions to ensure that the level of threat felt by the community was neutralised to some extent. This was supported by a recent history of the local community rallying together to protect their local environment from environmentally destructive practices such as industrialisation and large scale maritime developments. It is also possible that the level of urban development on the southern shore of Port Stephens and the close proximity to the industrial centre of Newcastle, as well as mining in the catchment heightened the awareness of local residents to the need for protective measures like the marine park.

By way of contrast, BMP communities are highly reliant on tourism as the new economy in the wake of the loss of importance of primary industries to the region. This shift in the economic base and an awareness of the fickleness and seasonality of the tourism industry is likely to have contributed to a sense of vulnerability to changes which have the potential to impact on tourism. In addition high levels of unemployment and low levels of education mean that sections of the community remain particularly vulnerable to shifts in employment around unskilled or semi-skilled labour. The BMP area, despite its recent growth, remains a region dominated by small towns in which prominent families lay claim to many generations with close ties to the history of the region. These families have experienced first-hand the effects of regulatory changes to natural resource management. With a history in which conflict over resource management is a recurring theme a culture has built up around the need to defend the heritage of the area against 'outsiders' who seek to 'lock up' natural areas and erode the area's traditional economic base. Despite this there is also a significant history of dispute between users. As access to resources has been increasingly constrained by regulatory changes and declines in availability, conflict and competition over resources has increased - a dispute particularly evident in the highly valuable abalone industry. Therefore in many ways the Eurobodalla area was a tinderbox waiting for a spark, a spark provided by the announcement of the BMP.

5. Media

5.1 Introduction

This chapter has produced two publications:

Voyer, M., T. Dreher, W. Gladstone, and H. Goodall. 2013. Carving the stake: dodgy science or global necessity? Local media reporting of marine parks. in S. Cottle, editor. Environmental Conflict and the Media. Peter Lang, New York

Voyer, M., Dreher, T., Gladstone, W. & Goodall, H. 2013, 'Who cares wins: The role of local news and news sources in influencing community responses to marine protected areas', Ocean & Coastal Management, vol. 85, Part A, no. 0, pp. 29-38

For most people in Australia the 'news' is the main tool used to keep abreast of current public affairs (Lester 2010). News media plays a dual role of not only informing the public of events in which they are interested but also shapes and influences this public interest and opinion. News is "more than a mirror and reflection of society and its interests. Instead it actively contributes to the constitution of that society" (Lester 2010:63). The way news is constructed, organised or presented, emphasising some aspects while excluding or de-emphasising others, is classed as 'media frames'(Gitlin 1980). Entman (2004) defines the key features of framing:

Selecting and highlighting some facets of events or issues, and making connections among them so as to promote a particular interpretation, evaluation and/or solution....The words and images that make up the frame can be distinguished from the rest of the news by their capacity to stimulate support or opposition to the sides of a political conflict. (Entman 2004, pp. 5-6)

Attention to news frames emphasises not merely *what* a story is about, but rather *how* that story is told. Frames can therefore be understood as an analytical category which corresponds closely to news 'angles', a concept which determines story selection and construction in journalism

Central to the way news media is framed is source selection. Whose voice is given prominence in media coverage, and whose is left out can be central to the way a story is framed. The concept of 'voice' within the media operates at many different levels. For the purposes of this study the exploration of voice is limited to its political use, namely the 'expression of opinion', or the expression of a 'perspective on the world that needs to be acknowledged' (Couldry 2010). News media is commonly portrayed as a 'battleground' on which competing voices fight to gain access and prominence (Hall et al. 1978; Cottle 2000; Lester 2007). The deadline orientated nature of journalism, coupled with the professional ideologies of journalists who seek to present their stories as well-grounded, objective statements of fact means that news media is generally dominated by spokespeople from recognised or 'credible' sources. This will often mean that government or other

elite groups become 'primary definers' of news topics, gaining access to the media more readily than other non-dominant groups, and use this access to set the terms of the debate in the media. By gaining an authoritative and dominant position within the news a primary definer can not only control the way a problem is presented, they can also strongly influence opinions about the preferred potential solutions to the problem (Hall et al. 1978; Cottle 2000; Lester 2010).

This chapter partly addresses two of the research questions – Research Question Two and Question Four. Chapter Four primarily examined Research Question Two i.e. *'How did communities, particularly park users, respond to the Port Stephens-Great Lakes and Batemans Marine Parks'* through its comparison of public submissions. However this chapter also provides an insight into levels of community interest in each marine park. It does this through its analysis of the 'letters to the editor pages' of local newspapers. While editors mediate the content of the 'letters to the editor pages', it is common for local newspapers to publish the overwhelming majority of received letters. Therefore letters to the editor provide some, albeit limited, insight into issues of concern within local communities.

Chapter Three highlighted four possible contributing factors towards differential community responses which would be examined in response to Research Question Four: *'If there are any differences between the levels of acceptance in each marine park community, why do these differences exist?'*

This chapter specifically examines two of those factors:

- Media bias or inconsistencies in media reporting between communities; and
- Media savvy and resourceful individuals or groups able to influence community sentiment and lead 'campaign' style resistance to their local marine park.

Content analysis of news articles is the mechanism adopted to examine the question of media bias using a quantitative measure of the level of coverage (supportive, critical or otherwise) within each marine park community during the planning phase and since. Analysis of the role of media sources in influencing the debate was conducted initially by identifying the 'primary definers' of news articles as a way of gaining insight into the dominant voices in the local coverage of the issue. This analysis was supplemented with interviews with some of the media sources in each marine park, especially key representatives of marine park opponents (fishers) and supporters (conservationists).

5.2 Methods

5.2.1 Data sources

Media coverage of the PSGLMP and BMP focussed primarily on regional newspapers with circulation within the area covered by the marine parks. It covered the time period between January 2005 (1 year prior to the announcement of the proposed declaration of the marine parks) up to December 2009 (four years after the announcement). Print media was chosen since it is a readily available and accurate archival data source which can provide an insight into issues on a local scale not provided through these other forms of more widely circulated media. Print media has been recognised as the most widely used source of local news in regional areas and has an ‘agenda setting’ function in the wider news media (van Vuuren 2009).

The level of different types of coverage in each park was assessed through quantitative study of newspaper articles and opinion pieces, including letters to the editor and editorials. Articles were sourced from online media archives using the key words “marine AND park”. Data gaps were filled through media files contained within each marine park office and state library archives. Table 5.1 details the newspapers targeted and their coverage and readership statistics. While other major and regional newspapers also covered the marine parks the decision was made to focus specifically on those newspapers where coverage of the issue was regular and ongoing, and immediately relevant to the readership.

Table 5.1: Local newspapers within marine park areas

Park	Newspaper	Circulation*	Readership*	Frequency
PSGLMP	<i>Newcastle Herald</i>	48000+	Mon-Fri 131000 Sat 186000	Mon-Sat
	<i>Great Lakes Advocate</i>	5862	18028	Weekly
	<i>Port Stephens Examiner</i> **	28123	28123	Weekly
BMP	<i>Bay Post/Moruya Examiner</i>	3769	8589	Bi-weekly
	<i>Narooma News</i>	2341	6259	Weekly
	<i>Milton Ulladulla Times</i>	5050	15814	Weekly

*Readership figures from <http://www.ruralpresssales.com.au/index.asp> (accessed 03/2011) or <http://www.adcentre.com.au/> (accessed 03/2011)

** Free newspaper

5.2.2 Content analysis

Consistent with content analyses conducted in similar studies into media coverage of environmental issues (see Wolch, Gullo & Lassiter 1997; Boissonneault et al. 2005; Compas et al. 2007; van Vuuren 2009) articles, stories and opinion pieces (including letters to the editor and editorials) were examined for supportive, critical, mixed or neutral attitudes towards the marine park. Appendix 2 contains examples of key words which were used to indicate support, criticism or neutrality. The following guidelines were also used:

- Articles were required to include more than one line relating to the marine park
- Identical articles printed in different newspapers at the same/similar time were counted as one article.
- Articles were classified as 'supportive' when they included expressions of support for the marine park.
- Articles were classified as 'critical' when they included expressions of opposition to the marine park.
- Articles were classified as 'mixed' when they contained an even mix of supportive or critical statements.
- Articles were classified as 'neutral' when they were about activities that have been undertaken in the marine park, such as research, compliance or sporting events, but they did not comment on the value or impact of the marine park. Stories that did not indicate a clear pro- or anti-park sentiment or simply provided information on how to get involved in the consultation process were also regarded as neutral.

Given the differences in publication frequency the newspapers were standardised by assigning articles in weekly newspapers the value of 1, bi-weekly newspapers a value of 0.5 and articles in the *Newcastle Herald* (a 6 day/week publication) a value of 0.16 (or $\frac{1}{6}$). The categorical data gathered through this exercise were then tested using chi squared statistical tests and frequency distributions to determine whether any differences occurred in the levels of critical vs supportive coverage in each park and between parks.

5.2.3 Identification of primary definers

Primary definers were classified as those spokespeople who set the agenda or theme of the article. In most cases this was the spokesperson first quoted or referred to in the article. However in some circumstances it was the spokesperson given the greatest exposure or prominence in the article (ie the most 'copy'). The primary definer or dominant spokesperson was noted for each article and categorised into key stakeholder groups, including fishers, conservationists, community groups, tourism politicians and government officials.

5.2.4 News framing

A content analysis was conducted of the competing frames found in local news articles at key stages of the marine park planning processes – known as critical events analysis (Gitlin 1980). An eight-day period after each 'critical event' within the five year life span of each park was incorporated into the analysis. This ensured the inclusion of those newspapers with a weekly distribution. Critical events within the history of each park included:

- The announcement by the government of the intention to declare the park (2005)
- The commencement or declaration of the park (early 2006)
- The release of the parks' draft zone plan for public comment (mid 2006)

- The release of the final zone plan (late 2006)
- The commencement of the zone plan (early 2007 PSGLMP, mid 2007 BMP).
- 3rd and 4th year anniversaries of the marine parks (2008 and 2009)

These dates were selected via purposive sampling in order to allow coverage over the full course of the parks' planning phases as well as reactions to the final zoning plans for two years following their implementation. All articles found during these critical event periods from the targeted newspapers underwent a content analysis using Nvivo software to examine the way the article was 'framed'. In particular this analysis examined the messages associated with the key, competing stakeholder groups namely conservation and fishing groups. In coverage of contentious issues it is common for the media to focus coverage on the conflict between supporters and opponents of the proposed action (e.g. Compas et al. 2007). These messages were examined and coded for those features or aspects of the proposed marine park they promoted, criticised, or excluded. For example, supportive frames might include reference to 'fishing benefits' or 'improved tourism opportunities', while critical frames might highlight costs to taxpayers, political motivations, or 'socio-economic impacts'.

5.3 Results

5.3.1 Media and the PSGLMP

5.3.1.1 News articles

In total 249 articles (non-standardised, equivalent to 138.6 when standardised) were found in the PSGLMP newspapers. Figure 5.1 illustrates how local newspapers in the PSGLMP covered the marine park over the course of the debate. It indicates that maximum coverage was during 2006 when the zoning plans for each park were being developed. Critical articles dominated the coverage in the year in which planning was undertaken (2006) but tended to be more balanced with supportive and neutral articles in the remainder of the study period.

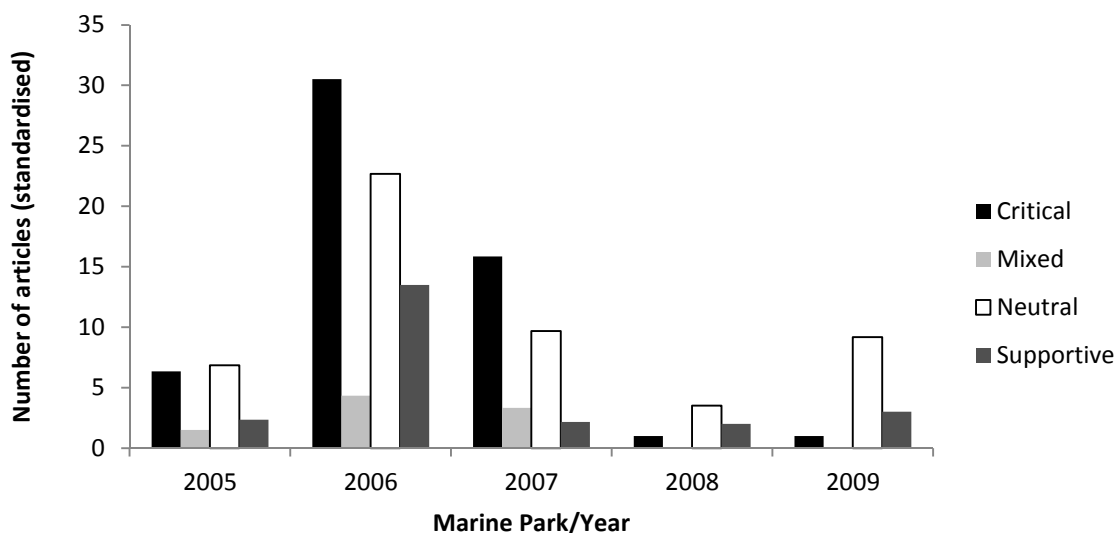


Figure 5.1: Coverage of the marine park in news articles of PSGLMP local newspapers 2005-2010

When comparing critical and supportive articles (Figure 5.2) the PSGLMP newspapers appear to have balanced critical articles with neutral articles. The *Newcastle Herald* in particular seems to have taken a predominately neutral editorial position. Figure 5.2 also demonstrates that coverage of the marine park issue was not dominated by any one publication.

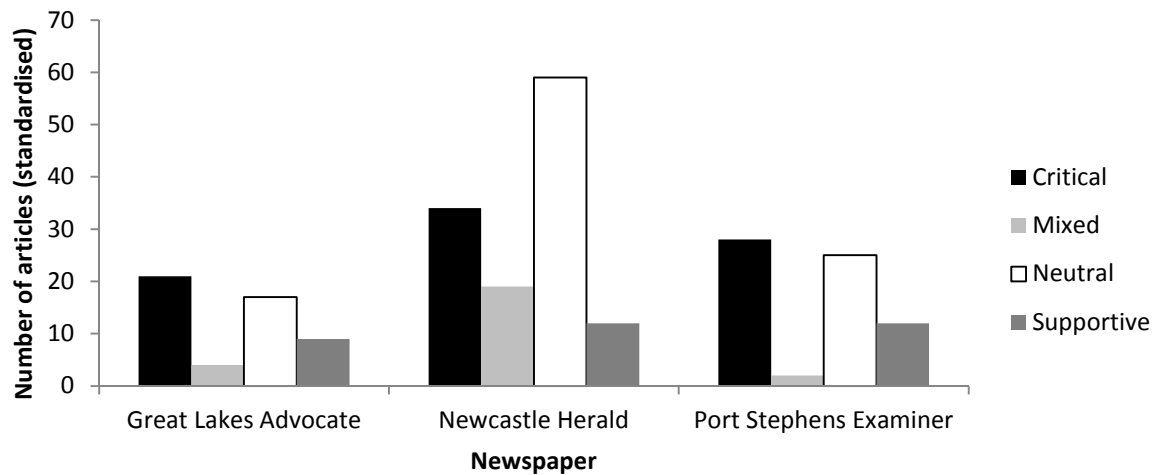


Figure 5.2: Coverage of the marine park in news articles on the PSGLMP according to source publication 2005-2010

The role of the primary definer in each news article was classified according to stakeholder group and the results are displayed in Figure 5.3. Coverage was given to a broad diversity of views however Government sources and politicians did tend to dominate the role of primary definer. Primary definers from non-Government sources included fishing interests (professional and recreational), business or tourism and conservation groups. Marine scientists were rarely primary definers of news articles and Indigenous spokespeople did not feature at all as primary definers in articles relating to the marine park.

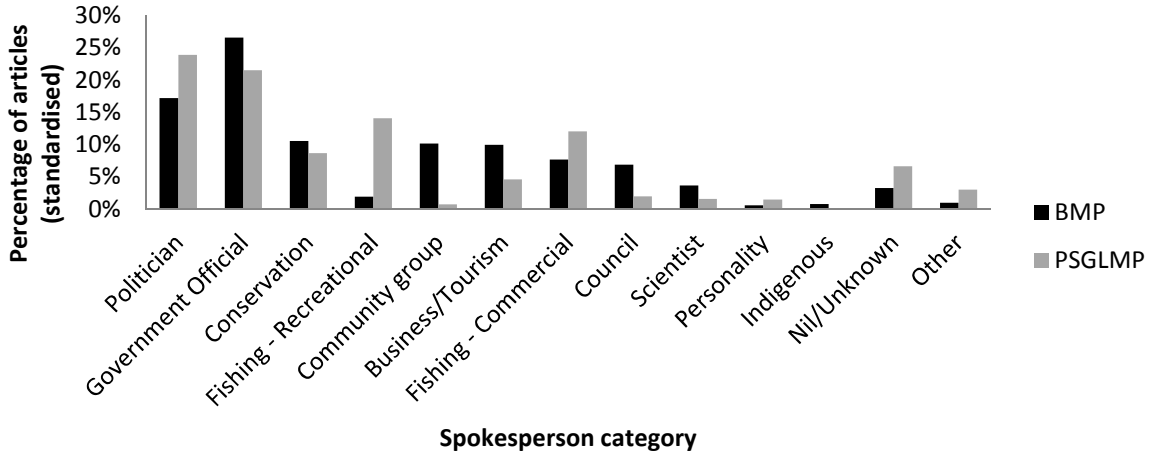


Figure 5.3: Representation of major stakeholder groups as primary definer in marine park news articles in the areas covered by the PSGLMP

Figure 5.4 shows that the *Newcastle Herald*, which has a circulation area covering the entire PSGLMP, gave relatively equal coverage to major stakeholder groups. However in the case of the *Great Lakes Advocate*, in the north of the park, professional fishers dominated the role of non-Government primary definer. By way of contrast recreational fishers dominated the role of primary definer in the *Port Stephens Examiner* in the south of the park.

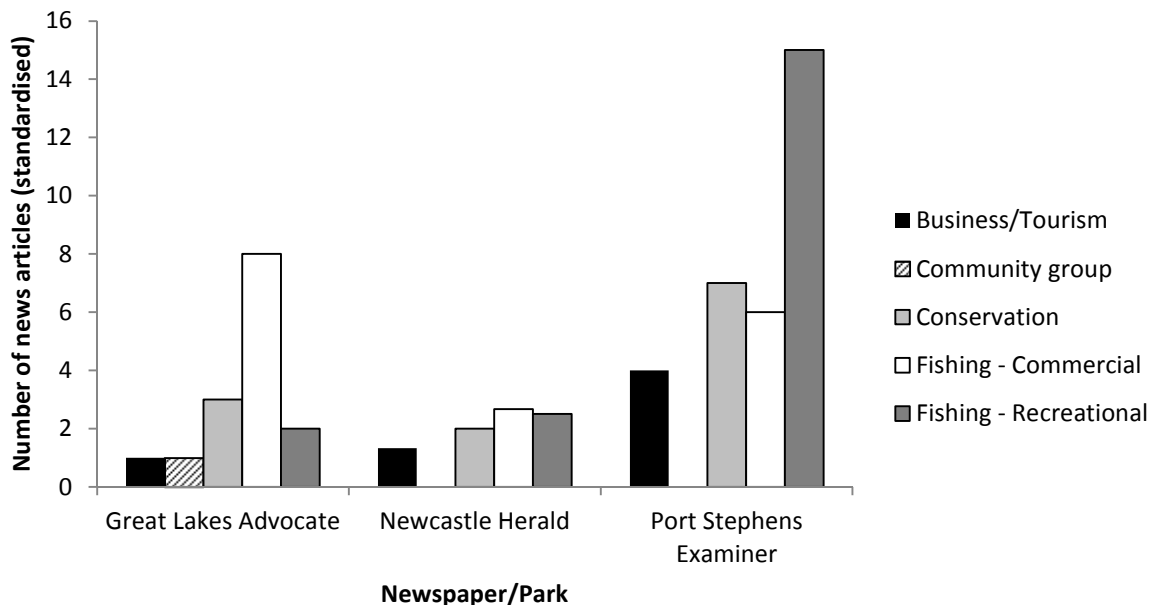


Figure 5.4: Representation of major stakeholder groups as primary definer in marine park news articles according to source publication

A total of 47 articles were examined in the PSGLMP to determine dominant media frames. It found a number of key themes within the PSGLMP media.

Why do we need a marine park?

Discussion in the media about the need for or justification of the marine park in the PSGLMP tended to focus on the likely benefits of the marine park to local communities through improved fishing or tourism. However there was also discussion about the primary purpose of the park, with efforts made by spokespeople to differentiate this aim (fisheries management) from biodiversity conservation goals. Table 5.2 shows that the main arguments put forward to justify the necessity of the marine park by proponents focused on the perceived benefits of the park with minimal discussion about the threats to the marine environment to be addressed by the marine park.

Table 5.2: Supportive media frames: Benefits and value of the marine park

Supporting argument	Number of references	Quote
Benefits of the marine park		
Improved fishing: marine park will improve fish stocks for recreational and professional fishers	13	<i>However NSW Primary Industries Minister, Ian MacDonald claims the decision will over time provide benefits for both recreational and professional fishers with increased fish numbers.</i> Great Lakes Advocate, 7/12/2005, p7
Biodiversity or habitat protection: marine park will protect marine biodiversity	7	<i>Spokeswoman Claire Dunn said: "The whole idea of a marine park is to protect biodiversity and the science says if you want to meet the conservation for the entire region, which is what they are aiming for, then you need to create a lot more than 20 per cent.</i> Newcastle Herald, 9/05/2006, p5
Tourism and economics: marine park will benefit tourism	4	<i>"I believe in the future tourism will be the winner because there will be more fish to catch and still an opportunity for jet skis and boating," he said.</i> Port Stephens Examiner, 21/12/06, p13
Threats the marine park will address		
Fish stock declines: marine park needed to restore fish stocks	4	<i>Visiting Nelson Bay on Friday, State Environment Minister Bob Debus said the parks were needed because it was "an inescapable reality" that fish stocks were much lower than they were "in the old days".</i> Newcastle Herald, 6/12/05, p6
Increasing population/ development: marine park needed to address increased use from growing population	2	<i>The greater the level of coastal development in and around the Hunter, the greater the need for the Port Stephens Great Lakes Marine Park, NSW Environment Minister Bob Debus said yesterday.</i> Newcastle Herald, 3/12/05, p9

Discussions about threats were more often conducted by marine park opponents. They cited threats to the marine environment that they felt the marine park would be ineffective in managing, such as pollution. They also highlighted a range of other concerns relating to the effectiveness or necessity of the marine park, particularly the validity of the science used in its planning (Table 5.3).

Table 5.3: Critical media frames: Socio-economic impacts of the marine park

Opposing argument	Number of references	Quote
Science inadequate: Marine Park based on politics not science, or science behind value of MPAs (in improving fish stocks) inconclusive.	11	<i>But opponents say there is no conclusive proof that fishing restrictions will improve fish stocks. "They are not dealing with the facts," Dr Jenkins said. "If there was good science behind this, I would support the marine park."</i> Newcastle Herald, 13/05/06, p4
Marine park ineffective or not needed: will not manage key threats	7	<i>... "all they're doing is diverting the attention away from the problems with pollution and the massive expense it would be to fix it," he said.. "Recreational fishing had a low impact on biodiversity", he said. "So . . . why are we being targeted?"</i> Spokesperson, Ecofishers, Newcastle Herald, 9 May 2006: p4–5

Socio-economic impacts of the park

One of the leading arguments against the establishment of the marine park was related to the socio-economic impacts it would have on the coastal communities within its boundaries (Table 5.4). These related to impacts on individuals - such as loss of income or employment - and were a particular issue raised by professional fishers or fishing tackle shop owners. More general concerns about the community-wide impacts of the park were also raised, particularly in regard to loss of fishing tourism.

Table 5.4: Critical media frames: Socio-economic impacts of the marine park

Opposing argument	Number of references	Quote
Individual impacts (loss of income or business or employment)	8	<i>"It's hard enough with rising fuel costs and imports and things to be a fisherman nowadays, let alone having to cop this as well," Mr Lukin said. "We're going to be the threatened species, not the bloody fish."</i> Newcastle Herald, 9/05/06, p5
Impact on the community (loss of tourism)	7	<i>As a 30-year veteran working in the marine industry currently being employed at boating retailer Graham Barclay Marine Mr Frost fears it will kill tourism in the region. "People will bypass us and go north. Towns around Bungwahl and Smiths Lake will be destroyed, and Forster is next."</i> Newcastle Herald, 13/05/2006 p1
Seafood price or availability	6	<i>Seafood food (sic) prices are tipped to rise in the wake of the creation of the final zoning plans for the Port Stephens Great Lakes Marine Park.</i> Port Stephens Examiner, 21/12/06 p13

Government processes

The majority of the criticisms of the marine park in the PSGLMP media related to process (Table 5.5). Some spokespeople indicated that they believed the government had lied to them or betrayed them.

There were several criticisms of the consultation process - that the consultation had been inadequate and that the outcome of the process was predetermined.

Table 5.5: Critical media frames: government processes

Opposing argument	Number of references	Quote
Preconceived agenda – Green driven, marine park the result of a preference deal with the Greens.	17	“The state government has been losing popularity in the polls and is not confident of winning next year’s State election without the extreme Green preferences” Port Stephens Examiner, 11/05/06, p2
Consultation inadequate: local communities not listened to	12	“Premier lemma might be wanting to enhance his green credentials but announcing the park and saying there will be consultation afterwards is code for saying we don’t care what you think, this is what will happen,” the Nationals MP said. Newcastle Herald, 01/12/05, p4

5.3.1.2 Editorials

In total 12 editorials were found in the PSGLMP newspapers relating to the marine park. As with news articles the majority of editorials dealing with the marine park issue occurred during 2006 when the planning process was underway. The *Newcastle Herald* dominated the number of editorials, producing 9 of the 12 editorials found in the PSGLMP media, the majority of which took a neutral position (Figure 5.5).

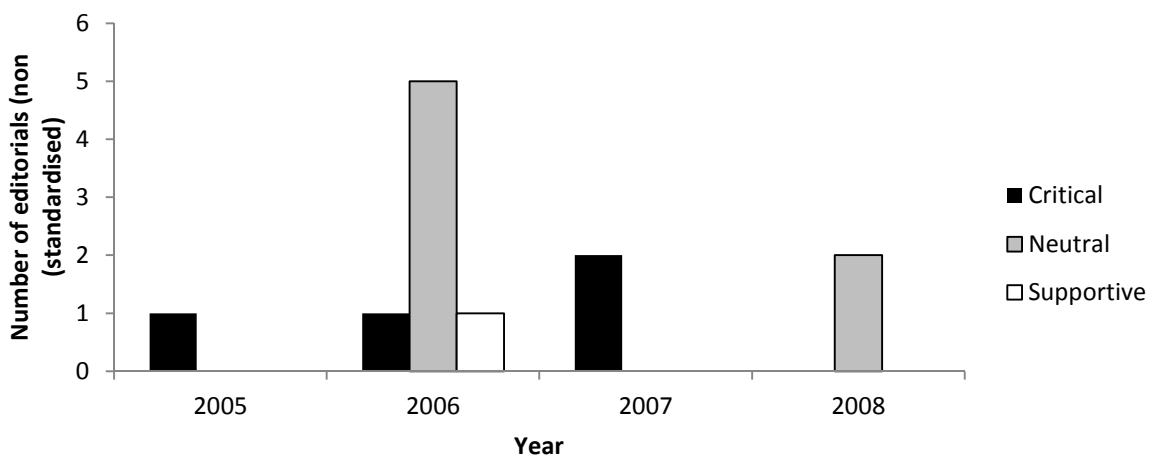


Figure 5.5: Coverage of the marine park in editorials in PSGLMP local print media 2005-2010

In addition, the *Newcastle Herald* ran a number of opinion pieces that included fishing columns often written by members of the recreational fishing lobby group Ecofishers. They were highly critical of the marine park and process. In one opinion piece written in response to these columns, a regular *Newcastle Herald* contributor targeted Ecofishers as self-interested environmental vandals:

Get a load of this jingoistic garbage: "The organisation defends the freedoms of all outdoor Australians and their right to interact with the natural world." Big call, eh. Let's call them Egofishers. Instead of the sustainability of fish sanctuaries, Egofishers promotes its own sustainable solution, which is to sustain its freedom to fish anywhere.

Newcastle Herald, Opinion piece, 10/05/06, p14

5.3.1.3 Letters to the Editor

In total 181 (109 when standardised) letters to the editor were found in the PSGLMP newspapers. Letters to the editor were heavily dominated by critical letters in the early stages of the planning and implementation of the park. However after the zoning plan was finalised and implemented (in early 2007) the number of letters published dropped significantly (Figure 5.6).

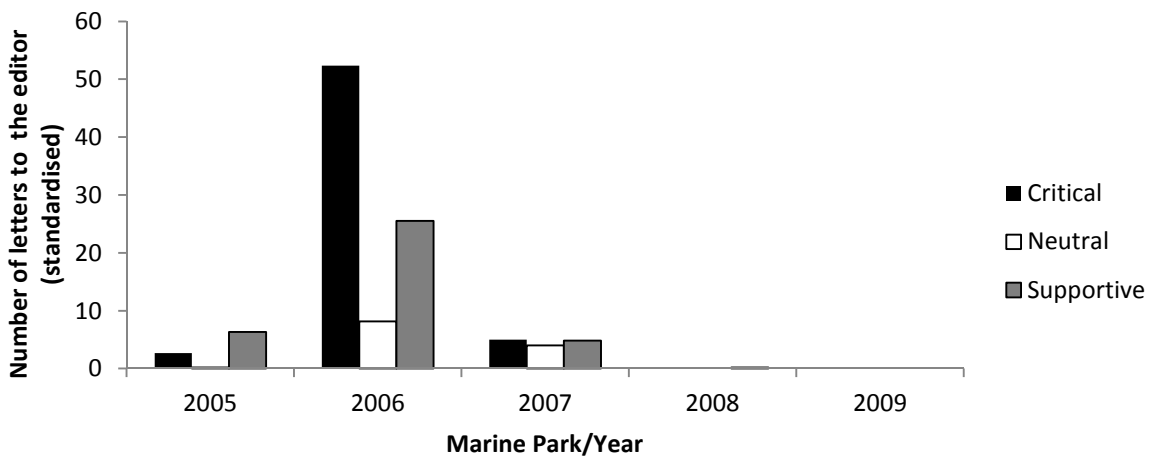


Figure 5.6: Letters to the editor on the marine park issue in PSGLMP local print media 2005-2010

When the number of letters was standardised to take into account publication frequency the *Port Stephens Examiner* emerged as the dominant newspaper. It published the most letters on the issue, the majority of which were critical (Figure 5.7). The *Newcastle Herald* continued its neutral editorial position by publishing equal numbers of supportive and critical letters while the *Great Lakes Advocate* had a slightly greater number of critical letters. Given the larger circulation of the *Newcastle Herald* it is likely greater editorial control was exerted over the letters section of the newspaper. The *Port Stephens Examiner* and the *Great Lakes Advocate*, being smaller newspapers, published the majority of received letters (*Pers. Comm. Editor Great Lakes Advocate*).

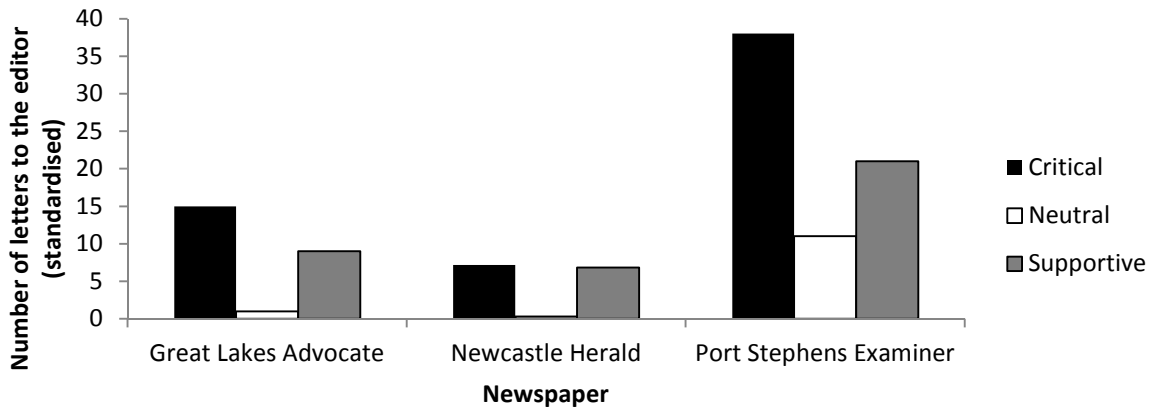


Figure 5.7: Letters to the editor on the marine park issue in local print media by publication 2005-2010

Finally, Table 5.6 demonstrates that on average letter writers in the PSGLMP had 1.5 letters published, with all the newspapers showing relatively consistent proportions of letters per writer. The most letters from a single writer were published in the *Port Stephens Examiner* from a recreational fisher who generated 11 letters over the study period, all of which were critical.

Table 5.6: Number of writers responsible for letters to the editor according to source publication (2005-2010)

Marine Park	Newspaper	Number of letters	Number of writers	Letters/writer	Average
PSGLMP	<i>Great Lakes Advocate</i>	25	16	1.56	1.5
	<i>Newcastle Herald</i>	86	59	1.46	
	<i>Port Stephens Examiner</i>	70	47	1.49	

5.3.1.4 Media spokespeople in the PSGLMP

A number of key media figures were interviewed in relation to the media coverage of the PSGLMP. These included the editor of the *Great Lakes Advocate*, one conservation spokesperson prominent in the media at the time, and two recreational fishing spokespeople. Table 5.7 gives an indication of the level of coverage these spokespeople and their associated organisations received in the media at the time.

Table 5.7: Number of articles and letters to the editor featuring selected interview participants between 2005 and 2010

Spokesperson/group	Articles	Letters to the editor
Recreational Fishing 1	7	1
Recreational Fishing 2	11	2
Conservation	5	11

Both fishers interviewed are extremely active and engaged fishers, with fishing playing a dominant role in their lives. Both had moved to the area for career reasons however they had opposing views

on the marine park with one very engaged with the planning process and supportive of its outcomes and the other a strident opponent of the park.

For the conservation spokesperson marine issues was one of a variety of conservation endeavours in which she was engaged, with active roles in previous and current forestry campaigns in the area. At the time of the planning process she was employed full time by one of the key conservation groups engaged in the process and indicated that the group's entry into the marine park campaign was an opportunistic diversion from its core business at the time.

Essentially it was a local decision, we'd just finished a big forest campaign and tied up a few other loose ends but it was really a case of 'well, what do we do now?', it was a bit of an experiment.

Conservationist, PSGLMP

An analysis of the interviews conducted with the 3 spokespeople interviewed found that the dominant points of discussion centred around two main areas.

Theme 1: Politics & Ideology

While both fishing spokespeople were very engaged in the political debate that surrounded the marine park there was a significant difference between their views. One fisher saw himself as middle of the road politically but felt ideology had played a large role in the controversy over the PSGLMP.

Anyone who tells you that it has impacted them is using it as another reason to justify their basic philosophy (against MPs).

Recreational fisher, PSGLMP

The other highly vocal fishing spokesperson expressed a deep resentment of the Greens and politicians within the NSW Labor Party. He saw his role in the media debate as uncovering the lies and deception of politicians from these political persuasions. In particular he argued the Greens masked their socialist policies by their conservation arguments and disclosing this was a fundamental component of his campaign against the marine park.

But I have an even bigger concern with the Greens movement because I think they are dishonest and I want to expose them for who they really are, what they really believe so that people know when they are voting Green they are not necessarily voting for conservation.

Recreational fisher, PSGLMP

Despite their differing views both fishing spokespeople were active in the use of media to shame politicians or spur them into action. They had a high level of understanding of the political environment in which the PSGLMP was declared and were involved in active lobbying of politicians. Both felt like they had established media networks that provided them with some power in the debate.

Theme 2: On the side of right

All three spokespeople felt they were speaking for the majority opinion in the views they presented to the media. The fishers interviewed criticised other fishing spokespeople who they argued were not representative of their constituents. One felt strongly that the majority of marine park opponents in his community were driven by ideology rather than fact. He felt he represented the majority of fishers in his more moderate views:

only between 2 and 4% of rec fishers in this state are members of clubs, so 96% fishers are just fun loving, who like to dangle a line and take their kids and they deserve consideration as much as the so called experts, they are silent massive majority but it's the 4% that make all the noise.

Recreational fisher, PSGLMP

The second fisher rejected the notion of fisher 1 being representative and felt he had done nothing to support the fishing community.

he wasn't doing anything to support the recreational fishing in the area, and you talk to any recreational fisherman in any club and they'll tell you the same thing. Yet he is declared by the Examiner and the Fisheries Department as our representative – we don't want him as our representative.

Recreational fisher, PSGLMP

The conservationist felt her position represented the wider public as a whole and cited research they had commissioned which supported this view.

we did commission a public opinion report...and that was great because it did give us a bit of mandate behind what we were doing, it didn't feel like we were just making it up that people really did want support for the parks...we needed something to say look it's not just us and it pretty much overwhelming said that people did want protection for the sea.

Conservationist, PSGLMP

Despite the fact that all three prominent media spokespeople felt they represented the majority opinion they all felt that other interest groups had dominated the planning process and highjacked the debate.

5.3.1.5 Summary of PSGLMP media coverage

The media within the PSGLMP was largely balanced and neutral particularly towards the end of the study period and included a wide diversity of sources, letter writers and primary definers. The messages of key media sources was varied reflecting the diversity of opinions that existed within the community, including within stakeholder groups such as recreational fishers.

5.3.2 Media and the BMP planning process

5.3.2.1 News articles

In total 315 articles (262 when standardised) relating to the Marine Park were found in the BMP newspapers between December 2005 and December 2010. Figure 5.8 illustrates how local newspapers in the BMP covered the marine park over the course of the debate. It indicates that maximum coverage occurred during 2006, which corresponded to the development of the zoning plan. Critical articles dominated the coverage in that year but tended to be more balanced with supportive and neutral articles in the remainder of the study period.

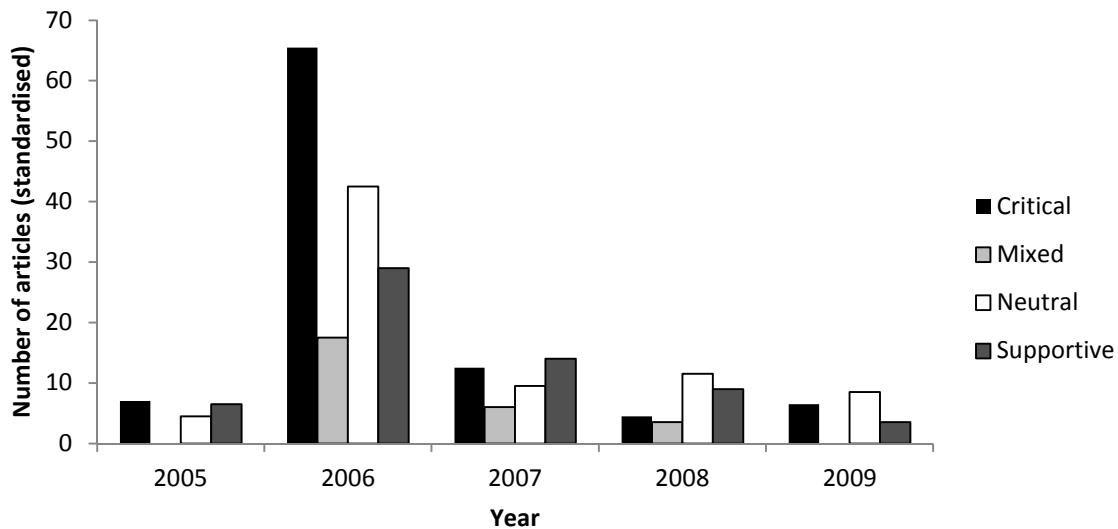


Figure 5.8: Coverage of the marine park in news articles of BMP local print media 2005-2010

Coverage of the marine park issue was heavily dominated by one publication, the *Narooma News* (Figure 5.9). While this newspaper had the lowest circulation and readership of all the newspapers studied it had a disproportionate coverage of the marine park in comparison to other newspapers in the BMP, particularly in the 2006 planning year. In total 196 articles, or 62% of the total number of articles examined in the BMP, were published in the *Narooma News*. Across all the publications critical articles were largely balanced by neutral articles, and to a lesser extent by supportive articles.

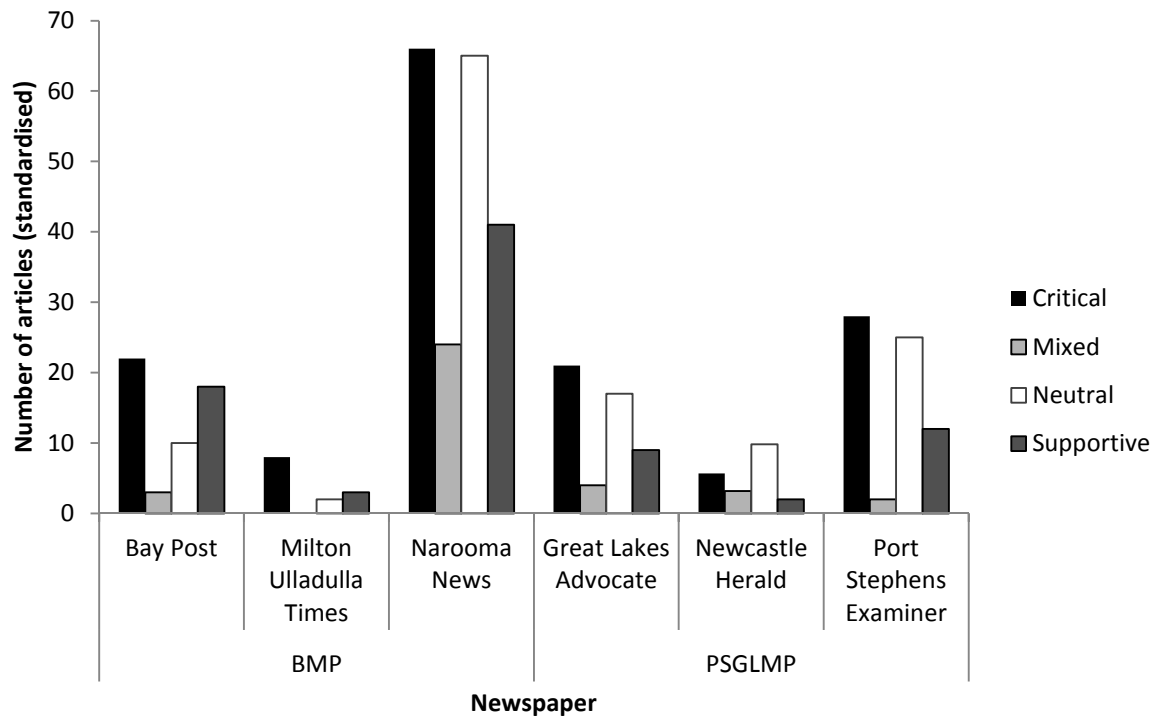


Figure 5.9: Coverage of the Batemans Marine Park in news articles according to source publication 2005-2010

The role of the primary definer in each news article was classified according to stakeholder group (Figure 5.10). Coverage was given to a broad diversity of views however Government sources and politicians dominated the role of primary definer. Primary definers from non-Government sources included fishing interests (professional and recreational), business or tourism and conservation groups. Marine scientists and Indigenous spokespeople were rarely primary definers of news articles relating to the marine park. A major media source was two groups (classified as community groups in Figure 5.10) that were aligned with recreational fishing interests but also claimed to represent a broader constituency of professional fishers, business owners and the general public.

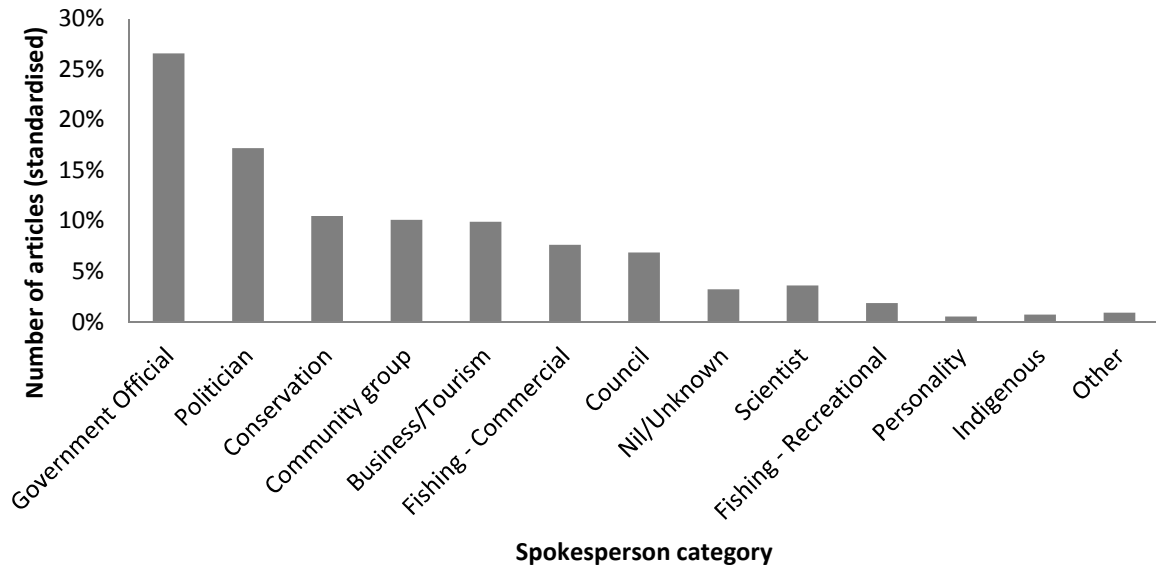


Figure 5.10: Representation of major stakeholder groups as primary definer in marine park news articles in 2005-2010 in the areas covered by the BMP.

In the BMP the dominant non-Government primary definers were fishing interests (made up of professional and recreational fishers as well as the ‘community group’ category), conservation groups and business and tourism spokespeople. Figure 5.11 shows that the two dominant newspapers engaged in covering the marine park major newspapers, the *Bay Post* and *Narooma News*, gave relatively equal coverage to these major stakeholder groups.

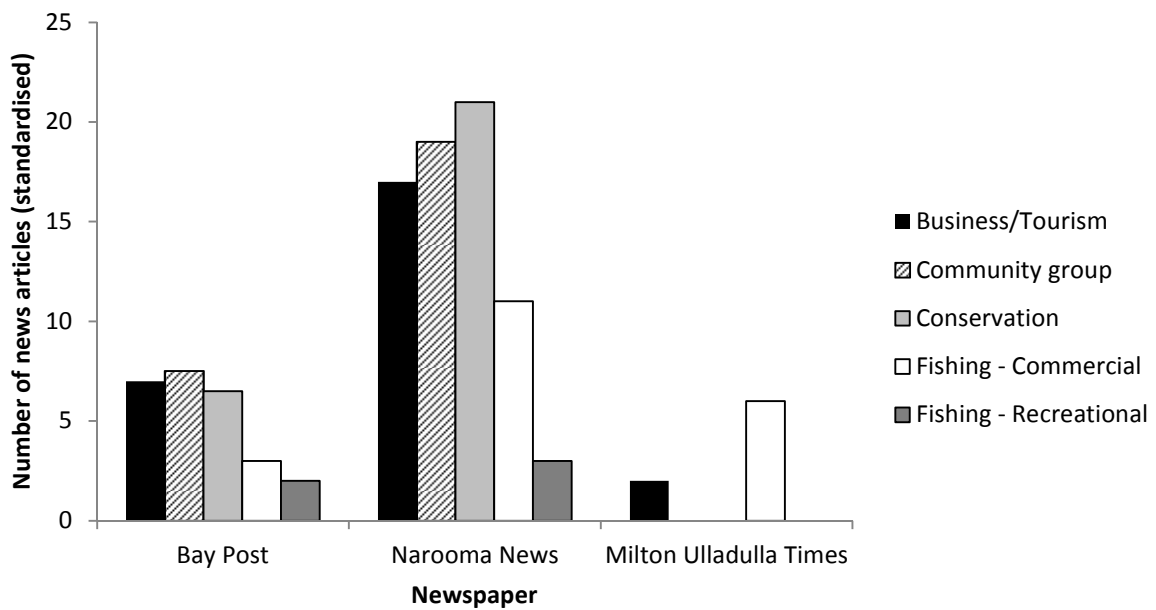


Figure 5.11: Representation of major stakeholder groups as primary definer in BMP marine park news articles in 2005-2010 according to source publication.

An analysis of dominant frames was conducted within a subsection of news articles around key dates in the planning process. Forty-three articles were examined in the BMP and a number of key themes or dominant frames were revealed.

Why do we need a marine park?

Discussion in the media about the need for or justification of the BMP tended to focus on the likely benefits of the marine park to local communities through improved fishing or tourism. Table 5.8 shows the main arguments put forward to justify the necessity of the marine park by proponents. There was minimal discussion about the threats to the marine environment.

Table 5.8: Supportive media frames: Benefits and value of the marine park

Supporting argument	Number of coding references	Example quote
Benefits of the marine park		
Tourism and economics: marine park will benefit tourism	17	<i>The park could also bring with it widespread boons for the Bay's human population. Mr Fleming said it would ensure the long-term viability of tourism on the Nature Coast and boost charter boat business opportunities.</i> Bay Post, 2/12/2005, p4
Improved fishing: marine park will improve fish stocks for recreational and professional fishers	13	<i>"The final result is that you can fish in 80 per cent of the marine park and that fishing is certain to get better."</i> Bay Post, 15/12/2006, p8
Biodiversity or habitat protection: marine park will protect marine biodiversity	4	<i>"The creation of this marine park represents a win for all stakeholders" he said. "Firstly and most importantly for marine biodiversity and coastal ecosystems"</i> Bay Post, 7/12/2005, p6
Threats the marine park will address		
Threatened species (Grey Nurse Shark): marine park will benefit threatened species	5	<i>The Bay's population of grey nurse sharks has been given a fresh chance of survival, its home now safely within the reaches of a new marine park.</i> Bay Post, 02/12/05, p4
Fish stock declines/over fishing: marine park needed to restore fish stocks	3	<i>"With fish stocks in decline and many marine species facing an uncertain future, it is vital that adequate areas of our marine environment are set aside in protected sanctuary zones"</i> Narooma News, 19/07/06, p9
Increasing population: marine park needed to address increased use from growing population	3	<i>"With forecasts suggesting considerable population increases over the next 25 years, it is essential that we make the right decisions now to protect the things we value most"</i> Narooma News, 04/07/07, p3

A variation on this theme was exploration of the value of a marine park and its effectiveness in achieving conservation outcomes. Critics in the BMP particularly focused on a belief that the science used in the marine park planning was inadequate or inappropriate for the local area.

"We want a park based on proper science with seasonal closures based on Fisheries information," Mr Tait said.

Bay Post, 20 December 2006

Socio-economic impacts of the park

One of the leading arguments against the establishment of the marine park was the potential for socio-economic impacts on coastal communities within its boundaries (Table 5.9).

Table 5.9: Critical media frames: Socio-economic impacts of the marine park

Opposing argument	Number of references	Quote
Individual impacts (loss of income or business or employment)	9	<i>"The professional blokes might as well tie up their boats and let them rot" he said</i> Bay Post, 19/07/06, p4
Impact on the community (loss of tourism)	7	<i>"They're very poor reasons to put a lot of people out of business, not just charter operators but motels, tackle shops and tourism businesses in general," Mr Stuart said. "Everyone suffers."</i> Narooma News, 19/7/2006 p2
Impacts on family recreation	5	<i>Dr Creagh said family fishing holidays within the park area would become a thing of the past</i> Bay Post, 19/07/06, p4

Government processes

The majority of the criticisms of the marine park in the BMP media related to process (Table 5.10). Some spokespeople indicated that they believed the government had lied to them or betrayed them and that the marine park was not supported by science. There were several criticisms of the consultation process, including that it had been inadequate and that the outcome was predetermined. There were also criticisms that there was too little education about the zoning plan once it was in place.

Table 5.10: Critical media frames: Socio-economic impacts of the marine park

Opposing argument	Number of references	Quote
Deceived or betrayed – government lies	14	<i>But Bermagui Fisherman's Cooperative chairman Rocky Lagana said trawlers provided the bulk of the co-op's fish and the State Government had some explaining to do as the Fisheries Minister Ian McDonald had promised some trawling would be allowed in the park</i> Narooma News, 12/04/06
Consultation inadequate: local communities not listened to	10	<i>Mr Constance said the Marine Park Authority and Labor Government had ignored the community. "Labor has been irresponsible in rushing the zoning plan through in less than six months"</i> Bay Post, 15/12/06, p4
Preconceived agenda: Green driven, marine park the result of a preference deal with the Greens.	9	<i>"This is all about appeasing the Greens in the lead up to next year's poll." Mr Constance said</i> Narooma News, 19/07/06, p9
Education inadequate	9	<i>Mass confusion is about to erupt on our waters, as ill-informed fishers venture into the Batemans Marine Park. That's according to lobbyist Jack Tait, who has opposed the introduction of the marine park from the outset.</i> Bay Post, 27/06/07

5.3.2.2 Editorials

Seventeen editorials (15 when standardised) were found in the BMP newspapers. The majority of editorials dealing with the marine park issue occurred during 2006 when the planning process was underway. Critical or neutral messages dominated these editorials. Following implementation of the park the emphasis shifted to neutral or supportive messages (Figure 5.12). This may be a reflection of a change in staff at the Narooma News that occurred about mid-way through the planning process in 2006 as the editorials were predominately from the *Narooma News* - 13 of the 17 editorials (or 76%) examined were sourced from that newspaper.

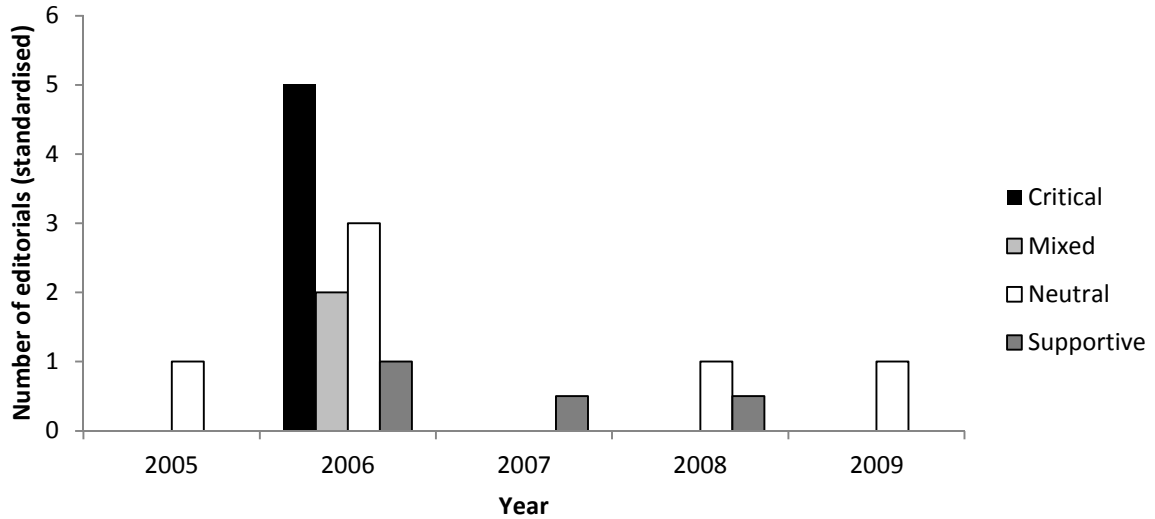


Figure 5.12: Coverage of the marine park in editorials in BMP local print media in 2005-2010.

5.3.2.3 Letters to the Editor

BMP papers published a large numbers of letters, particularly critical letters, throughout the study period (Figure 5.13). In total 284 letters to the editor (242.5 when standardised) were found in the BMP newspapers. Critical letters have dominated since 2006, however, there was a trend for increasing representation of neutral or supportive letters in later years. Again the *Narooma News* published far greater numbers of letters to the editor - predominately critical - than any of the other publications. In total 201 (71%) of the letters in the BMP were printed in the *Narooma News* of which 75% were critical.

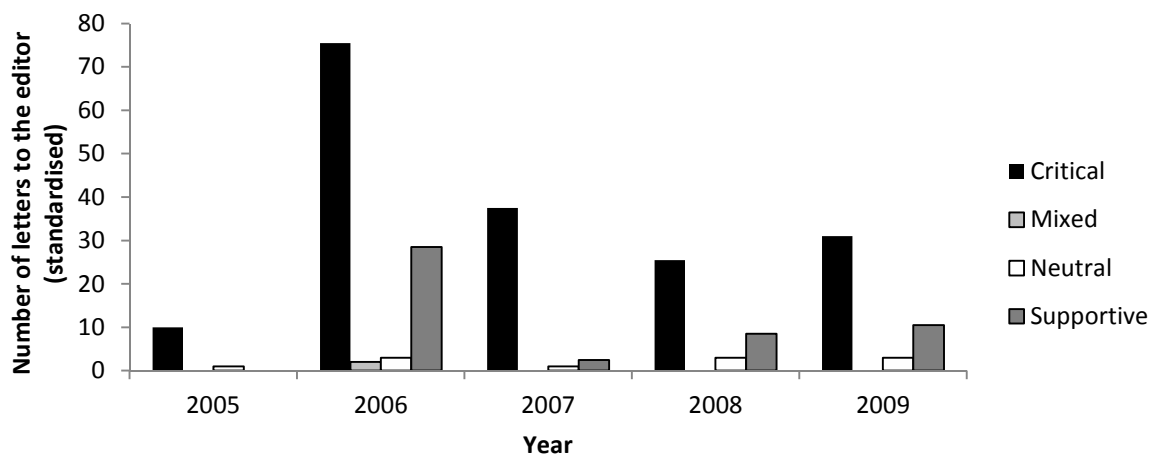


Figure 5.13: Letters to the editor on the marine park issue in BMP local print media in 2005-2010.

Each letter writer submitted an average of 2.2 letters, with the *Narooma News* showing the highest number of letters per writer (Table 5.11). In fact in the *Narooma News* two writers accounted for 61 of the 201 letters published between 2005 and 2010 (representing 30% of the letters to that newspaper). An interview with the editor of the *Narooma News* revealed the newspaper has a policy of publishing all received letters.

Table 5.11: Number of writers responsible for letters to the editor according to source publication (2005-2010).

Marine Park	Newspaper	Number of letters	Number of writers	Letters/writer	Average/Park
BMP	<i>Bay Post</i>	83	46	1.8	2.2
	<i>Narooma News</i>	201	75	2.7	

5.3.2.4 Media spokespeople

A number of key media figures were interviewed in relation to the media coverage of the BMP. This included the editor of the *Narooma News*, three local conservation spokespeople prominent in the media at the time and three recreational fishing spokespeople – two of these three fishing spokespeople were representatives of the two community groups referenced in Figure 5.10. Table 5.12 gives an indication of the level of coverage these spokespeople and their associated organisations received in the media at the time.

Table 5.12: Number of articles and letters to the editor featuring selected interview participants between 2005 and 2010

Spokesperson/group	Articles	Letters to the editor
Recreational Fishing 1	17	2
Recreational Fishing 2	23	40
Recreational Fishing 3	1	27
Conservation 1	10	12
Conservation 2	6	19
Conservation 3	6	2

Two of the three fishers interviewed are extremely active and engaged fishers, with fishing playing a dominant role in their lives. Both had moved to the area to pursue a new lifestyle and new career and fishing played a major part in that new lifestyle. The third fisher, a retiree and the most active in the media, while still a very keen fisher, is less actively engaged in saltwater environments, preferring freshwater fishing.

Fishing isn't a religion for me but it's something I enjoy doing because of the peace, especially fly fishing, its relaxing.

Recreational fisher BMP

For at least two of the three conservation spokespeople marine issues was one of a variety of conservation endeavours in which they were engaged, with active roles in previous and current forestry campaigns, bush regeneration and shorebird recovery as well as a range of other campaigns relating to coastal development, mining and industry. Two were retired and all three talked about the constraints on development, the natural landscape and the ability to 'make a difference' as some of the key reasons they chose to live on the south coast.

You can really make a difference living down here, the environment has not got so bad where we're not in a position to turn things around.

Conservationist BMP

An analysis of the interviews conducted with the six spokespeople interviewed found that the dominant points of discussion centred around three main areas.

Theme 1: Politics

The most dominant feature of the discussions with the main media spokespeople from both the conservation and fishing sectors was a heavy focus on politics and ideology (Table 5.13). All the spokespeople had a high level of understanding of the political environment in which the BMP was declared and were involved in active lobbying of politicians. The media was essentially a lobbying tool that they employed as part of their wider campaign. Two of the most prominent spokespeople viewed the debate over the marine park as part of a much greater struggle, one that had deep ties with their ideological and/or political persuasions.

Theme 2: Personal attack

In a sign of how deeply divisive the BMP became within the local community many personal references were made within the interviews. Both conservationists and fishing spokespeople made frequent criticisms of the key protagonists on the opposing side and often this related back to their ideological positions (Table 5.14). For fishing spokespeople the 'enemy' they referred to often included marine conservation scientists, government officials and conservationists. For conservationists the 'enemy' was most likely to be the fishers.

Table 5.13: Count of references made to key political themes within interviews with conservation and fishing media spokespeople

Theme	Spokes-person	Count of coding references	Example quote
Politically active: discussion about lobbying efforts and involvement in direct political action	Conservation	9	<i>..we had been battling..to get professional fishing out of the Lake and ..the declaration of the Batemans Marine Park was the platform for that to happen and in Bob Debus' media release..he acknowledges the conservation efforts of groups like Coastwatchers and Friends of Durras in removing professional netting from the Clyde</i>
	Fishing	14	<i>We were running a political campaign down here – Labor or Liberal I really don't care anymore to me they're all idiots the whole lot of them they're only there for the take but when I find myself taking an interest in politics all of a sudden on the local level because of what's going on here – something is wrong!</i>
Politically aware: general discussion of the political environment in which the debate was held	Conservation	23	<i>Look at the Coalition Government needing to do deals with the Shooters and Fishing Party, where we're going to see the environment go backwards for the next few years, you've got a Coalition government with a huge majority, they are likely to be in for the next 7 years could be another 11 years.</i>
	Fishing	4	<i>..the greatest fear that politicians have is their 3-4 year job finishing and if you can convince them that you have 25% of people agreeing with you they'll be on your side as we did with Andrew Constance (local member), and we helped him a lot.</i>
Ideological conflicts: fundamental ideological divides or criticism of other ideological positions	Conservation	8	<i>It's a classic coastal village where you have retirees, tradies who are reliant on development for jobs, so they don't like Greenies, and you have Greenies, so you have those three groups and that's common in those small coastal villages, and there's tension</i>
	Fishing	10	<i>I hate the Greens I hate them with a passion because I think they have led this country into so many errors of judgement and made this country soft.</i>

Table 5.14: Count of criticisms of the opposition within interviews with conservation and fishing media spokespeople

Theme	Spokes-person	Count of coding references	Example quote
Criticism of opponents: personal criticism of opposing side often by name	Conservation	24	<i>The Ports Committee had a meeting in January 1998 where they invited the Marine Park manager along and there were 12 people at that meeting including 2 MPA staff, so the anti-Marine Park brigade all they could muster up was 10 members. In Narooma which is meant to be the real hot bed of marine park opposition.</i>
	Fishing	17	<i>I think the marine park people down here would have no compunction at falsifying data..to get the result they want and I almost shake with anger at the thought of that, because I think that's the worse sin of science.</i>

Theme 3: Who cares wins

In the course of the interviews with the spokespeople it was clear that both sides saw this as a “battle” in which there were winners and losers and both sides sought to position themselves as winners fighting for a just cause. Table 5.15 includes some examples of the adversarial way in which the debate was conducted in the area (see also Box 1) and how the media was often used as the battleground on which the war was fought.

Table 5.15: Count of references to battle terminology within interviews with conservation and fishing media spokespeople

Theme	Spokes-person	Count of coding references	Example quote
The marine park debate as a battle: use of battle language	Conservation	12	<i>they've been very persistent, but that's fine the conservation movement is persistent too and it's just a matter of who is going to outlast who</i>
	Fishing	3	<i>I study the opposition very carefully</i>
Local media the battleground: reference to local media being the medium on which the battle was fought	Conservation	3	<i>I wrote to the Narooma News and said let's sit down with the fishermen of Narooma and let's work out a way we can change this..and it was 'you've just admitted there was no science in this marine park', same old same old. I offered an olive branch and they hit me back with a bit of 2 by 3.</i>
	Fishing	10	<i>When I have my attacks on him published in the paper I can walk to work and people stop me and say to me 'get into him', because they hate marine parks..I can..have 15-20 people come up and say 'very good letter'</i>

Both sides of this battle sought to position themselves as fighting on the side of good. Both sides sought to establish their environmental credentials, to highlight that they cared about the environment more than their opponents.

Now I'm a mountain bike rider, I've lost areas, one of my favourite areas I can't go riding in, it's been declared wilderness - I miss cycling in the wilderness area but I was lucky to go there and we've got an increasing population, a very mobile population and it's for the greater good, we compromise a little bit in looking after our environment.

Conservationist BMP

The biggest seagrass bed here is still not covered its open for people to go in and destroy it, but...we want that area locked off because it is a precious area, and these lunatics that put the park in place still don't even know where it is.

Recreational fisher BMP

Both sides also sought to establish themselves as caring for their communities. The conservation spokespeople highlighted the tourism and fishing benefits of the park to the local community and held firm opinions that the park had been beneficial for the area. The fishing spokespeople, on the other hand, talked at length about the harm they believed the park had done to their local communities.

For very many reasons the marine park was a huge win for residents here as well as visitors to this shire, I have collected every fishing report for the last 6 years (and) the fishing is just so good.

Conservationist BMP

Box 1: Friends of Durras takeover

On the January 2006 the sleepy little coastal village of Durras Lake was the scene of an extraordinary battle prompted by the support of local conservation group 'Friends of Durras' for the Batemans Marine Park. Approximately 100 local fishermen and fishing tourists opposed to the marine park joined the small group and turned up to what they believed was the group's Annual General Meeting where they overthrew the president and installed new office holders. A member of the FoD explains:

So it was a very turbulent time over summer in Durras, I had the house all set up with hoses and buckets of water, I felt the house was at high risk of being burnt down and I had cars driven at me and abuse...The Friends of Durras always have a General Meeting at the end of January....in the weeks leading up to the meeting the attempted takeover lot had been going around houses..and they were particularly targeting houses with boats and joined them up to the Friends of Durras, and said this is going to be an AGM.. just 2-3 days after that meeting the so called president of the Friends of Durras attended a packed anti marine park meeting in Batemans Bay and he claimed he was the head of the Friends of Durras and he put up a motion to reject the BMP completely. They thought that by them being the Friends of Durras they would be in the best position to lobby against sanctuary zones or even the marine park...It took about 15-16 months to sort it all out - I saw it as a bit of a poker game.

Conservationist BMP

Within 12-18 months since the marine park started we've had 27 businesses close down, and not all of that was contributed to the marine park but we had our local boat dealer closed, our tackle shop closed, a pie shop closed, a garage station closed.

Recreational fisher BMP

5.3.2.5 Summary of BMP media coverage

The media within the BMP was heavily dominated by a small number of sources and letter writers engaged in an adversarial and at times deeply personal battle in which both sides positioned themselves as fighting for a noble cause. The messages of key media sources was highly polarised with recreational fishers clearly positioned as opponents to the park and conservationist as supporters. Despite this the coverage of issues in the news articles of the key papers was largely balanced between these opposing sides, while letters to the editor were dominated by critical letters. The *Narooma News* dominated the coverage accounting for the most articles, editorials and letters to the editor on the issue.

5.3.3 Comparing media coverage in the PSGLMP and BMP

There were a number of consistencies in the local news coverage of the PSGLMP and BMP. In total the BMP newspapers had significantly more articles relating to the issue than the PSGLMP newspapers ($p < 0.001$). There were no significant differences, however, between the proportions of the coverage that were categorised as critical, mixed, neutral or supportive across the two parks (Table 5.16). That is, while critical coverage dominated in each park, neither park received significantly greater critical coverage than the other.

Table 5.16. Summary of actual and expected numbers of newspaper articles (standardised), and the distribution of attitudes towards the PSGLMP and BMP in these articles. Also shown are the results of Chi square tests comparing the frequency of different types of articles in the two marine parks for 2005-2010.

	Critical		Mixed		Neutral		Supportive		Total
	Actual	Expected*	Actual	Expected	Actual	Expected	Actual	Expected	
PSGLMP	54.6	52	9.2	13	51.8	45	23	29	138.6
BMP	96	99	27	24	77	84	62	56	262
Total	151	151	36	36	129	129	85	85	400.6
Chi²	0.135		1.582		1.599		2.356		
P value	0.7137		0.2084		0.2061		0.1248		

*Expected values 35% PSGLMP, 65% BMP

In addition coverage was given to a broad diversity of views on both parks, but government sources and politicians dominated the role of primary definer (Figure 5.14).

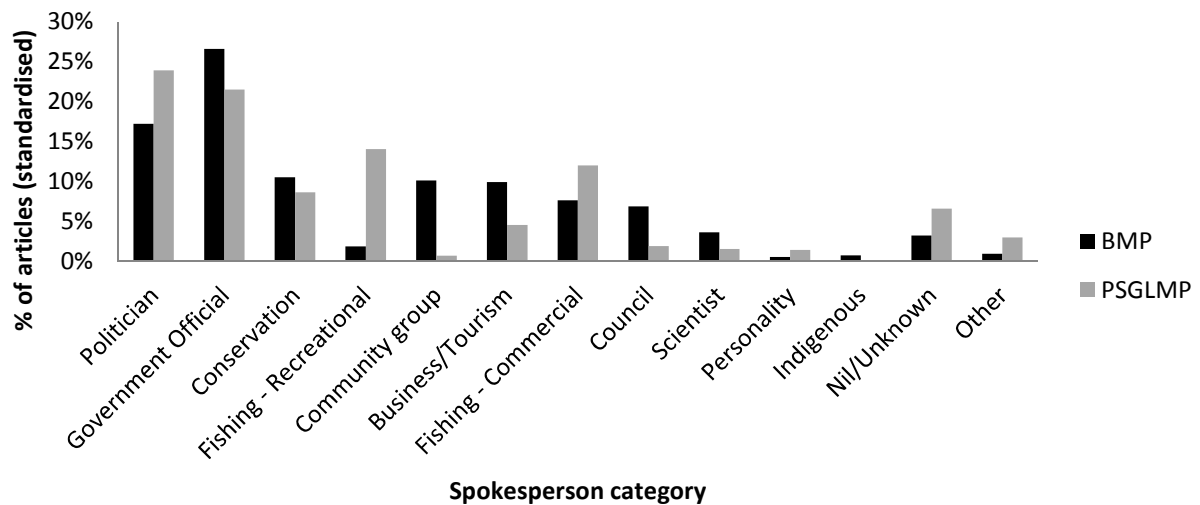


Figure 5.14: Representation of major stakeholder groups as primary definer in marine park news (expressed as percentage of total articles for each park) in 2005-2010.

In the case of government officials the vast majority of the articles (66% in the PSGLMP and 68% in the BMP) were neutral, often related to process, such as when meetings were being conducted, or when submissions were due. In the case of politicians the tone of the article was largely determined by the political persuasion of the politician featured (Figure 5.15). In the BMP the local member at the time was a member of the then (conservative) opposition party. He made up the bulk of the critical articles in which a politician was the primary definer in the BMP. Politicians from the then Labor Government on the other hand were most likely to be associated with supportive arguments. The Minister for the Environment and the Minister for Fisheries, who were jointly responsible for the implementation of the park, made up the bulk of the supportive articles in which a politician was the primary definer. The local Labor party candidate in the BMP area was virtually absent from the media coverage of this debate.

In the PSGLMP, the (then) Labor Government was far more likely to be associated with neutral, rather than supportive articles (Figure 5.15). Government politicians quoted included the relevant ministers, the Premier and local Labor party election candidates from the two electorates covered by the park. Similarly a range of politicians from different conservative parties were also used as sources in the PSGLMP, including a number of minor parties running on platforms relating to fishing and hunting.

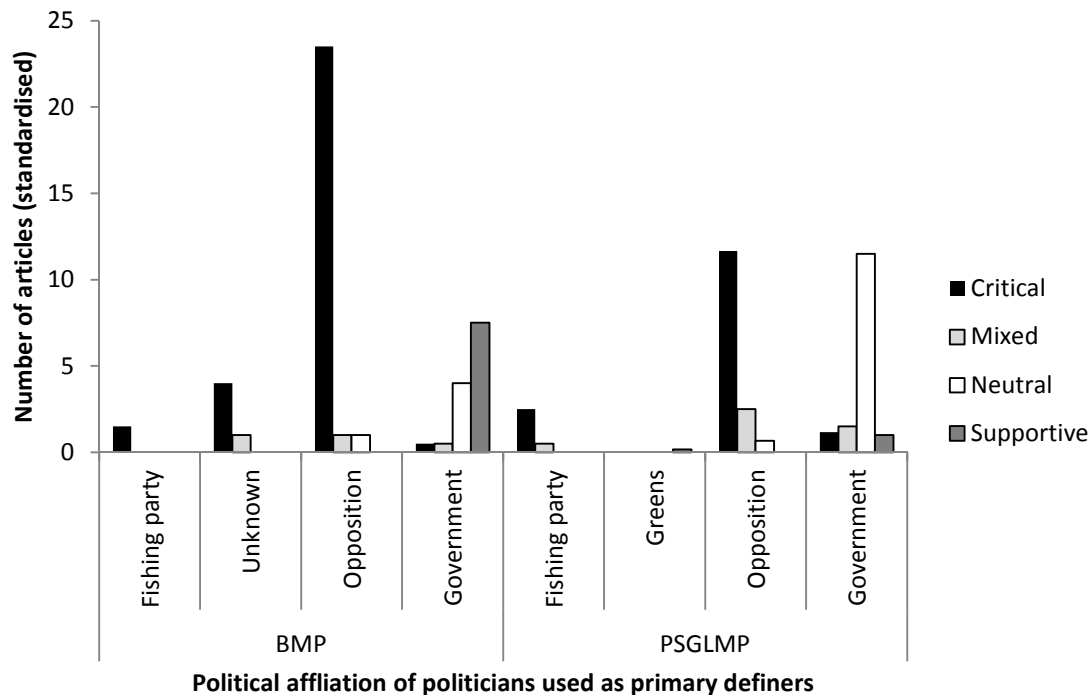


Figure 5.15: Affiliations of politicians used as primary definers and the frequency distribution of the articles in which they featured that were classified as critical, supportive, mixed or neutral. NB The 'fishing party' category is an amalgam of three fishing, hunting or outdoor recreation parties active at the time.

These results suggest a much clearer political demarcation of the dispute in the BMP along political party lines with the Labor Government cast as the supporters and the Liberal/National Party Opposition, and particularly the local Member of Parliament, cast as the opponents. In the PSGLMP Labor Government politicians and officials had a role in the media relating largely to process rather than positive messages about the marine parks. This left supportive articles primarily in the domain of conservation groups.

In the planning process for the PSGLMP a large proportion (83%) of the conservation spokespeople came from one of a number of major non-governmental organisations that were active in the planning processes of both marine parks, but were also involved in a range of other campaigns at state, national and global levels (Figure 5.16). In contrast, in the BMP greater prominence was given to spokespeople affiliated with local conservation bodies focused on community-based responses to local environmental issues (52%).

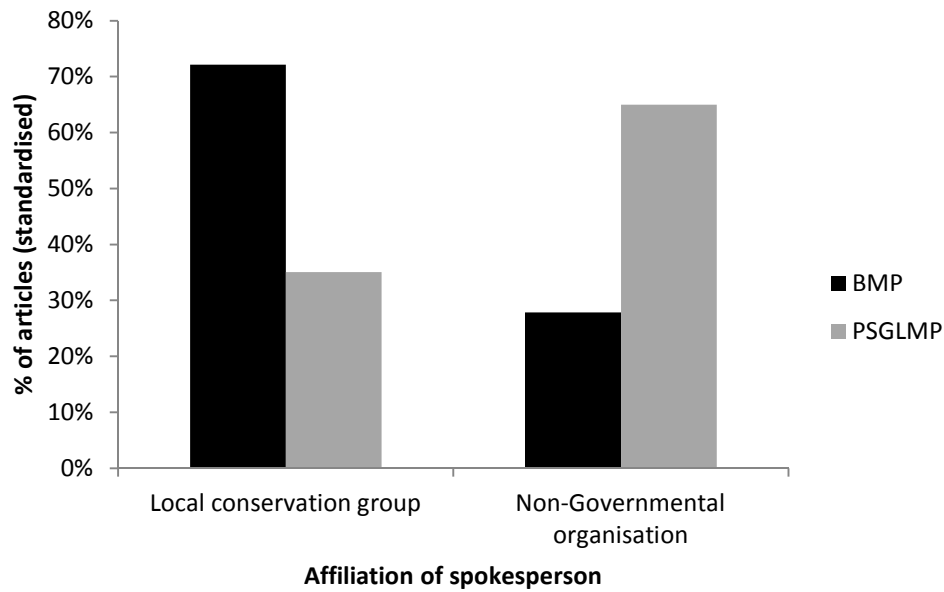


Figure 5.16: Media sources for conservation spokespeople in the BMP and PSGLMP in the period 2005–2010.

A similar pattern is clear when examining those articles classed as having fishing interests (recreational or professional) as primary definer. The category of “community groups” was also included in this analysis as this category was heavily represented in the BMP media (see Figure 5.10). Together these two community groups made up 48% of the BMP articles in which the primary definer was a fishing interest (Figure 5.17). Representatives of local fishing clubs (usually aligned with local pubs or clubs) also had a significant voice in the BMP media. Recreational fishing spokespeople in the PSGLMP process were predominately affiliated with the local branches of the state-wide recreational fishing lobby group Ecofishers. Ecofishers were active in both marine park areas, but were far less prominent in the BMP articles.

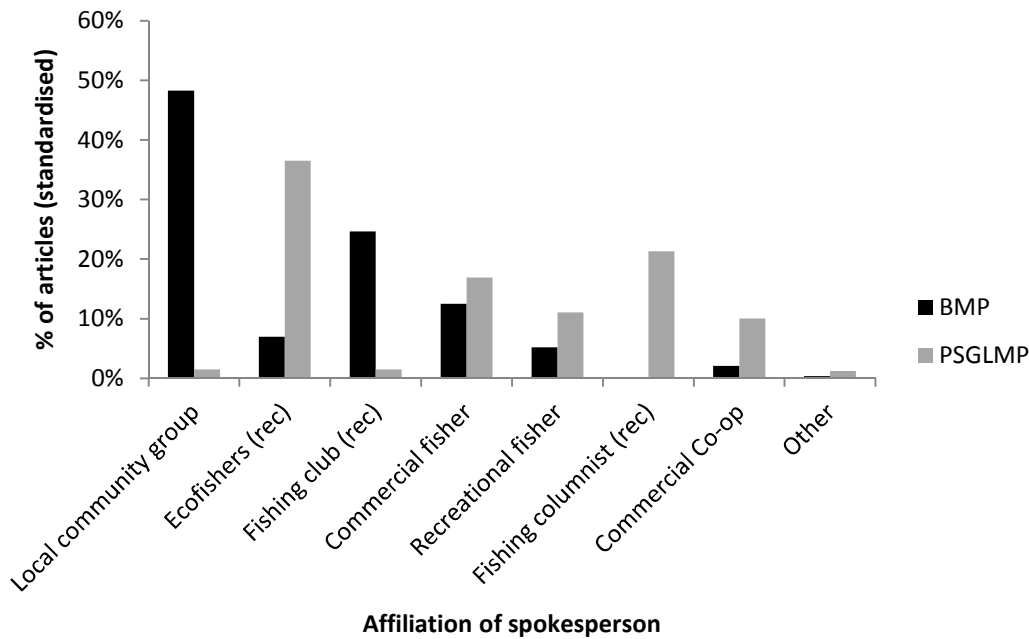


Figure 5.17: Media sources for fishing spokespersons in BMP and PSGLMP in the period 2005–2010.

Figures 5.16 and 5.17 suggest a difference in the editorial approach to media coverage of the marine parks in each community, with editors in the BMP newspapers showing an apparent preference for local sources in their coverage of the issue.

5.4 Discussion

This chapter sought to examine two of the four research questions, which focused firstly on whether differences existed between levels of community acceptance, and if so what explained these differences. Examination of letters to the editor supports the conclusions of Chapter Four that the BMP appears to have experienced a higher level of resistance, particularly from fishers. As previously stated this chapter specifically sought to examine two possible contributing factors towards these differences - media bias and the role of media campaigners. These are each discussed in detail below.

5.4.1 Media bias and inconsistencies in media reporting

The results of this study indicate that media bias was not a factor in the differential community reactions to the PSGLMP and BMP. While critical coverage dominated in both parks in the planning year it was generally balanced with neutral and supportive articles over the study period and no park received significantly greater critical coverage than the other. In addition relatively equal coverage was given to major stakeholder groups, especially recreational fishers and the conservation groups, although notably, the voices of local Indigenous communities and scientists were largely absent from the media in both communities. There was a clear difference in source selection in the two parks with BMP sources tending to be local and PSGLMP sources from regional or state bodies

5.4.1.2 Media frames

The main frames encountered in the news articles in the PSGLMP and BMP were largely consistent and centred around two major themes.

Why Do We Need a Marine Park? Fishing Benefits vs. Biodiversity Threats

A number of surveys into community attitudes towards MPAs have demonstrated that people are more likely to support an MPA if they believe it is needed (Sutton and Tobin, 2009; Thomassin et al., 2010). Therefore debates over an MPA proposal often involve arguments for and against its necessity. These are important aspects of the messages of supporters and opponents of MPAs as they are likely to have a major influence on community opinion. Analysis revealed two main “need” frames in these messages. They were the “benefit” frame, focusing largely on the benefits the park would (or would not) deliver to local communities, and the “threat” frame, which included identification of threats to the marine environment and/or identification of if/how the marine park would address these threats.

Supporters of the marine parks, including conservation groups and government politicians, tended to be associated with the “benefit” frame in the news articles included in this analysis, rather than a “threat” frame. In part this may be due to the fact that the national policy frameworks for MPAs in Australia defines MPAs as primarily a precautionary measure, or a system-wide “insurance policy” against loss of biodiversity rather than a response to site-specific threats (Australian and New Zealand Environment and Conservation Council 1998). Despite this policy the “benefit” frame found in the local news media seldom related to biodiversity protection, but rather to fishing and tourism improvements.

While references to the biodiversity benefits of marine parks were not entirely excluded from these frames they were usually included as an aside or postscript to references to the benefits to fish stocks or fishing experiences. The main “need” frames used to support the marine park emphasised a possible secondary benefit of MPAs and de-emphasised their primary objective. Perhaps more importantly, however, a focus on the “benefit” frame over a “threat” frame meant there was very little serious discussion about local threats to the marine environment, and how they would be addressed by the marine park. Consequently the threats are implied rather than explicitly scrutinised. Frames that focused on improvements in fish stocks implied that fish stocks were in decline, or under threat, and defined fishing (or overfishing) as a “problem” that the marine park would address without providing any specific evidence to the reader to support this claim.

Much more explicit links are made to these threats in the online material of conservation groups, which had a greater emphasis on the “threat” frame. Here they listed overfishing as the first in a long list of threats to a unique and vulnerable environment:

The NSW marine environment is home to thousands of different species of aquatic plants and wildlife. A unique mixing of coastal currents means that about 80 percent of these marine plants and animals are found only in Australian waters.

But these plants and animals are under threat. Overfishing, pollution, climate change, introduced marine pests, emerging diseases, inappropriate development and lack of adequate protection are all putting our marine wildlife at risk.

Nature Conservation Council of NSW (www.nccnsw.org.au/marine, accessed October 2011)

Not surprisingly, people involved in fishing in the communities in question challenged being framed as the “problem” and sought to redefine the way both the “problem” and fishing were presented in the media frames of marine park supporters. This was done through the use of a variation on the “threat” frame that highlighted alternative threats to the marine environment (apart from fishing) that they suggested the marine park would be ineffective at managing, including pollution, urban development and habitat destruction. These threats were contrasted with fishing, which was presented as a benign activity, implying that restrictions on fishing were unnecessary, unfair and inequitable. The media frame of park opponents emphasised alternative threats to the marine environment and de-emphasised the threats posed by fishing. They also de-emphasised the value of MPAs in managing threats apart from fishing.

Fishing spokespeople also challenged the validity of the “benefit” frame by focusing on possible social and economic costs, particularly as they related to loss of tourism, loss of income to local businesses or jobs to professional fishers, and the loss of family recreation. Finally, marine park opponents reinforced their arguments against the necessity of a marine park by questioning the political motivations behind the declarations, suggesting they were purely a political exercise rather than one designed to address any environmental outcomes.

Many of these themes are repeated in the online material of fishing groups such as Ecofishers, however one message the web material contained that was seldom encountered in the media was the concept of MPAs as an infringement of fishers’ “rights”.

Our alignment is for the rights and responsibilities of recreational fishers. We are totally committed to you and preserving your rights.

Ecofishers homepage (www.ecofishers.com, accessed October 2011).

The introduction of the concept of fishers’ “rights” elevates the debate from a complex dispute over access and use to a clash of ideology, and it highlights a perceived shift of the conservation movement from the fringes of power to the empowered. It demonstrates that these resistance movements positioned themselves as the “repressed” in this debate, fighting to protect their way of life and their voice from the government, the conservation movement and those they saw as eroding their rights. The extent to which this ideological dispute was portrayed in the PSGLMP and BMP media is explored further in Section 5.8.

Will a Marine Park Work? Dodgy Science vs. Scientific Consensus

Closely related to questions surrounding the necessity of MPAs are questions around their effectiveness in achieving their stated goals. As seen in the previous section, arguments from supporters and opponents about the need for the marine parks were framed around an area outside the actual objectives of the parks. Frames relating to the likely effectiveness of the two parks followed a similar trend by focusing on the fisheries management credentials of MPAs, one of the most contested areas of MPA science (Barrett et al. 2007; Gladstone 2007; Kearney 2007b, 2007a, 2009). This contestation was reflected in the media coverage and allowed for an inflated sense of uncertainty surrounding MPA science generally. In the majority of cases, however, sources were politicians, conservation groups and fishing groups rather than academics or scientists.

Conservation groups sought to frame the marine parks as being supported by science by emphasising “big picture” scientific consensus statements about the value of MPAs in general, on a global scale. They cited international examples of what is known as the “spillover effect” whereby it is hypothesised that fish numbers within no-take MPAs increase to the point where excess individuals migrate (or “spillover”) into surrounding areas, improving fish stocks and the fishing experience in areas where fishing is allowed.

More than 1600 international scientists and conservationists have backed a call for at least 20 percent of the seas to be protected from fishing by the year 2020.

Great Lakes Advocate, 30 November 2005: 7

A recent report from New Zealand claims the establishment of marine reserves has led to a boost in tourism, a significant improvement in fish stock and the re-establishment of the natural food chain stimulating the return of the larger predator fish.

Narooma News, 7 December 2005: 9

Fishing groups challenged this aspect of MPA science with competing “dodgy science” frames. They questioned the existence of any evidence of the “spillover effect” and challenged the “big picture” statements by focusing on the scientific process within the local marine park area, suggesting that the body of international MPA science was irrelevant or inapplicable to the local area. Protection targets such as the 20% referenced above, which is derived from scientific consensus statements and international agreements on global MPA targets, were redefined as being aligned with a Green agenda or government policy and therefore a purely political rather than scientific goal.

It is crucially important for the future of the Marine Park that the zoning follow logical and scientific reasoning rather than a desire to meet the hypothetical figure dictated by Sydney bureaucrats of the NSW Department of Conservation.

Bay Post, 19 July 2006, p.5

5.4.1.3 Politics and the media debate

While the framing of the media debate in both parks was largely consistent there were some key differences which began to emerge when unpacking the role of politics and ideology in the coverage of each park. Politics and ideology played a significant role in the media coverage of the BMP, particularly in the planning (and pre-election) year of 2006, a likely reflection of the park being situated in what was then considered to be a marginal seat. The media covered the debate in a manner that emphasised the adversarial nature of politics – the local Member of Parliament was cast in the role of the defender of the local community against the Sydney-based Labor Government politicians. Therefore the debate was framed in the local media not only as an ideological battle, but as one of a local community versus ‘outsiders’. In addition the use of sources was heavily focused on a handful of individuals with strong political and ideological convictions and firm in their positions of support for or opposition to the park. All the combatants professed to ‘care’ about the local marine environment but defined ‘caring’ in different ways based on differing representations of the threats to the marine environment and the most appropriate responses to these threats.

In the PSGLMP media sources were more diverse and, while ideological and political divisions were clearly evident, this greater diversity of sources appears to have allowed for a more nuanced coverage of the issue. While it is clear that the park was still seen as a deeply political issue in the PSGLMP this may have been neutralised to some extent by Labor Government politicians being predominately associated with questions of policy and process rather than with defence of the concept of the marine park itself. This was in contrast to the approach adopted in the BMP. In addition, one of the more prominent fishing spokespeople maintained a neutral position in relation to the park rather than the blanket opposition expressed by other fishing media sources.

The results of this research suggest that the media debate over the marine parks reflected ideology to a much greater extent in the BMP than the PSGLMP. However it is not possible to determine whether this drove the intensely polarised debate in the BMP or whether the media was simply reflecting what was already an ideological battle. The reality was probably a combination of both. As seen in Chapter Four the BMP area has a long history of environmental conflict with relatively recent clashes between conservationists and forestry workers often alluded to in the interviews. The declaration of the park so close to a state election would also have encouraged politicisation of the issue along party lines, and this may have allowed spokespeople aligned with these ideological positions to feel supported and encouraged in their media campaigns. The polarised coverage of the debate may in turn have been influential in community responses to the park.

5.4.2 Media campaigners

A striking feature of the local news coverage of the PSGLMP and BMP was the disproportionate coverage given to a small number of spokespeople in the BMP newspaper the *Narooma News*. This had the smallest circulation and readership of all the newspapers studied yet had the greatest number of articles and letters to the editor on the issue. In addition these articles and letters were dominated

by a handful of spokespeople. This is perhaps reflective of the importance of the issue to the local community, particularly the Narooma community, but is also likely to be symptomatic of the concerted efforts of a small group of marine park opponents who actively worked to keep the issue alive in the local media through an ongoing letter writing campaign.

The small community in which the *Narooma News* is published is also likely to mean that the newspaper is more immediately accountable to the community and relies heavily on maintaining relationships with its key readership, of which the prominent letter writers and their networks are likely to be an important component. The BMP example indicates that local spokespeople can exert considerable influence on the coverage of local media and in smaller newspapers may have a greater capacity to serve an agenda-setting function. This access to the media brings with it significant power in the negotiations over marine park management. Many of the media spokespeople across both parks indicated that they have currently, or have had in the past, direct access to key political figures in the NSW State Government. They partly attribute this to their media activity and media prominence. This access gives them a metaphorical seat at the negotiation table and is likely to have enhanced their lobbying efforts aimed at advancing their particular ideological position.

While the conservation and fishing groups in both parks acknowledged the importance and power of the media each sought to make use of their media exposure in different ways. The fishing spokespeople saw the media as a powerful lobbying tool that they continued to employ to harness support for their cause and build pressure on local politicians and the Government. In the BMP the letters to the editor page of the *Narooma News* was a key battleground for their dispute with conservationists as well as an important campaign tool used to keep the issue in the public eye.

we've let it die down the last 6 months...but now it's all ignited again because (a conservationist) started something a few weeks ago, made a bit of an attack, so last week's paper everyone attacked him.

Fisher BMP

The key letter writers in the BMP felt supported by their community in their efforts. They indicated in the interviews that they received regular feedback on their letters from members of the community, which encouraged their continued efforts in this area.

the common complaint was my letters were too long, but I like to be precise, I hate this thing of 'Marine Parks are good because you get a spill over effect' end of story, I like to discuss that, but people seemed to respect that, I got a lot of positive comment.

Fisher BMP

This deeply personal, adversarial and ongoing debate in the letters pages from a handful of key protagonists was unique to the BMP, and more specifically the *Narooma News*, who have an editorial policy of publishing almost every received letter (*Editor Narooma News pers comm*). Conservation groups in both parks also made use of the 'letters to the editor' pages during the planning process,

including through co-ordinated letter writing campaigns. However, since the finalisation of the zoning plans the conservation spokespeople have largely disengaged from the media as a lobbying tool, preferring to use it in a neutral, educative way. This strategy attempts to reframe the debate around marine parks and to educate and inform the wider population about the importance of marine parks and marine wildlife.

(we)have said it's not worth it you are only giving (the opponents) air, don't respond (to opponents letters to the editor) so...we've been concentrating on getting through to school groups and things and also fortnightly columns in the paper about marine animals.

Conservationist

5.5 Conclusions

Analysis of the media coverage of the PSGLMP and BMP indicates two major findings. Firstly coverage of the parks tended to frame key messages of both support and opposition to the park around arguments relating to the value of MPAs in improving fish stocks and fishing experiences – an area outside the primary objective of the parks of biodiversity conservation.

Secondly, the analysis revealed the influence of ideology and politics in the coverage of the parks and in the motivations of key spokespeople representing major stakeholder groups. This was particularly pronounced in the BMP. The PSGLMP and BMP case studies used in this research reflect the tendency in media framing to align the conservation movement with the progressive end of the political spectrum and resistance to environmental interventions with more conservative political persuasions (Lakoff 2010). The underlying political dimension to the debate translated into highly adversarial and polarised media coverage, particularly in the BMP, reducing the coverage of complex marine conservation management and resource allocation decisions into a simplified 'left vs right' political conflict.

6. Social impacts of the marine parks

6.1 Introduction

An edited version of this chapter has been published in the international journal *Aquatic Conservation: Marine and Freshwater Ecosystems*:

Voyer, M., W. Gladstone, and H. Goodall. 2013. Understanding marine park opposition: the relationship between social impacts, environmental knowledge and motivation to fish. Aquatic Conservation: Marine and Freshwater Ecosystems DOI: 10.1002/aqc.2363

The importance of considering socio-economic impacts and engaging local communities in MPA declaration and planning are widely acknowledged, and has often been the focus of attempts to build community support for MPAs. Considerable efforts are increasingly being expended on public participation processes and socio-economic assessments, yet opposition remains a largely consistent response by local communities to MPAs around Australia and the world (Voyer, Gladstone & Goodall 2012). This may suggest that processes employed to date are ineffective at addressing the key concerns of stakeholders or that the outcomes of these processes are not being adequately translated into management responses. Studies into what constitutes a socially acceptable protected area have identified some key influences on community support. These include;

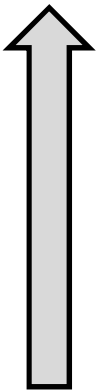




- effective stakeholder participation (Christie 2004; Vanclay 2012; Chuenpagdee et al. 2013; Jones, Qiu & De Santo 2013);
- equitable sharing of economic benefits (Christie 2004; McCay & Jones 2011; Jones, Qiu & De Santo 2013; Perez de Oliveira 2013);
- effective governance structures, incorporating strong legislative and/or political support (McCay & Jones 2011; Chuenpagdee et al. 2013; Jones, Qiu & De Santo 2013);
- trust in management authorities (Stern 2008; Lijebblad, Borrie & Watson 2009; Vanclay 2012; Jones, Qiu & De Santo 2013);
- shared or agreed values and objectives and knowledge sharing (Stoll-Kleemann 2001; Sloan 2002; McCay & Jones 2011; Perez de Oliveira 2013; Roberts & Jones 2013); and
- public communication and education (Perez de Oliveira 2013; Roberts & Jones 2013).

Participation and socio-economic impact assessment processes may be successful in addressing the first two of these issues but they are not guaranteed to build trust in management authorities or result in a plan that has 'social legitimacy' if they do not carefully consider the values and objectives of local communities (Vanclay 2012). It is often the case that MPA opposition begins well before their inception, prior to any management decisions being made or negotiations initiated, and can continue long after management plans are finalised (Christie 2004; Chuenpagdee et al. 2013). Therefore efforts to reduce social and economic impacts of an MPA during the planning phase may come too late to alleviate stakeholder concerns or reverse by now entrenched feelings of opposition. The social impacts of an MPA commence the moment plans (or rumours) for their inception become public knowledge, when uncertainty and fear can lead to anxiety, stress and anger (Vanclay 2012).

Efforts to research the social and economic impacts (positive and negative) of MPAs have appropriately tended to concentrate on the most vulnerable groups within the community, such as professional, Indigenous or artisanal fishers (Christie 2004; Gjertsen 2005; Mascia, Claus & Naidoo 2010; van de Geer et al. 2013). In many cases these studies focus on food security, income or other social capital data as the key measure of threats or benefits of the MPA (Gjertsen 2005; Mascia, Claus & Naidoo 2010; van de Geer et al. 2013). Yet resistance to MPAs is also likely to be motivated by a broad range of other factors amongst a variety of stakeholder groups, including recreational fishers (Weible 2008; Sutton & Tobin 2009; Chuenpagdee et al. 2013; De Freitas et al. 2013; Hunt, Sutton & Arlinghaus 2013). Perhaps because recreational fishers are less likely to rely on fishing for their livelihoods there has been minimal research attention on the social impacts of MPAs on this stakeholder group. Efforts to explain their opposition have largely attributed their resistance to ideology or misinformation (Wescott 2006; Banks & Skilleter 2010; Chuenpagdee et al. 2013). Yet the large numbers of recreational fishers give them a powerful voice in MPA debates and they are often instrumental in efforts to resist them. Reasons for their opposition therefore deserve further research attention.

Underpinning all opinions and ideas about the marine parks are core beliefs, ideological positions and social norms that greatly influence perceptions (Song, Chuenpagdee & Jentoft 2013). Research into the motivations of recreational fishers in the United States and Europe have indicated that a range of different factors influence their enjoyment and satisfaction in the fishing experience and that these factors are often related to more than just the catching of fish. Motivations can be loosely categorised into being catch or non-catch related. Activity specific or catch related motivations include those that are specific to the act of recreational fishing such as chasing trophy fish or specific species or sizes of fish. Activity general, or non-catch related motivations are common to other forms of outdoor recreation other than fishing and include relaxation, social interactions or nature appreciation (Arlinghaus 2006). In addition, international research has indicated there is a continuum of recreation participants ranging from occasional to highly specialised participants who have invested significant amounts of time, effort and money into improving their skills in their chosen recreational pursuit (Schroeder et al. 2006). Table 6.1 contains a summary of the key literature around specialisation as it relates to recreational fishing (Salz, Loomis & Finn 2001; Salz & Loomis 2005; Ditton & Oh 2008; Schuett et al. 2010; Hammitt, Lyu & Oh 2012).

Table 6.1 Features of the continuum of specialisation for recreational fishing

Level of specialisation	Fishing preferences	Investment	Relationships	Conservation support
High  Low	Attach more importance to non-catch related elements of fishing experience  Attach more importance to catch related elements of fishing experience	Significant investments in time, money and effort in fishing  Occasional/casual fisher	Fishing an important aspect of social life and relationships  Superficial/ limited relationships with other anglers	Increased support for management actions and regulations  Less support for management actions and regulations

For recreational fishers research suggests that as level of specialisation increases, preferences of the fisher become more focused on the ‘activity general’ or non-catch related motivations (Ditton & Oh 2008). In addition, highly specialised fishers are more likely to have considerable money and time investments in fishing, for example they may have a boat or significant amounts of fishing equipment (Salz, Loomis & Finn 2001; Schroeder et al. 2006). Fishing also plays a large role in the life of a highly specialised fisher – they may be part of a fishing club, go fishing very frequently, have friendships or relationships with other fishers or be active online in fishing forums or chat rooms (Salz, Loomis & Finn 2001; Schroeder et al. 2006). Finally research suggests that as the level of specialisation increases so too does fishers knowledge of fish and fishing as well as their ‘resource dependency’. That is, they are dependent on specific environmental resources for their continued enjoyment and satisfaction from their sport. Therefore, they are more likely to be receptive to regulations that may restrict their fishing but are considered necessary for the ongoing health of the resource (Salz, Loomis & Finn 2001; Salz & Loomis 2005; Schroeder et al. 2006; Ditton & Oh 2008). The notable exception to this is when it comes to restricted fishing areas such as MPAs where a number of studies have found the general trend for support of regulations is reversed or not detected, however there is little research available to explain this trend (Salz & Loomis 2004; 2005; Ditton & Oh 2008).

It is not well understood how different individuals and groups within the community perceive the impacts of MPAs. While a number of studies have identified some of the possible social impacts of MPAs there has been little exploration of what factors influence their response to these impacts. Loss of access to an important fishing zone, for example, may be felt very differently within and across different stakeholder groups. An understanding of these differential impacts is important if meaningful management responses are to be developed. For example, do the reasons people choose to fish or their preference for particular fishing experiences influence how they feel the park has affected them? Does their environmental knowledge influence their attitudes towards the park? Research into social

impacts is required which looks beyond quantifiable, largely economic, indicators at a broad scale to a more fine scale, qualitative examination of influences on individual or group resilience to changes in marine and coastal management. This chapter seeks to explore the social impacts of the declaration of PSGLMP and BMP in order to address Research Questions Three and Four:

Research Question 3: What social impacts have been experienced in each marine park community and by which sections of the community?

Research Question 4: If there are any differences between the levels of acceptance in each marine park community why do these differences exist?

This chapter specifically seeks to examine how differing levels of social and/or economic impacts of the marine parks in each community may have influenced the different community responses to the parks, through interviews with stakeholders most likely to feel the impacts of the park. The interviews went beyond looking at the impacts of the parks however and included questions relating to attachment to their place of residence, their motivation to fish and fishing frequency and general perceptions about the planning process and the park itself. This chapter begins with an in-depth analysis of the impacts of each park and explores how the perception of impact on individuals and communities was influenced by other factors including motivation to fish and environmental knowledge.

6.2 Methods

6.2.1 Research participants

This aspect of the research worked on an assumption that marine park opposition could, at least in part, be explained by social impacts of the parks. This idea was explored through interviews with marine park opponents. This study did not seek to quantify the numbers of marine park opponents in the study areas but rather used purposive sampling to seek out the opponents and explore the drivers of that opposition. It adopted a qualitative, instrumental case study research design, in which examination of case study sites at a localised level was used as an 'instrument' to provide insight into a wider social phenomenon – in this case marine park opposition (Creswell, 1998).

Given there are no data available to determine population size of each stakeholder group, non-probability, purposive sampling was used (Creswell 2009). Initially interview participants were selected using a variety of means. Each marine park has an advisory committee made up of representatives of major stakeholder groups, which provides advice to the government on planning and operational matters relating to the park (Marine Parks Authority 2012a). Professional and recreational fishing representatives from each marine park advisory committee were approached for interviews and asked to nominate additional participants. Nominations were also requested from Marine Park and National Park staff and local Aboriginal Land Councils. In addition prominent members of the fishing community were approached for their input or nominations, including fishing column writers/radio announcers, bait and tackle shop owners, and fishing co-op members. A number

of spokespersons were also prominent in the media during each park's consultation phases and they were also approached for an interview. Once contact was made with a number of interviewees in each stakeholder group further participants were sourced through 'snowball' sampling whereby participants nominated additional potential interviewees (Blaikie 2009). Interviews continued until 'theoretical saturation' was reached, i.e. when no new theories were likely to be introduced by the continuation of further interviews (Punch 1998; Blaikie 2009). This was judged to be when the repetition of key themes continued in new interviews without the introduction of new themes or theory. In total 53 fishers were interviewed (Table 6.1).

Table 6.2: Interview participants across stakeholder groups

Marine Park	Recreational fisher		Professional fisher	Indigenous fisher			Total
	Opposed	Support	Opposed	Opposed	Not sure	Support	
PSGLMP	7	1	6	5	1	2	22
BMP	9	7	9	3	2	1	31
Sub-total	16	8	15	8	3	3	
Total	24		15	14			53

All interview participants were residents and/or regular visitors to the study areas since at least the declaration of the parks in 2005. They participated in either fishing activities or fishing-related activities within the study areas during that time or were a person of Aboriginal descent. As much as possible participants were selected to include a broad cross-section of the community i.e. of various ages and life situations, and place of residence. In particular the following cohorts were targeted: adults in the age brackets 15-29, 30-44, 45-59, 60+ years, and including retirees, Aboriginal elders, parents of young or teenage children, long-term residents and women. An attempt was also made to include a cross section of professional fishers that reflected the nature and extent of professional fishing in that community. They therefore included fishers from a variety of fishing methods (e.g. trawl, trap and line, meshing) and included family members such as spouses or children. The selection of Indigenous participants attempted to ensure representation from relevant Local Aboriginal Land Councils as well as traditional owner groups.

Every effort was maintained to ensure a consistent approach to sourcing interview subjects in both marine parks. However it quickly became apparent the technique of snowball sampling was embraced much more enthusiastically by fishers in the BMP, particularly recreational fishers. A relatively large number of fishers were keen to be involved in the research in the BMP when compared with the PSGLMP and this resulted in larger numbers of interviews from BMP. Appendix 3 contains examples of correspondence received from fishers in the PSGLMP which indicates why some fishers in the PSGLMP were resistant to the research. Despite the disparity in interview numbers of recreational fishers in particular it is still possible to explore the differences and similarities in responses across the two parks. However, it should be borne in mind that these results are not generalisable, given they

are not sourced from random sampling and therefore do not necessarily reflect the opinions of the wider PSGLMP or BMP communities (see Section 3.8).

6.2.2 Data collection, analysis and writing

Interview participants were initially contacted by phone or email and the project was explained to them in detail. An information sheet was sent to them to assist in deciding whether they wished to participate. From there the interview time, date and venue were decided in consultation with the participant. Prior to commencing the interview ethical requirements were explained and discussed, including the anonymity of the participants (see Section 3.9). Audio recording commenced after a consent form was signed.

Initially, a pilot phase was conducted in each park. The interviews were then adjusted slightly to allow for improved interview structure before being rolled out over an 18-month period from March 2011 until July 2012. The majority of interviews lasted between 60 and 90 minutes, however some of the interviews ranged from 30 minutes to four hours. They loosely followed the structure outlined in Appendix 4. The interview structure included a mix of Likert scale questions to stimulate discussion and open-ended questions. Research participants were asked a series of questions relating to their attachment to their place of residence, their motivation to fish, fishing frequency and their perceptions of the impacts of the park relating to three categories:

- Impacts on effort and enjoyment: whether the marine park had affected how frequently they went fishing and their enjoyment of fishing as a recreational, professional or cultural activity.
- Impacts on wellbeing: whether the marine park had affected their emotional or financial wellbeing, or their relationships with family and friends.
- Impacts on community: their perceptions of whether the marine park had affected the relationships within the community as a whole or the local economy.

These categories of impact were identified as some of the most likely impacts of MPAs during the literature review stage as well as personal experience in public consultation exercises over MPAs. Following completion of the interview the audio recording was logged, whereby a partial transcript was completed for key concepts in the interview and times logged to allow for more detailed transcription at a later date if required (Robertson 2000). These logs were returned to all participants for checking. In total the interviews data included more than 35 hours of audio tape and 350 pages of logs.

6.2.2.1 Specialisation classification (recreational fishers)

Recreational fishers were classified according to their level of 'specialisation'. A four dimensional model was adapted from specialisation indices developed and used by key authors in this field (Salz, Loomis & Finn 2001; Ditton & Oh 2008). The index developed by Salz et al (2001) includes four levels of involvement which can be used to measure specialisation. They are orientation, experiences, relationships and commitment. Orientation is the level to which the person identifies as a fisher. The

amount of time dedicated to fishing is likely to be aligned with whether they identify as 'fishers' and therefore this level of involvement was measured by avidity, or frequency of participation (Salz, Loomis & Finn 2001). The first stage of analysis therefore involved classifying level of specialisation according to the avidity of the research participants. Two questions were asked in the interviews about how often the participant went fishing before the marine park and after its declaration. The answers were examined in order to derive an average. This produced a score out of 5 with 1 being 'not at all or very rarely', and 5 being 'very frequently'. Answers that scored 2 or below were classified as a low level of specialisation, a score between 2.1 and 4 was classified as a mid-level of specialisation, and a score 4.1 or above was classified as a high level of specialisation. This measure was not considered sufficient on its own as some of the fishers interviewed had modified their avidity as a result of the marine park or other external factors. The second stage of analysis therefore involved measuring the remaining three levels of involvement in the following ways:

- a) Experience: the level of skill, knowledge or experience in fishing. This was ranked out of 3 with those who did not consider themselves to have significant skill in fishing ranked as 1. A rank of 2 was assigned to those who considered themselves as knowledge holders or teachers in fishing technique. Finally a rank of 3 was assigned to those who considered themselves as leaders or an authority in fishing with knowledge not just of fishing technique but also fishing regulations, policy and science.
- b) Relationships: the role fishing plays in the social life of fishers. This was measured through the participants' 'social commitment' to fishing and ranked from 1 to 3. A rank of 1 was assigned to casual fishers who did not define fishing as a major aspect of their lives. Those who placed a moderate amount of emphasis on fishing as a significant component of their social life, including fishers who predominately fished alone, ranked 2. Members of a fishing club, those who were employed in the fishing sector or who indicated that their relationships with friends or family centred around fishing received the highest score.
- c) Commitment: the level of investment in fishing by the participant. This was measured through the level of financial commitment fishers had made to the sport. Those that owned a boat - arguably the most significant investment that can be made in the sport of fishing - ranked 3. Those that had a significant financial investment in fishing equipment ranked 2. These included fishers with large number of rods, reels and other equipment but were not owners of a boat. Those that had no boat or used basic equipment ranked 1.

The highest possible score that could be achieved using this indexation was nine (3+3+3). Fishers with a score of 3 or below were classified as having a low level of specialisation. Those that scored between 3.1 and 6 were classified as having a mid-level of specialisation. A score of 6.1 or above was classified as a high level of specialisation. These classifications were then compared with those developed from the avidity data. Essentially this exercise supported the avidity data except in a small number of cases where there were significant changes in fishing frequencies from before to after the marine park declarations. These were the cases in which the marine parks or other factors either

before or after the parks were declared had significantly impacted fishing effort. The classification achieved in stage 2 was adopted in these cases.

6.2.2.2 Coding analysis

Analysis of the interviews was done using a thematic analysis approach whereby repeated coding, sorting and categorising were conducted using Nvivo qualitative analysis software (Miles & Huberman 1994). Initially all the interview logs were coded at a basic descriptive level and these codes were categorised. Box 2 illustrates an example of the way descriptive codes were developed, applied and categorised using an excerpt from one interview. The data were then provided to an external auditor to test a sample of logs for inter coder reliability (see Section 5.1.3.3 & Miles & Huberman 1994). This approach ensured that the final, more complex stage of the analysis was undertaken with high quality baseline data.

Box 2: Example of coding practice

Transcript excerpt:
 Q Why do you fish?
 It's a challenge, I'm a mug lair so I like to show off, it gives me a chance to show how good I am. Fishing in general I don't know what attracts you to it, I guess it's that element of surprise you never really know what you're going to get.

Descriptive code:
Challenge or adventure

↓

Categorical code:
Motivation to fish

The logs were then re-examined in order to draw out major themes and compare, contrast and examine the intersections of ideas, concepts and beliefs within stakeholder groups, across stakeholder groups and across the two parks (Maxwell 2005; Creswell 2009). This stage in the process involves the influence of the researcher's concepts as theory emerges from the analysis in her/his attempt to 'make sense' of the intersections of ideas, concepts and beliefs that the data is demonstrating (Maxwell 2005; Creswell 2009). Figure 6.1 illustrates the thematic analysis process undertaken through this research.

The major analytical tool used in this research was a series of matrices that cross-referenced major coding categories (eg social impact and motivation to fish categories) to see how often key codes from each category occurred within the same interview. When codes consistently occurred together within the interviews a theory was developed that suggested a relationship. The validity of these theorised relationships was tested through a review by the research participants (see Section 6.2.3.2).

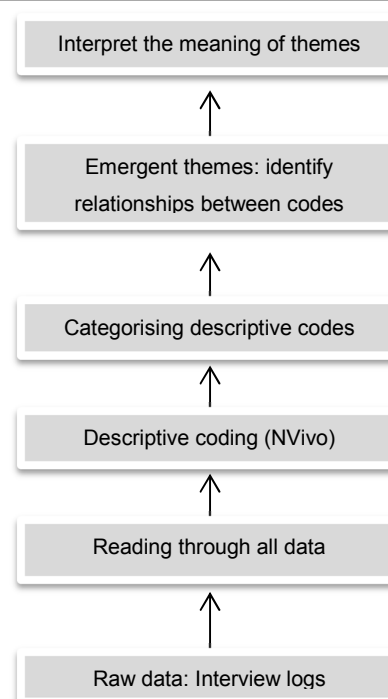


Figure 6.1: Thematic analysis overview

6.2.3 Reliability, validity and transferability

A range of strategies were employed in the research design to ensure the reliability and validity of the findings.

6.2.3.1 Triangulation

Triangulation is a method of validating research findings which serves to test whether the theories developed through a research project are supported by more than one source (Creswell 2009).

Triangulation is a means of ensuring that the multiple 'realities' that exist within the human world can be incorporated into a research project through a variety of means that may not be available in a single method, single observer or single theory study. It reduces the opportunity for bias by ensuring that findings are consistent across more than one source or methodological approach (Patton 2002).

A number of forms of triangulation exist within qualitative research methodology. These include:

1. Methods triangulation: checking the consistency of findings across different data collection methods
2. Sources triangulation: checking the consistency of sources using the same method
3. Analyst triangulation: use of multiple analysts to review findings
4. Theory/perspective triangulation: using multiple perspectives or theory to interpret data (Patton 2002)

In the case of this research project triangulation was conducted of both methods and sources.

Multiple data collection methods were used including document analysis (of documents from a range of sources), interviews and to a lesser extent participant observation. Data source triangulation was achieved by interviewing multiple sources across both parks so that findings could be checked for consistency across different stakeholder groups and across locations. Any inconsistencies were then examined to determine whether they were the results of a methodological or data analysis approach or a genuine point of difference that may require further examination in the analysis.

6.2.3.2 Member checks and persistent engagement

The validity of the source data was tested through 'member' or participant checking of the interview logs (Creswell 2009). This stage was particularly important given the decision to conduct only a partial transcript of the interviews. Each participant was given a copy of their interview log and if they wished the audio recording. They were then given the opportunity to make any changes they wished to the log – six participants made minor adjustments of clarification to their logs during the course of the research.

Interviews were conducted over a period of 18 months. During this time there were several changes in the political approach to marine parks in NSW, which attracted significant attention amongst fishers. These included a change of government and a major independent review of marine park science. It is likely that the political environment of the time influenced the way in which participants answered the questions. However, given the long period of time over which the interviews were conducted the overarching themes should not be overly-influenced by these transient factors.

Finally, the validity of the research findings was tested through a review by the research participants. Monitoring whether people relate to or confirm the descriptions within the research findings is a useful way of testing whether the researcher has accurately and fairly analysed their data (Patton 2002). All interview participants were invited to attend an individual or small group presentation of the preliminary research findings. Of the 53 research participants 15 took up the invitation to attend. These participants were then given an overview of the findings to date and asked for their feedback. Feedback from the participants led to the refinement and minor adjustment of some of the theories developed during the analysis stage.

6.2.3.3 Coding comparison

Prior to the commencement of the thematic stage of the data analysis, a coding comparison was conducted on the descriptive and categorical coding framework developed during the early analysis. This was conducted to ensure that the coding framework was applied consistently, would be replicable if necessary and was easily understood. A sample of interviews from each stakeholder in each park was coded by an independent, external Nvivo consultant using a provided coding guide. A comparison of similarities and differences in coding was then conducted using the Cohens Kappa Coefficient which is a statistical measure of inter-coder agreement (Creswell 2009). This returned a range of ratings between 90 and 99% showing high correlation between coders.

6.3 Results

6.3.1 Recreational fishers

6.3.1.1 Research participants

Eight recreational fishers were interviewed within the PSGLMP. They ranged in ages across all four age categories from under 30 through to over 60 and all had lived in the area for more than 20 years. All but one of the interview respondents lived around the southern part of the park (ie Port Stephens), with only one of the fishers approached from the north of the park willing to be involved in the research. Education levels varied from less than Year 10 (lower secondary school) equivalent through to postgraduate qualifications. The majority of the recreational fishers interviewed from the PSGLMP held very strong views about their local marine park and the majority were strongly opposed to the parks both before its declaration and after its implementation (Figure 6.2).

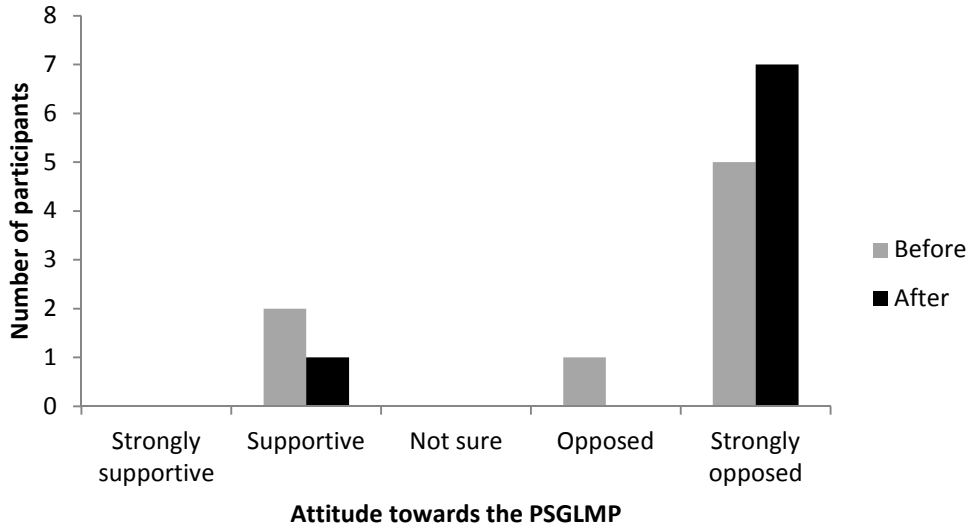


Figure 6.2: Levels of support and opposition to the local marine park by PSGLMP recreational fishing interview participants – participants were asked to rank their opinion when they first heard about the park (before implementation) and now (after implementation).

Sixteen recreational fishers were interviewed within the BMP. All the recreational fishing participants were between the ages of 30 and 74 years. Just over half (nine) had lived in the area for less than 19 years with the majority of the remainder having lifelong or very long term connections to the area (six had lived in the area for more than 30 years). The research project generated significant interest in the southern part of the park resulting in 13 of the 16 interview participants residing in Narooma. The remainder lived in the northern section of the park around Batemans Bay. Education levels varied from less than Year 10 equivalent (lower secondary school) through to postgraduate qualifications.

Figure 6.3 indicates that the recreational fishers interviewed from the BMP were close to being evenly split between those who were strongly opposed at the time of the interview (nine participants) and those that were supportive or strongly supportive (seven participants).

All eight PSGLMP interview participants were identified as highly specialised fishers. The majority of research participants in the BMP (13) were also classified as highly specialised fishers (Figure 6.4). Of the 21 highly specialised fishers interviewed, 16 were opposed to the marine parks.

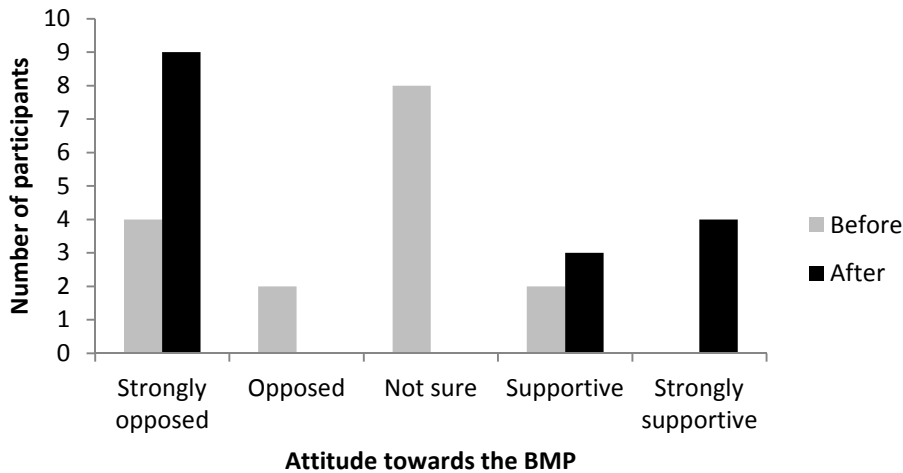


Figure 6.3: Levels of support and opposition to the local marine park by BMP recreational fishing interview participants – participants were asked to rank their opinion when they first heard about the park (before implementation) and now (after implementation).

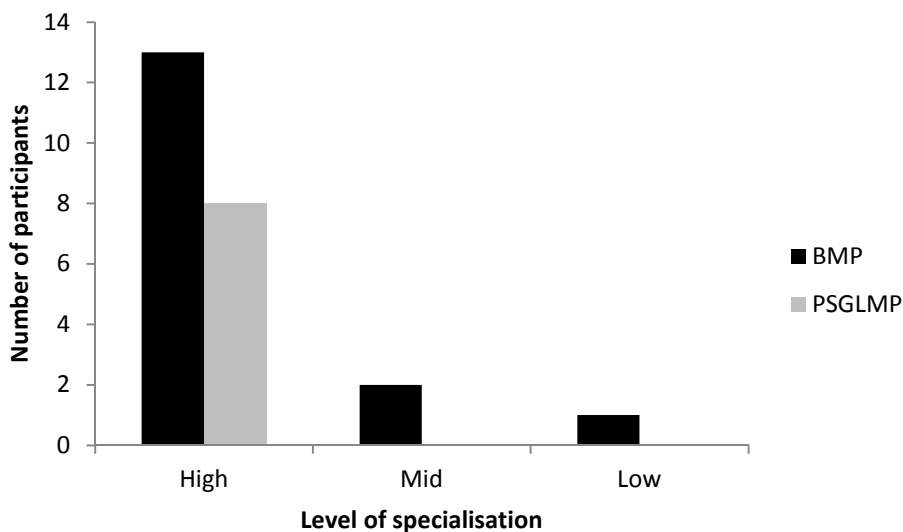


Figure 6.4: Level of specialisation amongst recreational fishing research participants in the PSGLMP and BMP.

Highly specialised fishers tend to fish for a range of reasons and exhibit low catch orientation. That is their primary purpose in fishing is not necessarily catching a fish (Salz, Loomis & Finn 2001). The recreational fishers interviewed in the PSGLMP and BMP were consistent with this trend in that the majority nominated a broad range of factors which influence their desire to fish (Figure 6.5). While catching a fish is still a principal aim of the fishing experience for these fishers a variety of other factors were also important including being outdoors in nature, relaxing and testing their skill or competing against other fishers.

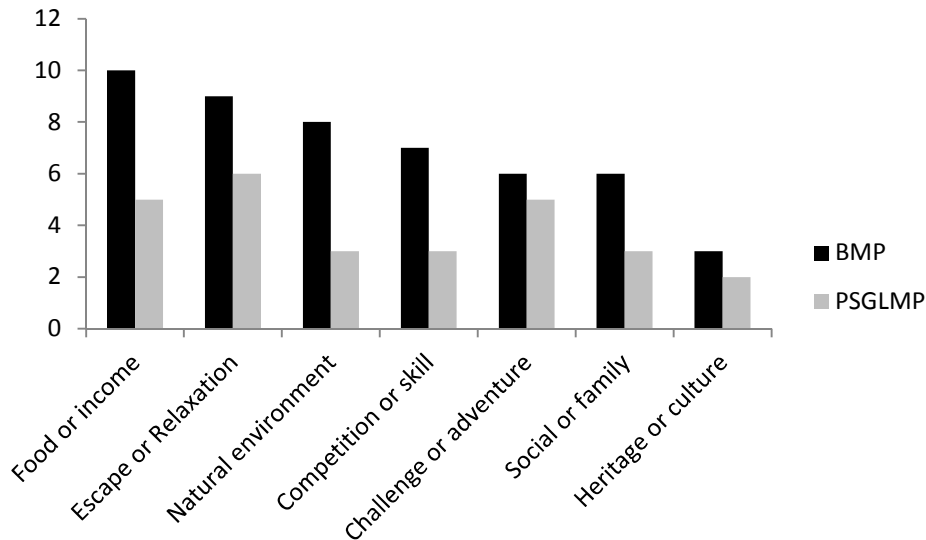


Figure 6.5: Motivation to fish for recreational fishing interview participants in the PSGLMP and BMP.

A number of the interview participants were directly employed in fishing-related industries. In the PSGLMP three were employed in the retail bait and tackle industry. Another four had indirect links to recreational or professional fishing in their current or past professional lives. In the BMP five were directly employed in the recreational fishing industry either in the retail bait and tackle industry or as a charter boat operator or crew.

6.3.1.2 Fishing effort and enjoyment

The recreational fishers in the PSGLMP and BMP participated in a range of fishing activities including spearfishing, game fishing, and diving or snorkelling. Fifteen of the 24 fishers interviewed classified themselves as frequent to very frequent fishers. The majority of interview participants had not greatly modified the frequency of their fishing efforts since the marine park (Figure 6.6).

The participants across both parks were split over the question of whether the marine park had diminished their enjoyment of fishing (Figure 6.6). In the PSGLMP three of the eight participants felt they still enjoyed fishing as much as ever despite marine park restrictions. In the BMP just over half of the participants reported that the marine park had not affected their enjoyment of fishing. For some this was a statement of defiance i.e. they still enjoyed fishing despite the marine park. For others it was a statement about impact i.e. the marine park had not significantly affected their fishing therefore they still enjoyed it just as much.

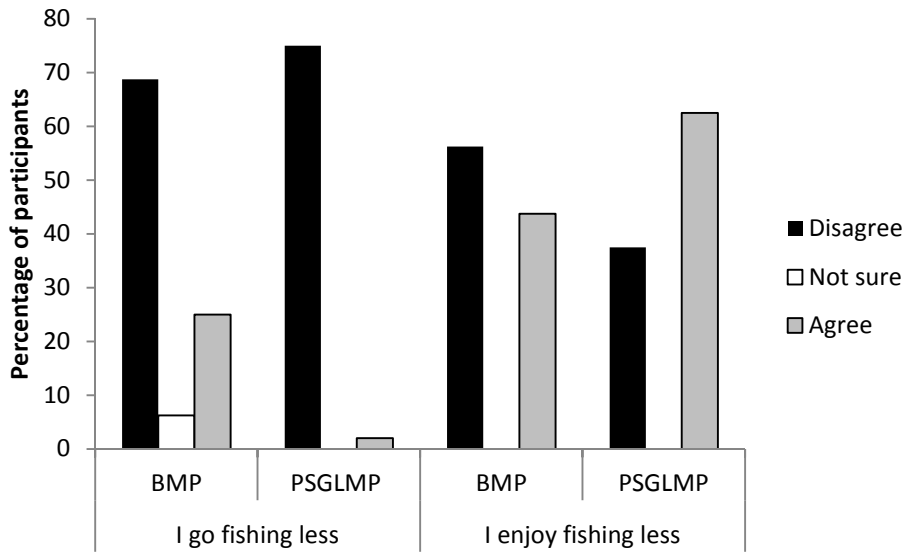


Figure 6.6: Recreational fishing interview participants responses to the statements: 1. 'I go fishing less often because of the marine park' and 2. 'I enjoy fishing less because of the marine park'.

All of the eight interview participants in the PSGLMP and 14 of the 16 interview participants in the BMP noted they had lost favoured or traditionally fished sites through the declaration of the marine parks, however, the extent to which this was a concern varied greatly. Most had adapted their fishing activities as demonstrated by the larger number of participants who had maintained a consistent level of fishing effort. This is not to say that the parks had no impact on their fishing practices, but that they had adapted to the changes. Five of the PSGLMP participants and nine of the BMP participants made statements similar to the ones below that indicated they had somewhat reluctantly managed to adapt to the park:

"I had some really good spots that I can't actually go now, which at the end of the day is not a major issue but they were really good spots that I've actually missed out on and I guess likewise for everybody else."

PSGLMP recreational fisher

On average, about half the interview participants regarded the marine park as hindering their enjoyment of fishing (Figure 6.6). Some of the impacts cited by participants that may be responsible for this decline in enjoyment are detailed in Table 6.2. The enjoyment impact codes identified in the interviews with recreational fishers were largely consistent across both parks, with the exception of overcrowding, which occurred in half the PSGLMP interviews but not at all in the BMP interviews. This is likely to be a reflection of the greater population density in the PSGLMP.

Table 6.3: Explanation of impact codes identified in the interviews with recreational fishers from the PSGLMP and BMP.

Impact on enjoyment code	Explanation	Quote
Complexity	Confusion or uncertainty over the rules or locations of zones, sometimes related to the need to own a GPS or be able to use a GPS effectively.	<i>Unfortunately most fishermen are older...the older blokes aren't that smart when it comes to setting up electronics so they know where they are.</i> BMP recreational fisher
Flexibility	Feeling that the marine park had effectively removed one or more options from their fishing repertoire and limited their flexibility in responding to prevailing conditions or seasonal variations.	<i>"I used to do a lot of white water, wash fishing around the island and that was the bulk of my rod and reel fishing...now I virtually don't do any of it."</i> PSGLMP recreational fisher
Travel further & safety	Need to travel further to access fishing grounds. Linked to concerns over safety.	<i>A lot of our good fishing grounds you've got to go 15, 20 minutes up and if you get caught in a southerly you can be in trouble. It's not as enjoyable, your danger or your risk is higher because you've got to travel further.</i> BMP recreational fisher
Overcrowding	Specific to the PSGLMP: concern about the sites that remain open to fishing becoming overcrowded, including increased interaction with professional fishers.	<i>..the problem is there are so many boats that you are fishing on top of one another. Some people get stressed out and get angry if you are fishing near where they are - they want to have the whole place to themselves.</i> PSGLMP recreational fisher

6.3.1.3 Impacts on personal wellbeing

Most participants indicated that the marine park had not impacted on their personal relationships with family and friends (Figure 6.7). In total, seven fishers agreed the parks had affected their family life, two in the PSGLMP and five in the BMP. Three (one in the PSGLMP and two in the BMP) discussed the loss of shared recreation with family members through the loss of particular locations that had been important to them.

"My kids would normally dive...they used to like diving (for lobsters) around this old shipwreck, now they can't do that anymore. They don't come out with us anymore."

BMP recreational fisher

Three BMP fishers employed in the recreational fishing industry as small business owners or employees cited the stress associated with the park planning as affecting their family life. One PSGLMP fisher expressed concern for family members involved in professional fishing.

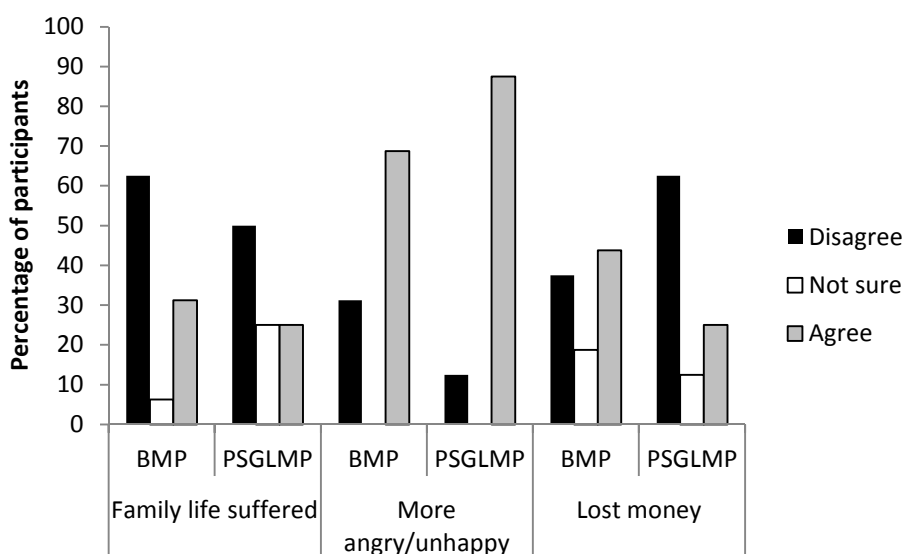


Figure 6.7: Recreational fishing participants responses to the statements: 1. My family life has suffered since the creation of the marine park. 2. I feel more angry, depressed or unhappy since the creation of the marine park and 3. I have lost money because of the marine park.

There was a reasonably even distribution of participant’s responses to questions about the financial impact of the park (Figure 6.7). In the PSGLMP the majority of participants felt the marine park had had little or no financial impact on them. Of the two who agreed one had expended significant amounts of money to upgrade his boat and car to allow him to travel further. The other blamed the marine park for contributing to a significant loss in business and the subsequent closure of his bait and tackle store. Another two PSGLMP participants stated that they were spending less money as they had downgraded their boats in response to the marine park given the availability of preferred fishing locations.

Well that is why I sold my boat, I sold it because I wasn’t using it, I wasn’t using it because it was ridiculous all these places where I knew I could catch fish and I wasn’t allowed to go there, so I put the boat on the market and that was it.

PSGLMP recreational fisher

In the BMP close to half the participants agreed the park had affected them financially. Of these four felt they were spending more money on fuel as they needed to travel further to their fishing sites. In addition three participants employed in the recreational fishing industry felt that they had lost money as a result of the marine park.

If we get another winter like last year where people aren’t spending money, we’re gone, we can’t afford to go through another one.

BMP recreational fisher and bait and tackle store owner

The clear majority of participants in both parks agreed with the statement that they were more angry, depressed or unhappy since the marine park (Figure 6.7). The dominant emotions around the marine park were frustration and stress and a feeling of persecution or unfair treatment (Table 6.3).

Table 6.4: Explanation of the main impact on wellbeing codes identified in the interviews with recreational fishers from the PSGLMP and BMP.

Impact on wellbeing code	Explanation	Quote
Frustrated or stressed	Participants were stressed about the financial impact of the park on their businesses, frustrated or stressed about the complexity of the park rules and concerned over being caught inadvertently doing the wrong thing. Some also reported they had found the planning process stressful because of the conflict within the community over the park.	<i>it's been very stressful, its affected quite a few friendships I thought I had, I can tell you a few people I don't talk to anymore because of it.</i> BMP recreational fisher
Persecuted	A belief they had been unfairly punished for the wrongdoings of others or from the park targeting fishing over other threats.	<i>Basically the sanctuary zone in a marine park is a no fishing zone it's not really a sanctuary zone. The only person that gets penalised for going in there is a person with a fishing rod, that's it – no one else. They should be called anti-fishing parks not marine parks.</i> PSGLMP recreational fisher
Deceived or betrayed	There was also a strong feeling of being deceived or betrayed with many fishers mentioning that the government had asked about their favourite fishing spots with the promise they would remain open, and they were subsequently made into Sanctuary Zones	<i>The first thing they said to us was show us where you fish and we'll promise we won't lock you out of there, so everyone gave up their favourite little spots they charted it all on the map and that's what they've taken off us.</i> PSGLMP recreational fisher
Ignored	Feeling ignored, powerless or deprived of a voice in the consultation process	<i>But that's just how the consultation worked, if you weren't in a Green group, they did not want to know you, didn't want to talk to you, didn't want to explain anything to you</i> BMP recreational fisher

6.3.1.4 Community impacts

In the PSGLMP research participants were evenly split between those who thought that the marine park had resulted in conflict and division within the community and those who believed that the park had in fact united the majority of the community in their opposition to the park. In the BMP all but three participants agreed or strongly agreed that the marine park had divided the local community and at least two of the three that disagreed did so because they believed the community had united against it (Figure 6.8). The degree of conflict participants had personally experienced varied from confrontational arguments through to an awareness of the conflict at play in the media. Some detailed incidences, including bullying, vandalism and heated exchanges, that occurred throughout the planning process.

“yeah you get in some arguments, there’s always the do-gooder that’s thinks they’re saving the world.”

BMP recreational fisher

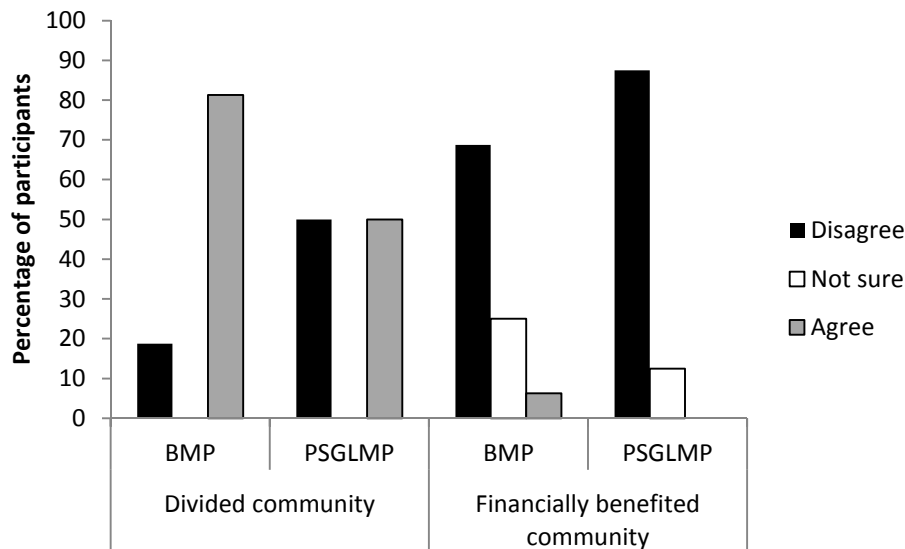


Figure 6.8: Recreational fishing participants’ responses to the statements: 1. The marine park has divided my local community. 2. The marine park has financially benefited my local community.

An area in which there was almost universal agreement amongst recreational fishing interview participants related to the impacts on the community. In each park the clear majority of the participants disagreed that the marine park had financially benefited their community (Figure 6.8). In the PSGLMP this was often attributed to overzealous or heavy-handed policing of the rules. They argued the imposition of heavy fines would impact upon tourist’s willingness to return to the area.

In the BMP there was a diversity of views about the effect of the park on local tourism. Some argued that while the marine park had not necessarily brought about improved tourism they were not convinced it had done any harm to the tourism market. This accounted for the majority of those nominating the ‘not sure’ category. The remainder believed the marine park had done significant damage either through the park itself or through the negative commentary of opponents in the media.

It was apparent that the highly specialised fishers interviewed in this study were most concerned about the loss of fishing-related tourism, particularly those tourists who were highly specialised fishers themselves and based their choice of holiday destination on fishing opportunities.

Narooma is not a healthy economy to start off with, its dead, this town is dying and the Marine Park did not help, the fishermen that used to come here and they would drink and smoke and gamble but they were healthy for our economy it was their once a year boys’ trip .

BMP recreational fisher

6.3.1.5 Do we need a marine park?

Perception about the necessity or effectiveness of the marine parks is likely to be a strong influence on community support. Figure 6.9 shows that the majority of participants in the PSGLMP were concerned about the health or management of the local waters. By way of contrast the majority of BMP participants were not concerned about the health or management of the local waters prior to the introduction of the marine park. They felt there were few or no threats to their local marine area, therefore the marine park was not necessary, and they took offence at 'outsiders' presuming to know what was best for the area:

I was never worried about the welfare of it because people looked after it, the people that were concerned and worried about the welfare of this didn't live here, they lived up in Sydney and anything goes up in Sydney.

BMP recreational fisher

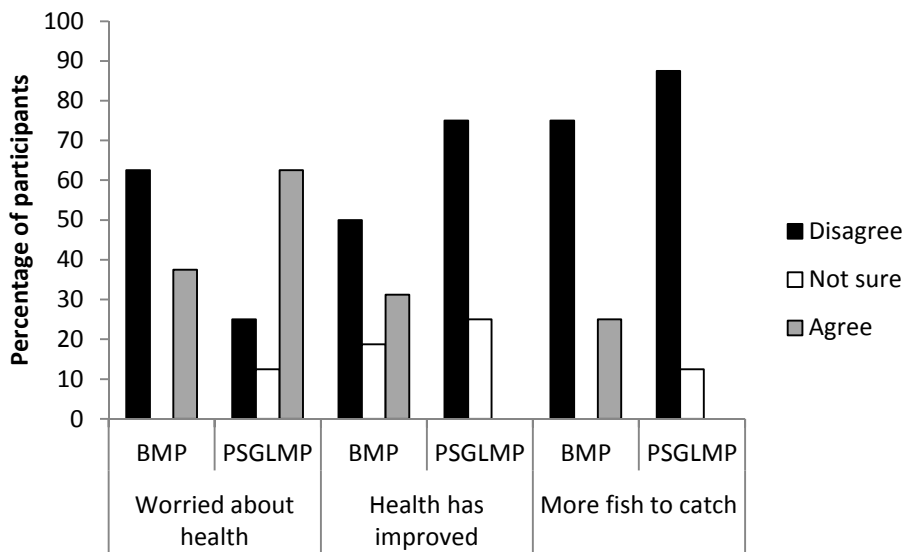


Figure 6.9: PSGLMP and BMP recreational fishing participants responses to the statements: 1. Before the marine park was declared I worried about the health and/or management of our local marine waters. 2. I think the health and/or management of our local marine waters has improved since the marine park was declared. 3. There are more fish to catch since the marine park was declared.

Those worried about the health of the marine environment cited the impacts of overfishing and pollution and habitat destruction as key concerns. They identified professional fishing as the primary user group responsible for overfishing, particularly the generic 'netting' category of professional fishing. The participants questioned the effectiveness of the marine park in managing the key threats

with the majority of participants disagreeing to the statement 'I think the health and/or management of our local marine waters has improved since the marine park was declared' (Figure 6.9).

In the BMP many participants noted the removal of board trawlers from the park as a major benefit of the marine park. This accounted for all those participants that agreed that health had improved and that there were more fish to catch (Figure 6.9). Even amongst the opponents of the marine park the removal of board trawlers generated support although many qualified this support by saying it could have been achieved through fisheries regulations without the need for the marine park.

"Because there's no trawlers we can go out there and catch a feed of flatties, whereas you'd be flat out doing that before with the trawlers"

BMP recreational fisher

6.3.1.6 Recreational fishers as knowledge holders

Consistent with the profile of a highly specialised fisher many research participants identified as 'knowledge holders' indicating in the interview their superior knowledge about fish, fishing and the local environment. Twelve of the 16 participants in the BMP and all eight PSGLMP recreational fishing interview participants were coded as 'knowledge holders'. In some this translated to a desire to 'teach' or pass on their knowledge, for others it was demonstrated through a sense of superiority or authority. Many (seven) were actively involved in fisheries-related activities such as research, government committees or lobby groups and felt they had a good working knowledge of fisheries and marine park legislation and policy.

All 16 fishers who were opposed to the marine park were coded as knowledge holders. Table 6.5 demonstrates how many of the main 'criticism' codes (the main ways in which the participants criticised the marine parks) related back to their perceptions of themselves as being knowledge holders and a belief that their knowledge was not respected, listened to or acknowledged in the planning process.

The notable exception to this rule was two interviewees (one from each park) who were both very actively engaged in the planning process and seemed to feel some ownership over the final product. They had had an authoritative voice in the planning stage through the media and roles on the planning committees. Their opinions were strikingly different to the other participants in that they felt the consultation process had been successful and the outcomes justified and necessary.

Table 6.5: Coding matrix: Knowledge holders by criticism codes for recreational fishers in the PSGLMP and BMP

'Criticism' codes	Knowledge holders coded for criticism codes		Example quote
	BMP (of 12)	PSGLMP (of 8)	
Marine park not supported by science: often involved personal investigation of science with the conclusion that science behind the parks was inadequate, not sufficiently localised or inconclusive.	10	4	<i>I sit and look at some of these scientists coming through and I just can't believe what they believe, they're in a different worlds, they're not talking fishing terms put it that way.</i> BMP recreational fisher
Marine park ineffective or not needed: we looked after it. we know what's best for the area. or marine park not addressing key threats.	11	7	<i>The threats now are the same now as they were before the marine park came along and that's inappropriate coastal development, pollution and habitat degradation, juvenile fish habitat. They were the things that needed to be addressed before the marine park came along. They are the same problems now and they haven't been addressed by the marine parks at all.</i> PSGLMP recreational fisher
Alternatives offered: discussion in the interviews of potential trade-offs, alternative or 'better' ideas offered to improve environmental health instead of no-take zones.	9	6	<i>I thought we'd go there with honest and genuine information to help create the marine park and the Sanctuary Zones and we gave them plenty of ideas on how to have a balanced marine park, but honestly it was Green driven.</i> PSGLMP recreational fisher
Misinformation (from government or media): Examples of areas in which participants felt the government, media or the Greens misled or misinformed less knowledgeable fishers/community members.	9	5	<i>There's been constant letters back and forth in the paper, but there's constantly being mistruths put in there so you constantly have to address them.</i> BMP recreational fisher
Preconceived agenda: perception that the government did not listen to knowledge holders' ideas or opinions, that the outcome was predetermined.	9	6	<i>we've tried to come up with a solution that could make it a pleasurable experience for everybody but it's just that they want that percentage of pink water, lock out, lock out, lock out.</i> PSGLMP recreational fisher
Outsider interference: perception that local knowledge was not respected that people from 'outside' were imposing their ideas on the local area.	7	2	<i>People from other areas think they know how to look after us.</i> BMP recreational fisher
Consultation inadequate: Sense of not being heard or listened to.	6	7	<i>I formed the opinion after a while that we were only there to comply with the legislation that required consultation, we weren't actually achieving anything.</i> PSGLMP recreational fisher

6.3.1.7 Fairness and equity

Half (twelve) of the participants pointed out their own sustainable fishing practices which included practising catch-and-release fishing, regulating their own more stringent bag and size limits or only taking what they needed. They sought to present themselves as sustainable fishers who cared about the marine environment.

We don't take the big ones because they are breeders..so we select our fish, for every ten you take home your throwing 40 away.

PSGLMP recreational fisher

A number of inter-related codes emerged from the data all of which point to a disillusionment around issues of equity and fairness. Fishers felt unfairly persecuted by rules that restricted their activities but didn't do enough to restrict those of other user groups or activities that they felt were more destructive of the environment. Table 6.6 shows how the issue of fairness became a dominant theme in the data and how it was related to other key concepts.

Table 6.6: Coding matrix: Criticism codes by social impact codes relating to fairness and equity for recreational fishers in the PSGLMP and BMP

Criticism codes	BMP impact codes		PSGLMP impact codes		Example quote
	Persecuted	Unfair	Persecuted	Unfair	
Little or no threats to local area	10	10	2	2	<i>This is one of the healthiest estuaries in NSW and they give us a marine park?</i> BMP recreational fisher
Marine park ineffective or not needed	9	10	4	6	<i>Well the things is fish swim and I can't see how they will know there is a line in the water, and where a Sanctuary Zone is and where it's not.</i> PSGLMP recreational fisher
Other user groups to blame	9	10	1	2	<i>If you are going to lock one or two groups out lock everyone out, the only one that was left allowed in there was scuba divers, they were still allowed in to harass the sharks.</i> PSGLMP recreational fisher
We were ignored, disempowered	6	6	2	3	<i>We pleaded with them to leave us a section out the front here but there was no consultation as far as that went, it was just thrown at us and that was that.</i> BMP recreational fisher
My fishing technique benign	5	5	3	6	<i>..we are not against conservation by any means, because I want to keep fishing for the next however many years, but I don't think what people like us do really hurts anything.</i> BMP recreational fisher

6.3.2 Professional fishers

6.3.2.1 Research participants

Six professional fishers were interviewed within the PSGLMP. All were males aged 30-59 years. Most had lived in the area for over 20 years. Three lived south, and three lived north, of Port Stephens. Most had education levels of year 12 or below. All the professional fishers interviewed were strongly opposed to the marine park at the time of the interview, and most were opposed prior to its introduction (Figure 6.10).

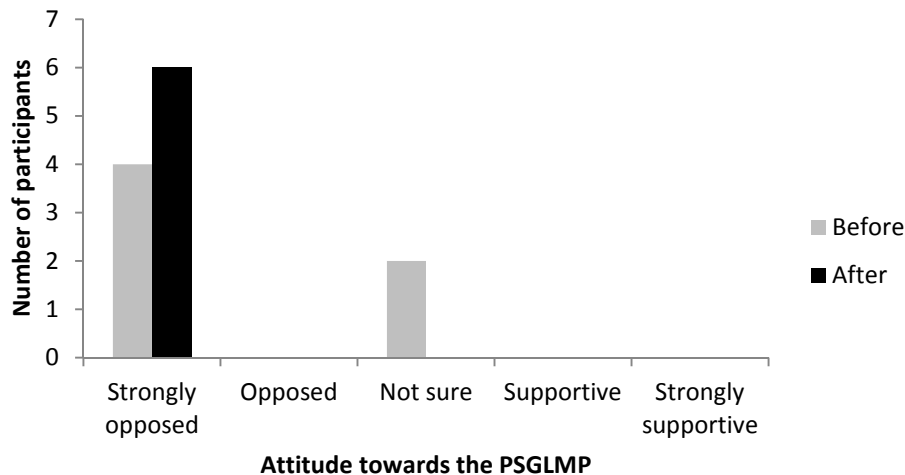


Figure 6.10: Levels of support and opposition to the PSGLMP by professional fishing interview participants – participants were asked to rank their opinion when they first heard about the park (before implementation) and now (after implementation).

Nine professional fishers were interviewed within the BMP. One was aged under 29 years, six were between the ages of 45-59, one was between the ages of 60-74 and one was over 75. Two were female. Only one participant was a 'recent' arrival (<19 years) the remainder having lifelong or very long-term connections to the area. Research participants were evenly split between residents of the northern section of the park around Batemans Bay and residents of the southern section of the park around Narooma. Half had education levels of year 10 or below, one had completed year 12, one fishermen's wife had a Bachelor degree and the remainder had trade certificates or diplomas. All the professional fishers were strongly opposed or opposed to the marine park at the time of the interview, and prior to its introduction (Figure 6.11).

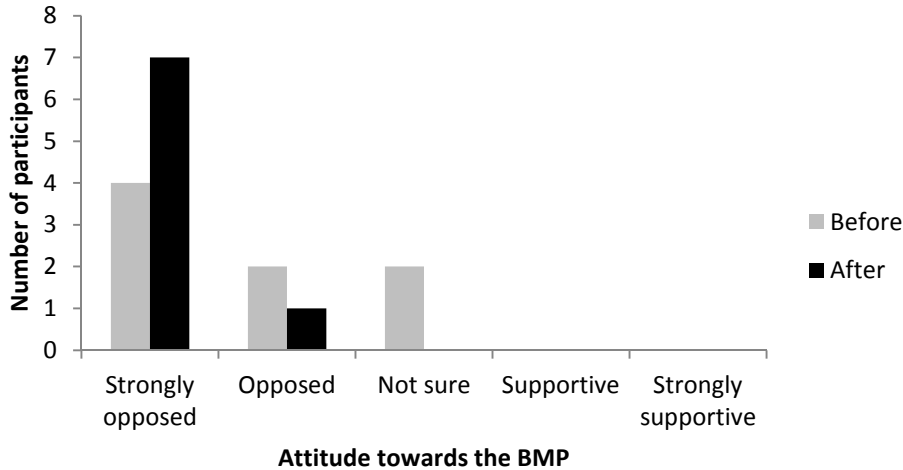


Figure 6.11: Levels of support and opposition to the BMP by professional fishing interview participants – participants were asked to rank their opinion when they first heard about the park (before implementation) and now (after implementation).

Most indicated a range of reasons for choosing fishing as their profession. The single greatest motivation to fish was a sense of heritage (Figure 6.12). This was particularly pronounced in the BMP. These fishers indicated that their families had been involved in fishing over several generations. Other motivations included being outdoors, being self-employed, the camaraderie of the industry and testing and developing skills and knowledge.

“It’s a lifestyle it’s something we’ve grown up with...I’ve been floating around the ocean since I was 7 year old.”

BMP professional fisher

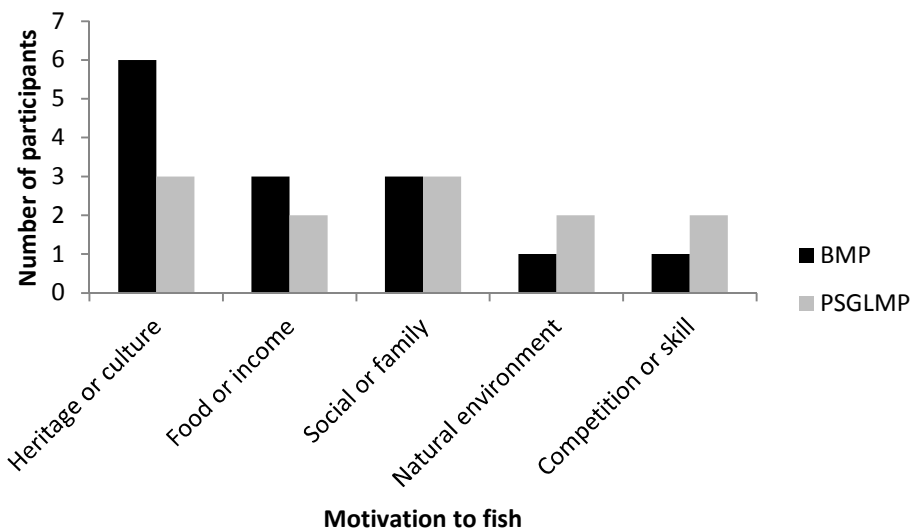


Figure 6.12: Motivation to fish for professional fishing interview participants.

6.3.2.2 Fishing effort and enjoyment

Professional fishers interviewed included those actively engaged in fishing and others who had reduced their activity in the industry as a result of marine park licence buy outs. They included fishers from beach haul, ocean haul, estuary mesh, prawn trawl, ocean trawl, and ocean trap and line sectors. All classified themselves as very frequent fishers prior to the marine park.

Participants had adjusted their effort in a variety of ways in response to the marine parks (Figure 6.13). Some (one in the PSGLMP four in the BMP) had decreased their effort after selling part or all of their business in the buyout process, or losing access to some sectors they had previously fished through restrictions on methods within the marine park boundaries. Others had increased their fishing effort to try and catch the same amount of fish they had caught prior to the park or were travelling outside the park boundaries to access new grounds. All PSGLMP professional fishers and nearly half the BMP fishers agreed that the marine park had affected their enjoyment of fishing (Figure 6.13).

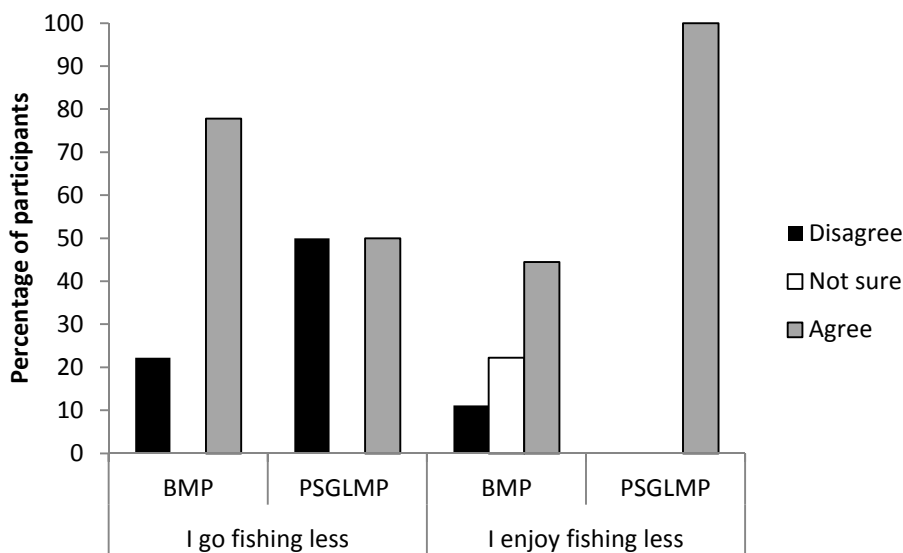


Figure 6.13: Professional fishing interview participants (%) responses to the statements: 1. 'I go fishing less often because of the marine park' and 2. 'I enjoy fishing less because of the marine park'.

Thirteen of the fifteen professional fishers interviewed discussed the cumulative loss of access to fishing grounds from the marine park on top of previous restructures, regulatory changes and the implementation of a system of recreational fishing havens (see Chapter Four). They indicated that these consecutive reforms had led to overcrowding and overexploitation of remaining fishing areas. Cumulative closures had also resulted in a range of secondary impacts including the loss of flexibility and the need to travel further. Table 6.7 provides further details of the major impacts on fishing enjoyment for the professional fishing interview participants.

Table 6.7: Explanation of impact on enjoyment codes identified in the interviews with professional fishers from the PSGLMP and BMP.

Impact on enjoyment code	Marine Park	Explanation	Quote
Flexibility	PSGLMP	Loss of options, 'freedom of choice'. Some fishers mentioned that the loss of options in less populated areas meant that they had been pushed into areas that were more visible to the general public. This had resulted in a greater number of complaints about their activities.	<i>The places where we historically used to go weren't visible because there were no houses there..now we're jammed into these areas where there are houses and the people live on the water, it's their area as far as they're concerned, no-one else should be using it especially not those horrible professional fishers.</i> PSGLMP professional fisher
	BMP	Loss of options during particular times of year, especially winter when options for target species are more limited due to seasonal variability. Loss of flexibility to diversify fishing interests.	<i>We were into everything...you didn't have to work any one method or any one fishery into the ground.</i> BMP professional fisher
Complexity	PSGLMP and BMP	Complexity of the zoning system and regulations. Complexity of government consultation methods in an industry that traditionally has low levels of formal education.	<i>A lot of fishermen just walked out because they didn't understand it, you have to have a university degree to understand what they're talking about.</i> BMP professional fisher
Travel further	BMP	Need to travel further to access fishing grounds. At least two ocean trap and line fishers spent the majority of the winter months in Eden and the estuarine fishers also reported they needed to travel further to gain access to the lakes that had remained open after the recreational fishing haven and marine park closures.	<i>When I'm meshing I've got to go down to Wallaga Lake, I've got to run around and chase fish, hoping that someone hasn't been down there the night before because it is so far, there's a lot more competition, 'cause we're all fishing the same area.</i> BMP professional fisher
Overcrowding	PSGLMP	Overcrowding and increased competition – perception that the buyout process had not taken out enough active fishers and the amount of area closed to fishing was disproportionate to the number of fishers removed from the industry.	<i>What's happening is that guys are full laying on, which is holding a shot early in the morning to hold a mesh shot that night, whereas that never ever used to happen at all. They park their truck and their boat on that spot and hold the shot all day...so they can have the shot that night.</i> PSGLMP professional fisher
	BMP	Significant competition particularly for estuarine sites with the result being that particular areas were overworked and stocks had depleted.	<i>With fishing you cannot work in one area constantly, you must shift from lake or rivers and work up and down the coast, and this is the problem that it's had, it's putting too many people in one area and that's not good.</i> BMP professional fisher

6.3.2.3 Impacts on personal wellbeing

In the PSGLMP opinion was divided over whether the marine park had impacted on their family life (Figure 6.14). Some participants felt that their family was resilient to the changes the marine park had introduced and that they would not 'let' the park affect their family life. Others felt that the park had affected their relationships, with at least two blaming their marriage breakdowns at least in part on the lack of financial security and future in the fishing industry.

My wife just left me 6 months ago, she'd had enough, there's no future, the payout was peanuts..I would have been out of money by the time I'm 54..and what do I do?

PSGLMP professional fisher

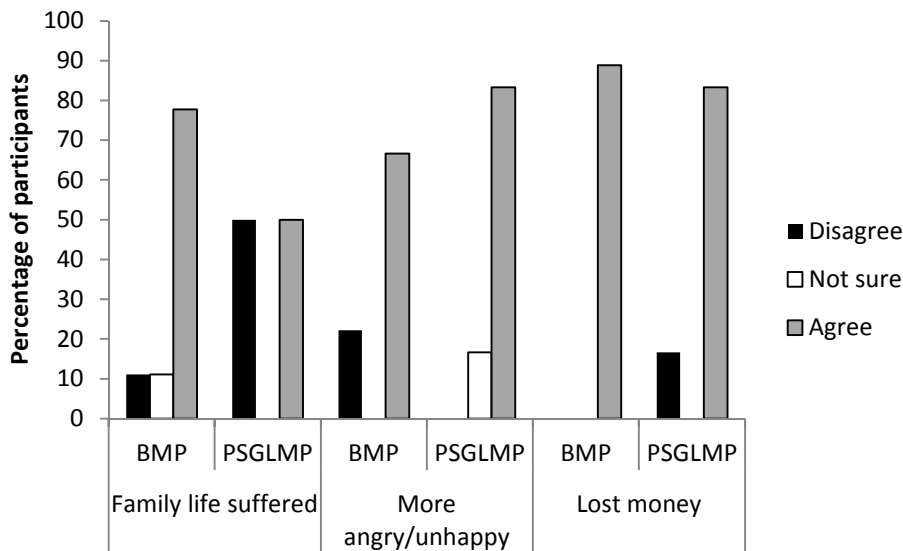


Figure 6.14: Professional fishing interview participants' responses to the statements: 1. My family life has suffered since the creation of the marine park. 2. I feel more angry, depressed or unhappy since the creation of the marine park and 3. I have lost money because of the marine park (NB non responses omitted).

In the BMP almost all the interview participants agreed that the marine park had affected their family life. They talked about the stress of the process, the resulting financial pressure and the incidences of suicide, depression and family breakdowns within the professional fishing community.

This marine park and the way it was handled and the way we were all treated has created a lot of family problems in the sense that men and women have been diagnosed depressed, families have been torn apart, marriages have fell apart because of the pressure and the strain both emotional and financial.

BMP professional fisher

All but one of the fishers interviewed across both parks agreed they had lost money as a result of the park (Figure 6.14). They cited direct impacts on their capacity to earn, increased expenses arising from the need to travel further and the devaluing of their assets. The one (PSGLMP) participant who did not feel the marine park had had a financial impact attributed this to the fact that he had diversified his business interests prior to the establishment of the marine park and so was able to adapt more readily to the changes. Opinions were varied over the licence buyout that accompanied the park. Four fishers interviewed believed the amount they received, or was received by others they knew, had been a fair estimation of the value of the businesses, if not an overestimation. Others felt that the process was unfair and that the compensation offered did not adequately take into account the fluctuations in their business earnings due to external factors such as the prolonged drought that was affecting productivity during the buyout process. A common view of the buyout was that they had not removed enough fishers in proportion to the area lost.

The buyout was conducted extremely poorly and they took out 20-30 businesses the majority of those weren't doing much effort anyway and the fishermen from other areas just came in and took up the slack.

BMP professional fisher

Most participants agreed that the marine park had made them more angry, depressed or unhappy (Figure 6.14). Table 6.8 provides further details of the major impacts on wellbeing for the professional fishing interview participants.

6.3.2.4 Community impacts

In the PSGLMP opinions were mixed as to whether the marine park had divided the community with some feeling the community was in fact united against it (Figure 6.15). However there was considerable discussion about conflict between professional fishing and the community as a result of being forced to work in more visible areas, or among professional fishers as a result of greater competition for space. There was also some discussion of conflict with recreational users due to the limited availability of fishing grounds.

In the BMP, the professional fishers interviewed spoke passionately about the impacts of the marine park on the community. Most agreed the park had divided the community (Figure 6.15). When they spoke of conflict within the community it was largely in relation to the 'Green' movement. Many believed this Green movement had an extreme approach to conservation that excluded humans, was impractical in the real world and was designed to completely shut down professional fishing.

If you look to the extreme Green side of things they think that man is the problem, if we get rid of man it will all look after itself, but that doesn't work - are they going to be the first ones to line up to leave? We've still got to live here, we've still got to exist.

BMP professional fisher

Table 6.8: Explanation of the main impact on wellbeing codes identified in the interviews with recreational fishers from the PSGLMP and BMP.

Impact on wellbeing code	Explanation	Quote
Deceived or betrayed	Feeling that the government had lied to them or betrayed them. Including perception they were being punished despite their best efforts to fish sustainably and contribute to the local economy, or that the government had used the information they had provided against them or by making significant changes to the zoning plan between the draft and the final plan without further consultation.	<i>They were ruthless, we told them our spots and they closed them. Nelson Bay Beach and Dutchies Beach were never in the original proposal and between the draft plan and the final plan they got added.</i> PSGLMP professional fisher
Depressed or unhappy	Unemployment, incidences of suicide as well as family breakdown and depression.	<i>I could drown myself tomorrow it wouldn't worry me, it'd be peaceful, but there's 2 or 3 blokes on the coast since the recreational closures that did themselves in.</i> BMP professional fisher
Persecuted	Sense that professional fishers were being targeted in favour of the more vocal and powerful recreational fishing sector and that they were being unfairly blamed for environmental problems.	<i>you know the writings on the wall..you've got the noose around your neck so you're just waiting for someone to open the bottom gate. It's how it's eventually going to go, it's never going to go better.</i> PSGLMP professional fisher
Frustrated or stressed	Stress over the financial impact of the park on their businesses, and the flow-on effect on their lifestyles and ability to pay for their living expenses.	<i>I was so stressed out when this came in, I don't know - did that have something to do with my stroke?</i> BMP professional fisher

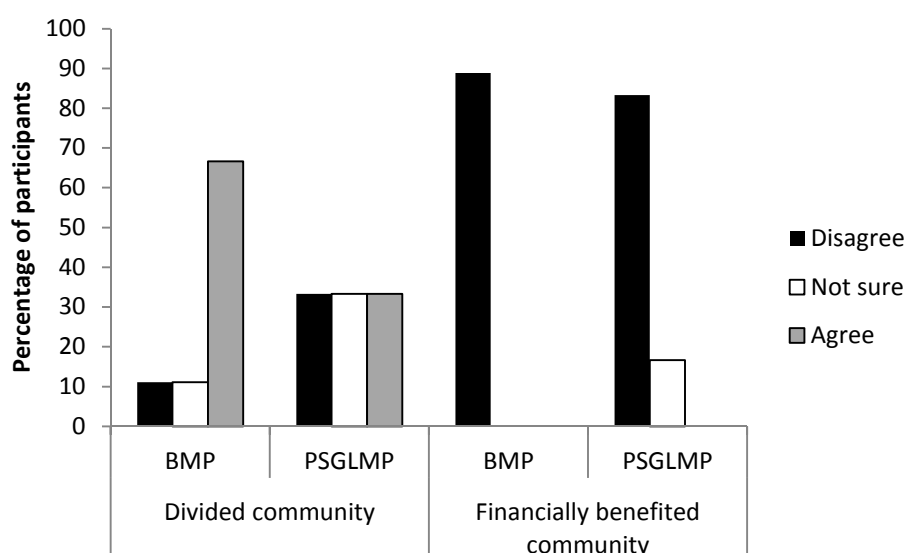


Figure 6.15: Professional fishing participant's responses to the statements: 1. The marine park has divided my local community. 2. The marine park has financially benefited my local community (NB non responses omitted).

Almost all the professional fishing interview participants across both marine parks disagreed that the marine park had financially benefited the local community (Figure 6.15). They felt the marine park had done significant damage to local tourism by deterring fishing tourists. In addition there was concern over the loss of seafood availability in the towns where the local communities had been deprived of fresh local seafood.

it's a public resource and we are supplying 80-85% of the population with fresh local produce, not anymore

BMP professional fisher

6.3.2.5 Do we need the marine park?

Most participants were not concerned for the health or management of the local waters prior to the introduction of the marine park and none agreed with the statements that the marine park had resulted in improvements in environmental health or fish catches (Figure 6.16). Therefore they felt the marine park was an unnecessary and ineffective management tool.

Well I can put it this way, we don't really need it, the ocean out here doesn't need to be closed off there's no overfishing or danger to certain species, you've got your Grey Nurse Shark, I've never even seen one and that goes for all the fishermen.

BMP professional fisher

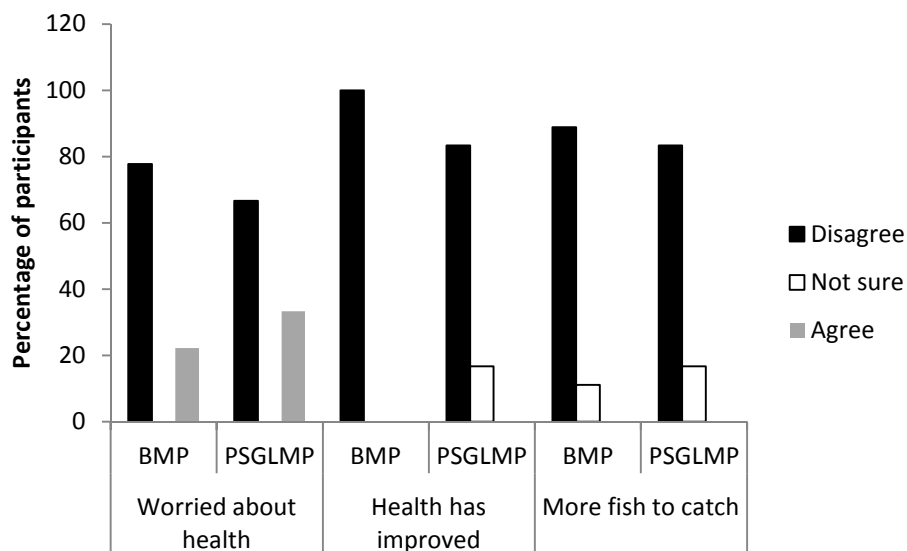


Figure 6.16: PSGLMP and BMP professional fishing participants' responses to the statements: 1. Before the marine park was declared I worried about the health and/or management of our local marine waters. 2. I think the health and/or management of our local marine waters has improved since the marine park was declared. 3. There are more fish to catch since the marine park was declared.

6.3.2.6 Professional fishers as knowledge holders

All of the interviewed professional fishers reported they felt they held a lot of knowledge about the environment in which they worked and many also felt that they acted as custodians of that environment. They believed they had a strong cultural or historical connection to fishing and the local community through their own family heritage. As previously mentioned this fishing heritage was one of the most cited motivations for choosing their employment in the professional fishing sector. Table 6.9 demonstrates that BMP fishers appeared to have a particularly strong attachment to their local community and their profession perhaps reflecting the long history of fishing in that area.

Table 6.9: Coding matrix: Knowledge holders by 'sources of knowledge' and 'social identity' codes for professional fishers in the PSGLMP and BMP

'Sources of knowledge' and 'social identity' codes	Knowledge holders coded for sources codes		Example quote
	BMP (of 9)	PSGLMP (of 6)	
Motivation to fish: Heritage or culture, historical connection to fishing	8 (89%)	3 (50%)	<i>I grew up with it, my father was a fisherman, his father was a fisherman and his father was a fisherman.</i> PSGLMP professional fisher
Intergenerational connection (to area, fishing or fishing related industry)	8 (89%)	3 (50%)	
Professional fishers as custodians. Fishers as caretakers of the local environment.	7 (89%)	4 (37%)	<i>The fishermen does his own management plan – he does half the management plan and god does other half because of the weather.</i> PSGLMP professional fisher
Social position: Employer or community leader. Social standing in local community based on profession or long term connections.	4 (44%)	2 (33%)	<i>We used to have a business a few years ago I used to have 30 people working for me and now you...look at me and we've just gone backwards.</i> BMP professional fisher
Connection to place: Cultural or historical, historical connection to the town often through multiple generations.	3 (33%)	1 (17%)	<i>Its 100 years this year since our family starting fishing in Narooma.</i> BMP professional fisher
Connection to place: Community, strong attachment to the local community.	5 (55%)	1 (17%)	<i>It's important to be honest when you are in a small town, you need to be able to have a good reputation and that's important to us.</i> BMP professional fisher
Motivation to fish: Service to community. Provision of a professional service to the community.	5 (55%)	0	<i>We took a lot of pride in providing our community with the tasty school prawn.</i> BMP professional fisher

It was the BMP fishers who had a strong sense of identity centred on fishing and a role as service providers to their local community who appeared to feel most hurt by the changes brought about by the marine park. These fishers were also the most likely to indicate feelings of depression as a result of the marine park.

..you don't know what it's like..to go from employing people and the things that we had, we had the trucks and the marina and the scallop sheds and..it's all gone. And to go from that and in four years to have an overdraft at my age just to try and keep things going, that hurts worse than anything.

BMP professional fisher

6.3.3 Indigenous fishers and the PSGLMP

6.3.3.1 Research participants

Eight Indigenous fishers were interviewed within the PSGLMP. Five were male, 3 were female, 1 was aged 45-59 and the remainder were over 60. Most were Worimi people who had lived in the area their whole lives while a number had moved away for some period of time and returned to country later in life. They lived in range of locations around the Port Stephens area. All but one had education levels of year 10 or below. Most of the Indigenous fishers interviewed in the PSGLMP were opposed to the marine park at the time of the interview, and their opinions had not changed significantly from this original position (Figure 6.17).

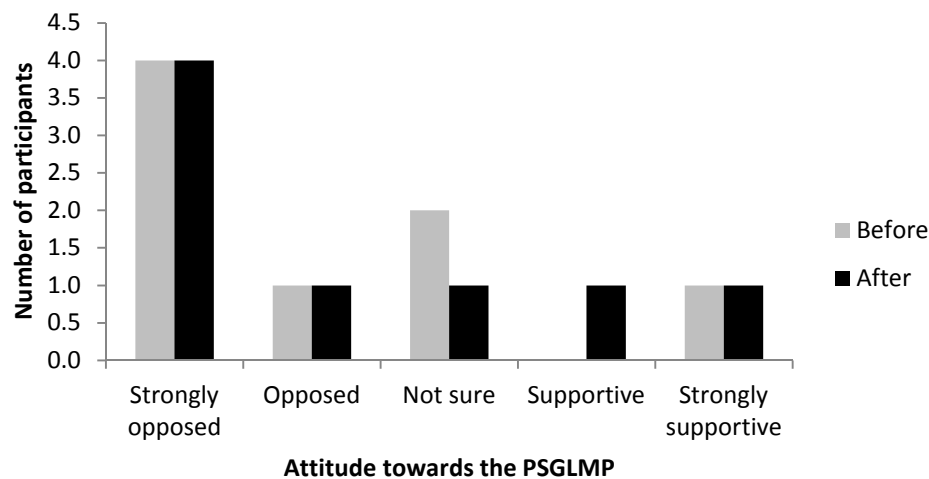


Figure 6.17: Levels of support and opposition to the local marine park by Indigenous interview participants – participants were asked to rank their opinion when they first heard about the park (before implementation) and now (after implementation)

Six Indigenous fishers were interviewed within the BMP. All were aged over 45, male and were lifelong residents of the areas. They lived in various locations from Batemans Bay to Moruya. Most had education levels of year 10 or below. Three of the interview participants were current or ex-professional fishers. The remaining three fished recreationally or in order to practise cultural fishing using methods taught to them by previous generations, including gathering of seafood for cultural events, celebrations and funerals.

All three of the Indigenous current or ex-professional fishers interviewed from the BMP were strongly opposed to the marine park at the time of the interview, and prior to its introduction (Figure 6.18). The two non-professional fishers were opposed or not sure initially but one had become supportive since its introduction. The remaining fisher felt ambivalent towards the BMP, which he supported in principle but felt in practice had unfairly impacted cultural use.

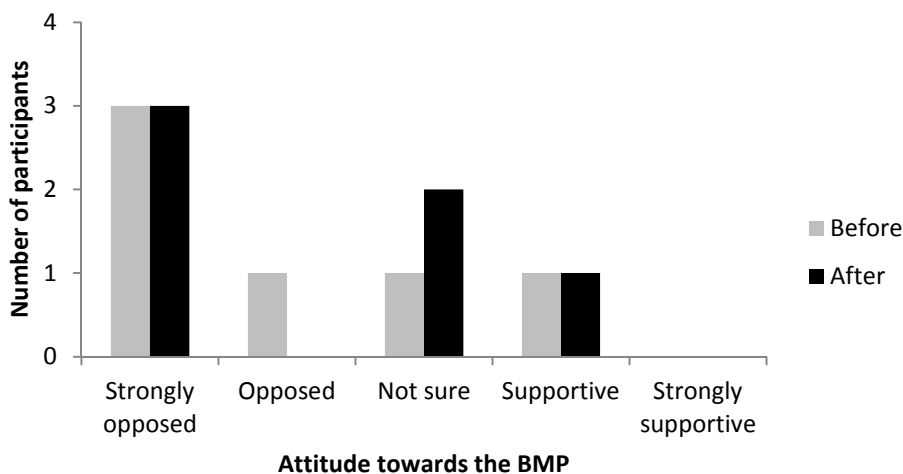


Figure 6.18: Levels of support and opposition to the local marine park by BMP Indigenous interview participants, who were asked to rank their opinion when they first heard about the park (before implementation) and now (after implementation)

Very consistent reasons were given by all the research participants about why they fish and what they enjoy about fishing (see Figure 6.19). Most talked about the importance of fishing as a cultural practice that allowed them to be on and connected to country. A primary motivation to fish was the provision of food for themselves, their families and their communities. Participants talked about the importance of seafood in their traditional diet and the health benefits of seafood for Aboriginal people.

This place has always been our supermarket, we know when and where and how to go and get all our food, our medicine plants

BMP Indigenous fisher

Very closely linked to this was the concept of fishing being part of the social glue of Indigenous families and communities, a cultural practice that involves teaching and learning, storytelling and the provision of the dietary needs of elders and others in the community. Participants discussed the sharing of catch with family, friends and the wider Aboriginal community.

I love being out fishing on country, it's a cultural thing but it also provides food, not just for the family but it's shared around to the other families.

PSGLMP Indigenous fisher

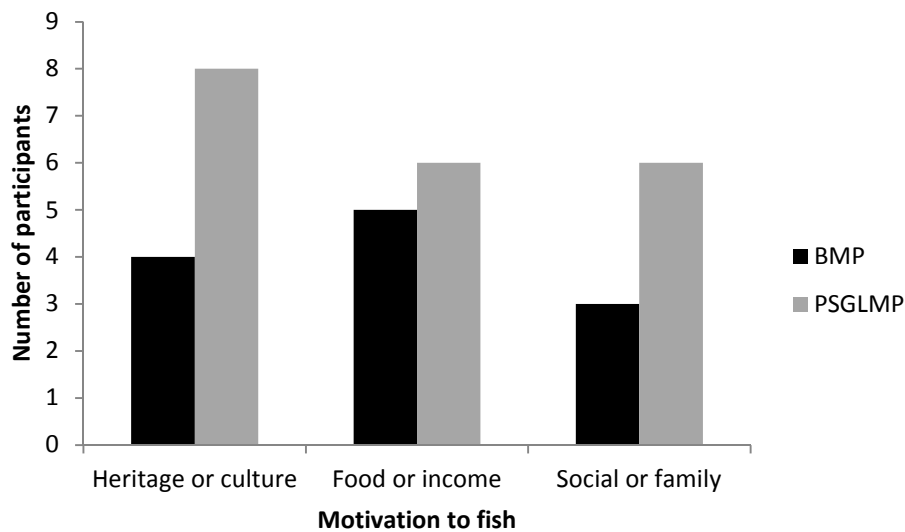


Figure 6.19: Motivation to fish according to Indigenous interview participants – participants were asked why they fished, and what they enjoyed about fishing.

6.3.3.2 Fishing effort and enjoyment

PSGLMP Indigenous fishers interviewed included those currently and previously engaged in professional fishing, oyster production and cultural use. Most (seven in the PSGLMP and five in the BMP) indicated they were very frequent fishers prior to the marine park. Most believe they now fish less as a result of the marine park (Figure 6.20). One of the professional fishing participants in the BMP reported he went fishing more now as a result of the park as he had to work harder to obtain consistent catches.

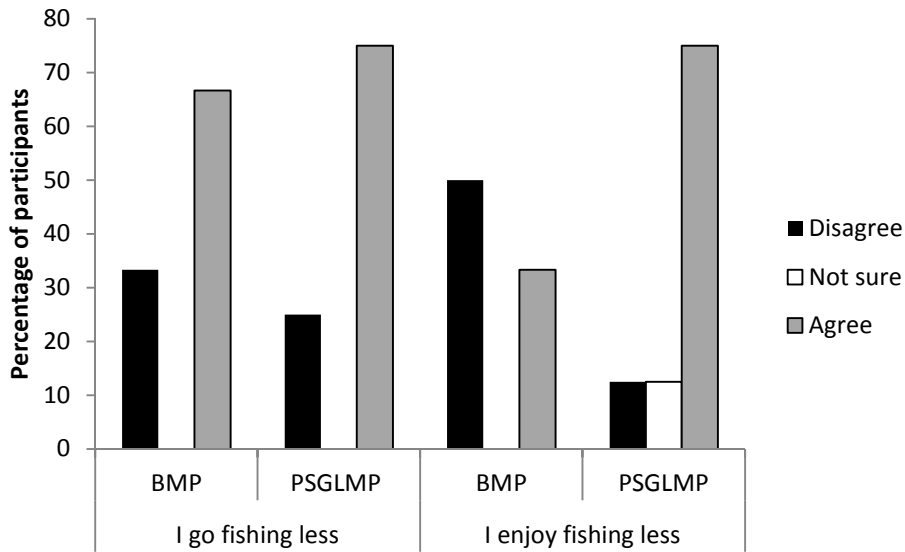


Figure 6.20: Indigenous fishing interview participants' (%) responses to the statements: 1. 'I go fishing less often because of the marine park' and 2. 'I enjoy fishing less because of the marine park'.

The majority of PSGLMP indigenous fishers also indicated they enjoyed fishing less as a result of the marine park (Figure 6.20). They stated that they had lost a considerable amount of access to traditionally fished sites. The importance of these sites as historically and culturally fished locations was emphasised through the interviews.

There's still places to fish but it's not going to feel right fishing in a place where you haven't been or you're not used to...that was the key to having cultural spots because they knew, my early ancestors knew that these were the hotspots and we kept them a secret and we used to go there all the time.

PSGLMP Indigenous fisher

All but one BMP participant reported they had lost access to a traditionally fished or favourite fishing location through the zoning process. For the two current Indigenous professional fishers interviewed the issues raised were consistent with many of the concerns of non-Indigenous professional fishers. They included the cumulative impact of recreational fishing havens and fisheries regulations, which they believed had led to increased competition for resources.

now with the marine park and the fish havens we've lost 90% of the areas where we used to work...and now the areas that's left open to us you've got fishermen coming in and you've got fishermen coming out.

BMP Indigenous professional fisher

6.3.3.3 Impacts on personal wellbeing

Most participants agreed that the marine park had impacted on their family life (Figure 6.21). In particular they mentioned the impact it had had on their ability to cater for the dietary needs of their community, particularly the elders. Others also talked about the loss of the ability for their children to carry on the tradition of fishing either culturally or professionally.

I'm a 5th generation fishermen...but I don't know if there will be a 6th generation because I'm not allowed to show my grandson or my nephew how to fish, they are not allowed to touch the net..I don't know how I'm going to teach him.

BMP Indigenous professional fisher

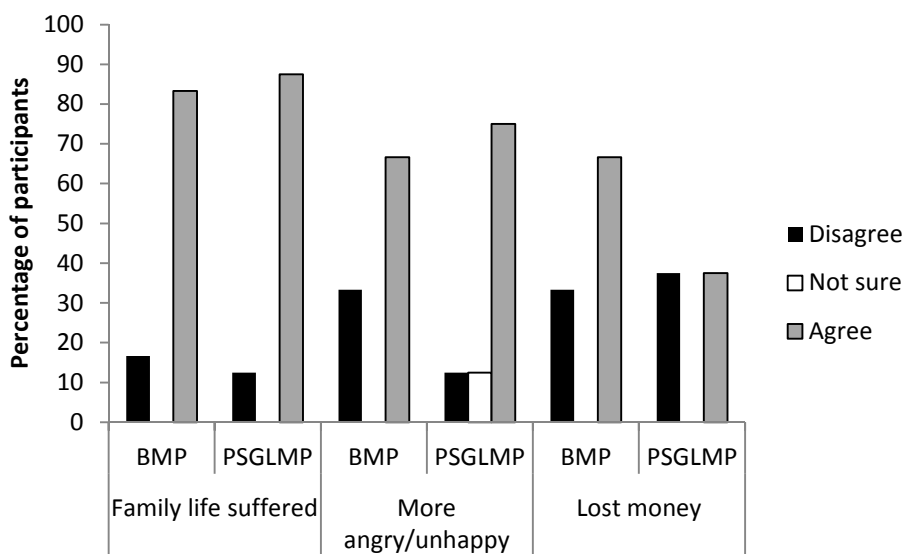


Figure 6.21: Indigenous fishing interview participants' responses to the statements: 1. My family life has suffered since the creation of the marine park, 2. I feel more angry, depressed or unhappy since the creation of the marine park, and 3. I have lost money because of the marine park (NB non responses omitted).

Many participants also agreed that they had lost money (Figure 6.21). For the professional fishers this was related to direct impacts on their capacity to earn. For one cultural fisher it was related to the need to spend more money on purchasing rather than catching seafood for consumption.

Similarly most agreed that the marine park had made them more angry, depressed or unhappy (Figure 6.21). The dominant emotions around the marine park were feelings of persecution, being ignored or anger (Table 6.10).

Table 6.10: Explanation of the main impact on wellbeing codes identified in the interviews with Indigenous fishers from the PSGLMP and BMP.

Impact on wellbeing code	Explanation	Quote
Persecuted	The marine park as another chapter in a long history of racism and oppression, including placing the park in a historical context of discrimination and dispossession. Commonly discussed in conjunction with Fisheries legislation in the BMP.	<i>First they took our land now they've taken our waterways. Fishing was our life.</i> PSGLMP Indigenous fisher
Ignored or disempowered	Feeling of disempowerment as a result of government processes. Fighting for attention against other interest groups or finding it difficult to adequately convey meaning within unfamiliar or uncomfortable bureaucratic processes.	<i>You will never understand Aboriginal people or Aboriginal culture till you sit down on the beach or the headland and talk to them. You go to these meetings and you only get a few minutes to talk and it's hard to think of everything you want to say.</i> BMP Indigenous professional fisher
Frustrated or stressed	Frustration or anger over slow, complex or inflexible bureaucratic processes. Stress associated with having large fines attached to fishing in traditional areas.	<i>They are arrogant silly people who don't understand our culture. I get angry and swear at them I know I shouldn't but I do. I've been told I'm aggressive, well I am aggressive when it comes to my culture. They think all black fellas lay under trees drinking and doing drugs, well I've never drunk.</i> PSGLMP Indigenous fisher
Health	Health impacts relating to loss or depletion of opportunities to access to a major component of the diet of local families.	<i>We have a major concern that our elders are not getting access to stuff that they were brought up on and our young people can't provide it because of the marine park regulations and fisheries regulations</i> PSGLMP Indigenous fisher

6.3.3.4 Community impacts

In both parks there was general agreement that the marine park had divided the community or exacerbated an existing point of division in the community over access to fish resources (Figure 6.22). There was general disagreement about whether the marine park had financially benefited the local community, with some feeling it had discouraged tourism. Others talked about the increased expense to community members who now need to purchase fresh fish.

there's nothing worse than having to go and buy your own fish because prices are outrageous when once upon a time we all went out and caught it.

PSGLMP Indigenous fisher

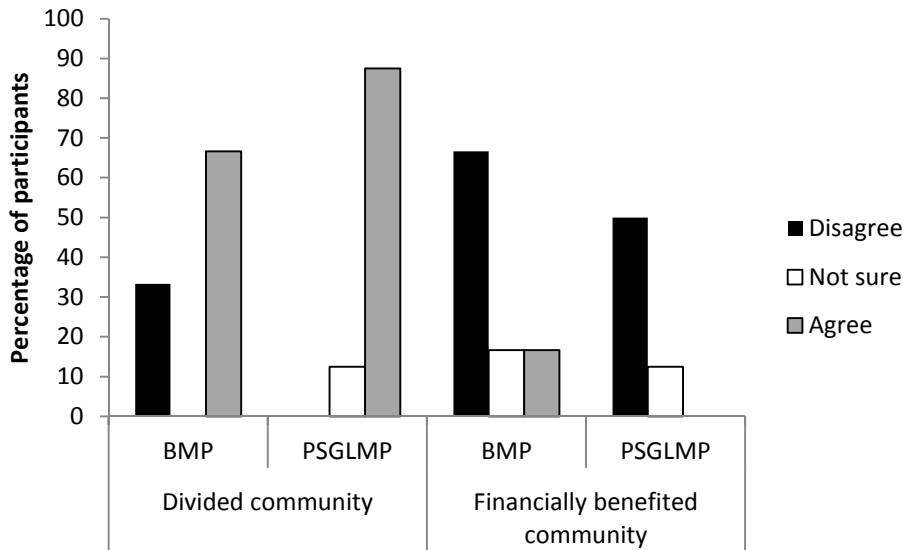


Figure 6.22: Indigenous fishing participants' responses to the statements: 1. The marine park has divided my local community, and 2. The marine park has financially benefited my local community (NB non responses omitted).

6.3.3.5 Do we need a marine park?

Most Indigenous participants were concerned about the health or management of the local waters prior to the introduction of the marine park (Figure 6.23). Almost all noted that they supported the concept of the marine park and felt it was an important and necessary tool for improving marine conservation.

I'm fine with the marine park, I think it needed doing..if they want fish for the future they need to learn to do it properly because they're not going to have any if they don't.

PSGLMP Indigenous fisher

Participants listed a range of concerns they had about the local marine environment, including overfishing by professional operators, pollution, habitat destruction, over development and sand movement. In the PSGLMP most felt that the marine park was an effective tool for managing environmental threats, particularly overfishing. However this had not translated to a perception that there were more fish to catch since implementation of the marine park (Figure 6.23). Participants described the dramatic decline in fish numbers they had witnessed in their lifetime with a general feeling that fish stocks had all but collapsed in the area due to pollution, overfishing and habitat destruction.

when the fish started to travel I used to see swarms of schools travelling from the ocean all the way along and that would have been only 30 years ago. You never see that anymore.

PSGLMP Indigenous ex-professional fisher

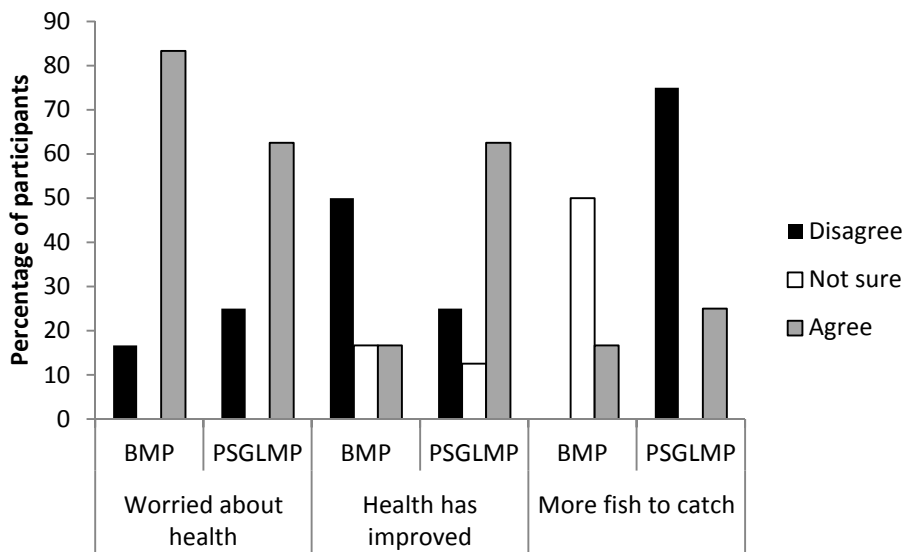


Figure 6.23: PSGLMP and BMP Indigenous fishing participants' responses to the statements: 1. Before the marine park was declared I worried about the health and/or management of our local marine waters, 2. I think the health and/or management of our local marine waters has improved since the marine park was declared, and 3. There are more fish to catch since the marine park was declared (NB non responses omitted).

While some felt the marine park had resulted in a small recovery others held grave fears about the return of fish.

I'm 65 years old, I've seen a lot of changes, I predict in another 20 years..it will all be gone.

PSGLMP Indigenous professional fisher

Conversely others felt that fish stocks had improved but it was not possible to catch them because of too heavy restriction of access.

It may have improved as far protecting the habitats and that but it certainly hasn't helped the Aboriginal people.

PSGLMP Indigenous professional fisher

In the BMP all three of the Indigenous fishers associated with the professional fishing industry felt that the park had been ineffective at managing key threats or improving the health of the local waterways. Most were unsure as to whether the park had increased fish stocks (Figure 6.23).

6.3.3.6 Indigenous fishers and cultural use rights

Despite a high level of concern for the marine environment and a belief in the value of marine parks many of the Indigenous interviewees felt angry and upset about the park and its implementation. This appeared to be closely linked to arguments around cultural fishing rights as well as a strong sense that Indigenous people were custodians and knowledge holders in relation to sea country. They believed they had been sustainably fishing these areas for thousands of years and that they were not responsible for the problems that were threatening the health of the marine environment. They therefore felt they should not be punished or excluded from these areas.

I find that really offensive because we were there first, we were there fishing before any marine park ever happened and we shouldn't be held responsible for the lack of fish in this Port.

PSGLMP Indigenous fisher

Participants felt the experience and knowledge that they held was not respected, acknowledged or considered during the consultation process.

..they've got no idea, we have way more fishing education than a lot of these fisheries people but they think they know best because they have all those letters after their name.

BMP Indigenous professional fisher

6.3.3.7 Loss of culture and health impacts

The Indigenous fishing research participants spoke extensively of concerns about the impacts of fisheries or marine park regulations on their culture. This related closely to acts of sharing seafood resources with family and the wider Indigenous community. For professional fishers they worried restrictions on family participation in professional fishing activities undermined their ability to pass on cultural knowledge. Discussions with Indigenous professional fishers suggested that the acts of fishing professionally and culturally were not segregated in the minds or practices of these fishers, therefore they felt it was an important cultural tradition for family members to assist in pulling in fishing nets or sorting catches as well as sharing the catch amongst the community.

I can't even clean a bit of seaweed out of (the) nets, I can't spot fish for them, they can't put any extra fish in my truck to transport them, I can't help at all - but that's my culture it's what I've always done.

PSGLMP Indigenous fisher

For fishers engaged in cultural fishing their complaints were related to bag limits, or marine park restrictions that limited their ability to share catches amongst family members and provide for the seafood needs of their communities.

..the older people especially the older women can't go to the places they used to go they can't get to the places where they can collect shellfish, the restrictions are ridiculous, they say you can only collect 100 periwinkles, what can you do with 100 periwinkles?

BMP Indigenous fisher

Closely related to the importance of fishing as a food source to Aboriginal communities were concerns over the decline in Aboriginal health that participants directly attributed to the restrictions of fishing brought in by fishing and marine park regulations.

The restrictions they are putting on fishing is really affecting aboriginal health – there never used to be such a thing as diabetes in the Aboriginal community, now even young people have diabetes.

BMP Indigenous fisher

6.3.4 Motivation to fish and impacts

The reasons why people fish is likely to influence the way they perceive the impacts on their fishing activity. Given the over-riding interest in exploring the drivers of marine park opposition further analysis was conducted on the motivations of the 42 fishers who indicated they opposed the marine parks (including three Indigenous fishers who indicated they were not sure but were highly critical of the parks).

6.3.4.1 Recreational fishers

All the 16 recreational fishers who were opposed to the park fished for a wide variety of reasons and demonstrated a range of 'non catch related' motivations to fish. This is consistent with the profile of a 'highly specialised fisher'. Table 6.11 includes the results of analysis of the relationships between motivation to fish and the social impacts of the park on these fishers. It indicates that many of their primary complaints related to their reasons for fishing.

One of the most frequently mentioned motivations to fish amongst the interviewed recreational fishers was 'challenge or adventure'. They enjoyed building up and testing their knowledge and skill in order to 'outwit' the fish, but they reported their options to diversify fishing activities had been restricted by the marine park. They were also coded as having felt 'deceived or betrayed' by the marine park process because they felt information they had provided to the planning process about their fishing spots had been used against them to close those locations to fishing. One of the characteristics of highly specialised fishers is their greater commitment to their sport. They are more likely to travel further and to remote locations in pursuit of trophy fish, a different challenge or a more isolated fishing experience. These remote locations may also be targeted in planning processes which seek to minimise impacts on fishers by placing no-take reserves in less utilised fishing destinations. Four of

the marine park opponents interviewed specifically discussed a favourite remote fishing location that had been closed through Sanctuary Zones.

6.3.4.2 Professional fishers

Many of the professional fishers interviewed saw fishing as a profession with strong links to their heritage. Six were third, fourth or fifth generation fishers with historical links to their local communities and fishing. This loss of heritage and personal history was a major concern for many of the professional fishers interviewed, as was the increased competition and conflict within the industry (Table 6.12). In addition there appeared to be a strong link between professional fishers who valued their role as service providers to the community, especially those fishers who sold directly to local customers, and feelings of depression and loss of social identity.

6.3.4.3 Indigenous fishers

The motivations to fish of the interviewed Indigenous fishers were consistent across both parks and focused on the provision of food to family and community and the practice of culture. The intrinsic and interconnected importance of access to seafood with diet, health, culture and social relationships within the Indigenous community was emphasised in the interviews and provides some insight into the way in which social impacts were felt by the research participants (Table 6.12).

Table 6.11: Matrix query results of recreational fishers opposed to the marine parks: Motivation to fish codes by social impact codes (including illustrative quotes).

Motivation to fish (M)	Opponents coded (M)	Social Impact code (SI)	Opponents coded (SI)	Opponents coded M and SI	Illustrative quote
Challenge or adventure: eg the thrill of the chase, a battle of wits	11 (69%)	Loss of options/ flexibility: ability to diversify according to the season, weather or the desire for a different experience	10 (63%)	8 (73% of M)	<i>I do find it frustrating at times when if you're restricted by weather or something else you run out of places to go.</i> PSGLMP recreational fisher
		Deceived or betrayed: information provided to the planning process used against them	10(63%)	9 (82% of M)	<i>when we filled in the forms all the favourite spots were the ones that they took and turned them into sanctuary zones</i> BMP recreational fisher
Competition or skill: eg chasing trophy fish, competing against other fishers, testing personal skill or equipment	7 (44%)	Inequity or persecution: feeling of being unfairly excluded, of not having access to a resource that others can access (eg illegally or other user groups)	11(69%)	5 (71% of M)	<i>..if you are going to lock one or two groups out lock everyone out, the only one that was left allowed in there was scuba divers.. That left a really sour taste in everybody's mouth.</i> PSGLMP recreational fisher
Escape and relaxation: eg getting away from it all, unwinding, solitary fishing	9 (56%) <i>rec fishing opponents</i>	Complexity: complicated rules and regulations, fear of being caught accidentally doing the wrong thing	11(69%)	7 (78% of M)	<i>..you only have to drift 100m the wrong way and a fisheries officer is going to whack you with a \$500 fine..well why would you want to have that risk?</i> PSGLMP recreational fisher
Food or income: Catching fish for consumption	10 (63%) <i>rec fishing</i>	'Wasted' opportunity or resource: frustration of not being able to access an available resource	6(38%)	5 (50% of M)	<i>they are magnificent fish to catch and we know they're there. It like someone giving you a Christmas present and saying you can't open it ...but we'll leave the tree up and leave the present there but don't touch it.</i> BMP recreational fisher
Natural environment: Being out on the water interacting with nature	7 (44%)	Little or no impact: ability to interact with nature generally not restricted	7 (44%)	4 (57%)	<i>I still love it, I just love the opportunity to get out there..it's just the fact that I'm there, I'm breathing in 100% fresh air and if I catch a fish, lovely.</i> BMP recreational fisher
Social/family: fishing with friends or family, sharing the catch with friends or family	6 (38%) <i>rec fishing opponents</i>	Loss of shared recreation with family or friends.	7 (44%)	4 (67% of M)	<i>I used to take my father there prawning.. I took all my kids there because it's a nice shallow safe spot, it's the safest spot on the south coast and they closed it to everyone</i> BMP recreational fisher

Table 6.12: Matrix query results of professional fishers opposed to the marine parks: Motivation to fish codes by social impact codes (including illustrative quotes).

Motivation to fish (M)	Opponents coded (M)	Social Impact code (SI)	Opponents coded (SI)	Opponents coded M and SI \	Illustrative quote
Heritage/ intergenerational connection	10 (75%)	Loss of tradition, way of life and a lifelong profession	11 (73%)	9 (90% of M)	<i>..and what do I do? What do people like myself do? You know I've been fishing since I was 12. I've never been unemployed. I've always worked..</i> PSGLMP professional fisher
Income	9 (60%)	Loss of income and Loss of options and flexibility, either through loss of endorsements or access to fishing grounds.	15 (100%)	9 (100% of M)	<i>I spend about 2-3 months a year at Eden now. It's expense...it's costing thousands of dollars for accommodation then you've got to take your deckie down so the cream goes off your income</i> BMP professional fisher
		'Wasted' opportunity or resource: frustration of not being able to access an available resource	8 (53%)	6 (67% of M)	<i>I can go up there and catch those school prawns today but I'm not allowed to, now they're all going to die in another month...why should I have to drive 200 mile down there (Lakes Entrance) and 200 mile back when I can drive 20 mile up there (Tuross Lakes) and catch the same thing?</i> BMP professional fisher
Social or family: camaraderie between fishers or operation of a flexible, family friendly business	6 (40%)	Conflict and competition; Increased competition for space, overcrowding, or conflict with other user groups/ community	13(87%)	6 (100% of M)	<i>..there's been 2-3-400% increase in some fisheries in effort. With competition comes all the things like jealousy and hatred and ambition.</i> PSGLMP professional fisher
Service to community: provision of fresh, local seafood	5 (33%)	Depression: loss of sense of self, standing in community or social identity	9(60%)	5 (100% of M)	<i>since that has happened we are probably not as social as we used to be ...you just felt like you had nothing to talk about.. people are saying 'well how has the Marine Park affected you?'. it is such a bloody unfair question, it's like saying 'oh I believe your father died last week how did the funeral affect you'..it cuts you to pieces.</i> BMP professional fisher

Table 6.13: Matrix query results of Indigenous fishers opposed to and unsure about the marine parks: Motivation to fish codes by social impact codes (including illustrative quotes).

Motivation to fish (M)	Opponents coded (M)	Social Impact code (SI)	Opponents coded (SI)	Opponents coded M and SI	Illustrative quote
Practice of culture: local Indigenous community 'saltwater' people, fishing an integral part of cultural practices and dreaming stories	11 (100%)	Loss of access to culturally important sites or practices	11 (100%)	11 (100% of M)	<i>the fishing regime that's been brought in..has locked us out of our resource, and the marine parks has put the final nail in the coffin. I know its strong words but I think in many ways you've got to look at it as genocide, its cutting away of a real cultural practice and need.</i> BMP cultural fisher
Provision of food: seafood traditionally a major component of Indigenous diet	9 (82%)	Loss of important food source and associated health concerns	10 (91%)	9 (100% of M)	<i>so they suffer, their family suffers, their health suffers, because they're not getting their dietary needs, because everybody lived off fish it was the main dietary thing.</i> PSGLMP cultural fisher
Social/Family: ability to share seafood with family and community and teach traditional fishing practices	7 (64%)	Restriction or loss of ability to provide dietary needs to family and community, ability to teach children cultural practices	10 (91%)	7 (100% of M)	<i>That's all stopped now..we're not allowed to show our kids how to crab. The Marine Parks ..have virtually shut us out of our traditional hunting grounds, if we are found crabbing or fishing in those areas we are given a big fine.</i> PSGLMP cultural fisher

The Indigenous respondents frequently referred to a previous personal or cultural history of abuse and discrimination and many indicated they saw the restrictions of the marine park as a continuation of this prejudice. There were differences of opinion amongst the participants about how to best meet their cultural fishing and seafood needs while also ensuring conservation of marine biodiversity and fisheries resources in an increasingly competitive environment. For example, some advocated that all restrictions on cultural fishing should be lifted, and greater restrictions placed on other activities, while others argued that cultural fishing may also need to be restricted to allow fish stocks to recover. All agreed, however, that ensuring continued access to fisheries resources is fundamentally important to their cultural identity and physical health.

6.3.5 *Environmental knowledge and impacts*

Analysis of the interviews indicated a number of consistent themes in the way in which those opposed to the marine parks represented themselves (their social identity) through the interview process (Table 6.14). All of the 42 opponents (including 3 not sure) represented themselves as knowledge holders based on personal experience and/or knowledge handed down from previous generations. They consistently contrasted their 'practical' knowledge with the 'academic' knowledge of the scientists and bureaucrats involved in the planning process. It was frequently suggested that this knowledge was not respected or acknowledged during the planning process despite the many opportunities for involvement. Members of all three groups also represented themselves as environmentally aware, local custodians who had minimal impacts on the environment and therefore did not deserve the 'punishment' of the marine park. Finally all groups felt they were fighting an oppressor, and a number (19) of the interview participants were actively involved in defending their lifestyles or way of life against 'the enemy' who they variously described as the Government, conservation groups, other user groups and, for some in the BMP, retirees from urban areas. This role was taken particularly seriously amongst a small number of the recreational fishing participants who were extremely politically aware and active. They were often involved in direct lobbying of politicians and bureaucrats as well as being leaders or active members of campaigns aimed at stimulating and maintaining community anger over the parks.

Further analysis was conducted into what constituted the participants' environmental knowledge and how it related to their opposition to the marine parks. A series of questions posed in the interviews were related to how the participants interpreted the need for, or value of, the marine park in their local area. The responses were compared with the knowledge claims of participants and their attitudes towards the parks.

Table 6.14: Matrix query results of all fishers opposed to the marine parks: Social identity by social impact codes (including illustrative quotes).

Social identity (ID)	Opponents coded (ID)	Social Impact code (SI)	Opponents coded (SI)	Opponents coded ID and SI	Illustrative quote
Fishers as knowledge holders: superior local knowledge about fish, fish movements fishing practices etc	42 (100%)	Ignored or disempowered: feeling of knowledge not respected or taken into account	28 (67%)	32 (76% of ID)	<i>We went to a meeting..and between the fishers there they had 200 years fishing experience and here's this little twerp telling them where the bream spawn</i> BMP professional fisher
Fishers as local custodians; environmentally friendly, sustainable fishing practices	32 (76%)	Persecution: feeling of being unfairly punished or targeted	34 (81%)	28 (88% of ID)	<i>We are very much environmentally friendly, we want to look after the area, we believed that if we did the right thing from day one that government would look after us. They didn't, they turned their backs.</i> BMP professional fisher
Fishers as defenders: the underdog/ the oppressed fighting an oppressor	19 (45%)	Conflict or division: polarisation of views into 'Green' versus 'anti –Green' camps, or 'locals' versus 'outsiders'	35 (83%)	18 (95% of ID)	<i>I hate injustices, I hate the fact that people can manipulate people that are uneducated or uninformed. So someone has to stand up when they know these things are going on. It needs to be exposed. People live on the coast because they love the waterways and they are taking away one of the major reasons people love to live in Australia.</i> PSGLMP recreational fisher

Prior concerns about the health of the local marine environment are unlikely to have been a major factor in support or opposition for the marine parks (Figure 6.24). Some recreational fishers, particularly in the BMP, and professional fishers in both parks, completely rejected the idea that their area was suffering from significant environmental degradation and therefore felt the park was an unnecessary imposition. However 43% of the marine park opponents interviewed indicated they were concerned about the health of their local marine environment yet did not support the marine park. These participants listed a range of concerns including pollution, urban development, habitat destruction and the fishing practices of other user groups as major concerns for their area and often

contrasted these threats with what they believed to be the relatively benign impacts of their chosen fishing method.

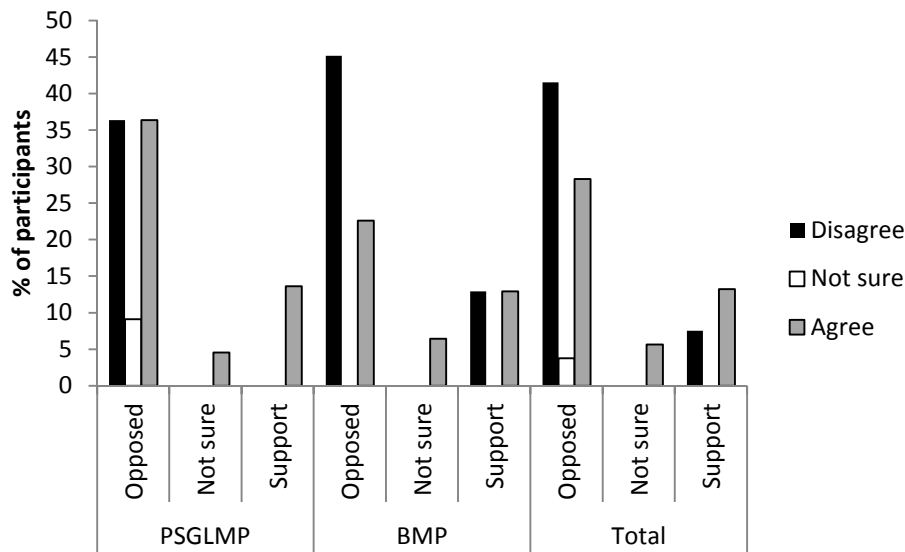


Figure 6.24: Frequency distribution of responses by fishers who either supported, were not sure, or opposed the marine parks to the statement: 'Before the marine park was declared I worried about the health and/or management of our local marine waters.'

When asked if they felt that the health or management of their waters had improved since the establishment of the parks there was a clear trend amongst opponents to reject the value and effectiveness of the park (Figure 6.25). There was a similar rejection of the notion that the marine park had improved catches. In total, across all sectors and both parks, 74% of marine park opponents did not believe the marine park had improved the health or management of their local waters and 81% did not believe there had been improvements in fishing.

It's worth noting that 'in principle' support for the marine park was not uncommon amongst opponents from all stakeholder groups but was particularly strong amongst Indigenous fishers. Most (65%) of the Indigenous fishers opposed to the marine park (or unsure) recognised the need for a marine park, and a small number (27%) even felt the marine parks were effective in managing many of the key threats to the marine environment. They often held considerable concerns over ecosystem health based on a lifetime's association with the water and with fishing. In addition they reported witnessing extremely worrying environmental change over their lifetimes and linked this with strong support for the concept of the marine parks. However they also felt that the current management arrangements did not adequately take into account cultural knowledge and use.

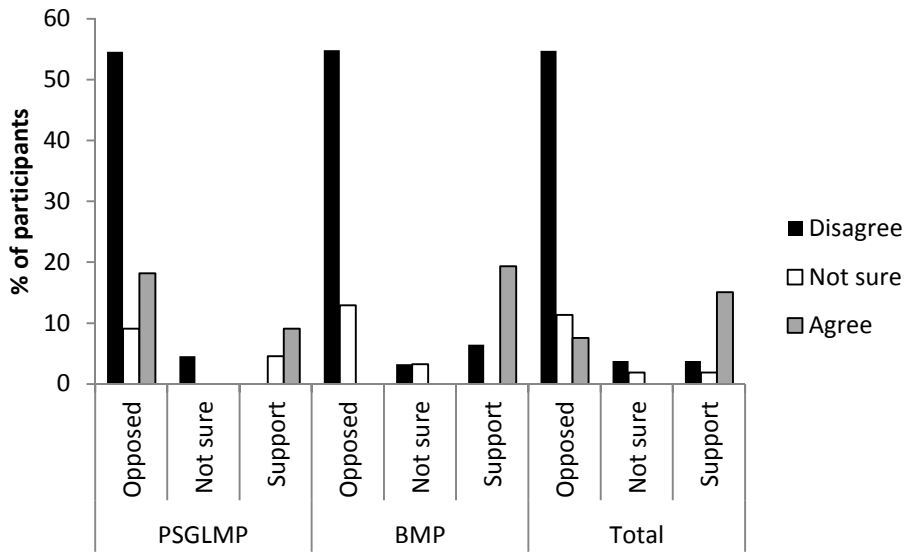


Figure 6.25: Frequency distribution of responses by fishers who either supported, were not sure, or opposed the marine parks to the statement: 'I think the health and/or management of our local marine waters has improved since the marine park.'

Table 6.15 examines the environmental knowledge held by the marine park opponents and how this relates to their perceptions about the effectiveness or necessity of their local marine park. As illustrated by the example quotes, the environmental knowledge of marine park opponents almost exclusively related to recreationally or professionally harvestable species, particularly fish but also shellfish. From a biological perspective they talked about fish biology, fish movements, spawning habits or fish habitat changes over time. They also discussed the relative merits and disadvantages of different fishing methods, and offered suggestions for improved fisheries management. These suggestions included decreased bag limits, increased size limits, bans on some fishing methods, seasonal closures, and gear restrictions. For many the knowledge they held about fish and fish movement resulted in their rejection of the marine park as an effective tool in managing fish stocks. A common argument centred on the mobility of fish and the ineffectiveness of no-take zones in managing pelagic or migratory fish.

Table 6.15: Matrix query results of all fishers opposed to the marine parks: Social identity by knowledge claims codes (including illustrative quotes).

Social identity (ID)	Opponents coded (ID)	Knowledge claims code (K)	Opponents coded (K)	Opponents coded ID and K	Illustrative quote
Fishers as knowledge holders: superior local knowledge about fish, fish movements, fishing practices etc	42 (100%)	Key threats not managed, key areas not protected, marine park ineffective	36 (95%)	36 (86% of ID)	<i>The marine park is a good idea in principle but it's used as a tool to target fishermen. It's an anti-fishing device it's not a fish conservation tool. It's not being used to manage fish stocks properly its being used to manage fishermen.</i> PSGLMP recreational fisher
		Science questioned, parks not supported by science, value not proven.	24 (57%)	24 (57% of ID)	<i>Any scientist worth their salt would have said 'I've got a breeding biomass here, I don't need to protect intermediate reef or a muddy bay, I need them to be able to get to a spot to throw its eggs.'</i> PSGLMP professional fisher
Fishers as local custodians; environmentally friendly, sustainable fishing practices	32 (76%)	Unnecessary – we looked after it, area not threatened	31(74%)	25 (78% of ID)	<i>We always thought about the health of the Marine Park even before the Marine Park was here we looked after it, if there was any pollution or whatever it always concerned us in a big way.. Our culture was that we must look after the land.</i> BMP Indigenous professional fisher
		Outsider interference – local knowledge superior to that of 'outsiders'	22 (52%)	21 (66% of ID)	<i>I was never worried about the welfare of it because people looked after it, the people that were concerned and worried about the welfare of this didn't live here, they lived up in Sydney.</i> BMP recreational fisher

6.4 Discussion

Analysis of the interview data detailed above indicates a large degree of consistency in the impacts described among the different user groups and between the two parks. Recreational fishers were impacted through greater inconvenience and loss of enjoyment. Professional fishers reported quite profound impacts on their livelihoods, lifestyle and wellbeing. Indigenous fishers felt the parks had severely impacted on their ability to practice their culture and saw the marine parks as a continuation of prejudice and discrimination experienced by Aboriginal people over two centuries. One of the more prominent differences in the responses of the interview participants across the two parks occurred in response to questions of the necessity of the parks, with BMP fishers across all three groups more likely to believe that there were no significant threats to their area and therefore the park was unnecessary. The majority of impacts across all three stakeholder groups occurred in the categories relating to personal and emotional wellbeing. The way in which the participants responded emotionally to the parks appears to have been influenced by two major factors – their motivation to fish and their environmental knowledge.

The assessment of the social impacts of MPAs is an emerging field requiring greater research effort. This research provides insight into the potential impacts of MPAs which will be valuable in conducting social impact assessment (SIA) in the future and provides some baseline data from which to build a greater understanding of the way different communities respond and react to these impacts. SIA is increasingly being used as part of marine conservation management, particularly fisheries management, however a paucity of data and limited long term monitoring strategies mean that its use in this field is still in its infancy (Barclay 2012). Social assessment for professional fisheries is better developed than for MPAs. A number of Australian frameworks have been prepared, or are in development (Schirmer & Casey 2005; Brooks, Schirmer & Loxton 2011), and several studies have been conducted on the social aspects of aquaculture and wild harvest fisheries over the last decade (Brooks 2010; Brooks et al. 2010; Barclay 2012).

The research contained within this thesis would be applicable to emerging methods and theory around best practice social assessment in fisheries management, including interactive governance theory (Jentoft 2007; Jentoft & Chuenpagdee 2009; Jentoft et al. 2012). For example, an assessment of stakeholder responses to MPAs in Spain using interactive governance theory identified a range of images that stakeholders held which were consistent with many of the themes that emerged from this research, confirming their importance in influencing stakeholder responses to MPAs. These include images about the health of the ecosystem to be managed (environmental knowledge), and ideas about their relevance, effectiveness and equity (Jentoft et al. 2012). The application of interactive governance theory in social assessment for MPAs is an area therefore worthy of further investigation.

6.5 Conclusion

While significant social impacts were detected in both the PSGLMP and BMP, particularly amongst professional fishers and Indigenous fishers, the nature of these impacts was consistent across both parks. This indicates that it is unlikely that one community felt a significantly greater level of impact than the other. It suggests that, while more work is required on how social impacts can be minimised, this in itself will not fully address the concerns of MPA opponents. The strongest research finding to emerge from the interviews was the relationship between opposition and environmental knowledge, with all of the opponents interviewed representing themselves as knowledge holders. It was on this basis of this 'fish knowledge' – rather than wholly concerns over impacts or process – that these opponents had rejected the marine parks, or in most case the Sanctuary Zones. This was largely due to a belief that the parks would were an unnecessary imposition on local communities or would be ineffective at achieving improved fishing outcomes. In addition the ways in which the impacts of the parks were felt on fishers was influenced by their motivation to fish, or the reasons they chose to fish.

7. General Discussion and Conclusions

7.1 Introduction

As discussed in Chapter Three, when taking into account the similarities in the procedural and governance approaches to each of the two marine parks, differing levels of community acceptance of the marine parks may be related to a variety or combination of factors, including:

- Differing demographic profiles, education levels, economic reliance on fishing and fishing related industries in each community (Chapter Four).
- Media bias or inconsistencies in media reporting between communities (Chapter Five).
- Media savvy and resourceful individuals or groups able to influence community sentiment and lead 'campaign' style resistance to their local marine park (Chapter Five).
- Differing levels of social and/or economic impacts of the marine parks in each community (Chapter Six).

The results of analysis of each of these factors is summarised and discussed in this chapter. This research has identified a number of key areas which have stimulated, provoked or exacerbated community conflict and opposition to the marine parks in their local communities. Broadly they fall into three main categories:

1. Poor communication about the role and function of MPAs and participation exercises which do not adequately consider diverse or alternative sources of knowledge
2. Planning methods which are ineffective at assessing and mitigating social impacts
3. Public policy that isolates biodiversity conservation objectives from other conservation goals and methods.

This chapter discusses each of these categories in detail based on research findings.

7.2 BMP - The perfect storm

This thesis emerged from anecdotal reports that essentially similar marine park proposals elicited quite different community responses in the PSGLMP and BMP. This contention was supported by evidence gathered as part of the development of this thesis and can be summarised as follows:

- Overall greater involvement from the community in the BMP planning process including significantly greater number of submissions, particularly from recreational fishers in the BMP.
- Significantly greater representation of conservation interests in the PSGLMP submissions.
- A greater polarisation of responses to the BMP compared with the PSGLMP in the public submissions, with the majority of form letters received over the BMP calling for a complete removal of Sanctuary Zones.
- Significantly greater numbers of letters to the editor on the marine park issues in the Narooma News (in the BMP) than any other paper covering the issue in either marine park.

- An ongoing lobbying campaign by recreational fishers in the BMP to have the zoning plan over-turned, resulting in the announcement that BMP will be one of the first parks to be reviewed under new planning arrangement established by the NSW government.

This evidence points to the fact BMP was significantly more controversial than the PSGLMP from the outset, despite almost identical planning, consultation and implementation processes. Therefore, while criticisms of the process dominated complaints in the news articles and letter to the editors of local papers in both parks, the process itself is unlikely to have been the only determinant of opposition for the BMP community. The question therefore remains: why did one community respond quite differently to essentially the same process? Table 7.1 summarises the key findings of this research in relation to the major influences on community acceptance of the PSGLMP and BMP.

Table 7.1. Summary of research findings about the key factors influencing community acceptance of the PSGLMP and BMP.

Park	Factors influencing community acceptance			
	History and demographics	Media coverage	Campaign leaders	Social impacts
PSGLMP	Diverse employment base, history of environmental activism against a common enemy (industry)	Media sources drawn from diverse backgrounds and viewpoints, coverage not overtly politicised.	Range of disparate campaigners, no obvious campaign leader in any stakeholder group. One prominent fishing spokesperson maintained a neutral and occasionally supportive attitude to the park	Broad range of impacts felt to varying degrees by park users, largely concentrated on professional and Indigenous fishers. Strongly linked with environmental knowledge and motivation to fish.
BMP	Concentrated employment base in tourism industry with recent history of economic change away from another concentrated employment base in primary industries, history of environmental conflict between users (eg forestry vs conservation)	Media coverage concentrated on small number of sources, highly politicised with support and opposition aligned with political parties.	Small number of recognisable campaign leaders or 'champions', highly visible in the media and active in the communities. Motivated partly by strong ideological convictions.	

Chapter Four indicated that the context into which the marine parks were introduced is likely to have played a significant role in influencing community responses to the park. Long-standing environmental conflict, disputes between users and a history of activism suggests that the BMP community was always going to be difficult to convince of the importance of additional regulations over their use of natural resources. This, coupled with a high level of exposure to economic shifts and external market

drivers, meant that the BMP area had a greater sense of vulnerability to change than the more economically stable PSGLMP area.

Chapter Five illustrated the way in which these vulnerabilities were exploited by politicians and ideologically driven spokespeople to polarise debate in the BMP into a political contest dominated by fear and misinformation. In particular the debate was largely played out over a policy area not included in MPA objectives – that is fisheries management. While the analysis did not suggest media bias was a factor in the differential community responses to the parks, the highly politicised nature of the coverage in the BMP may have been influential.

Finally, Chapter Six demonstrated that fishers in both marine parks felt that the marine park had had significant social impacts on them personally, or on their family, friends or their wider community. While these impacts are of concern they do not, in themselves, explain the differential community responses to the PSGLMP and BMP. Of significance was the concentration of impacts and opposition amongst the highly specialised recreational fishers, who are also the group most connected to other fishers and are therefore most likely to be active in campaigns against MPAs. While further research is required to accurately quantify the numbers of people affected in each area, the nature of these impacts was largely consistent across both parks. This suggests that while the impacts of the parks were consistent across both, the resilience of each community to these impacts was different.

Table 7.1 indicates a consistent theme in the data analysed, which included government documents, media articles and letters, historical records and present day statistics as well as interviews. A recurring theme emerged of diversity versus concentration. The PSGLMP had a diverse range of spokespeople represented in the media, a diverse economic and employment base and a diverse response to the park. In the BMP opinion was largely concentrated on opposition, with a concentration of spokespeople prominent in the media and a highly concentrated economic and employment base both currently and historically. These factors are likely to have a significant impact on the resilience of each community to the impacts outlined in Chapter Six.

This research identified a number of key findings that would be of considerable value in a policy and planning setting in relation to MPAs, particularly in a developed nation. Principally these relate to the impact of environmental knowledge, motivation to fish, ideology and history on community acceptance of MPAs. The application potential of each of these findings is conceptualised in Figure 7.1, which indicates three main areas to which the findings are relevant – communication and community engagement, social assessment and public policy.

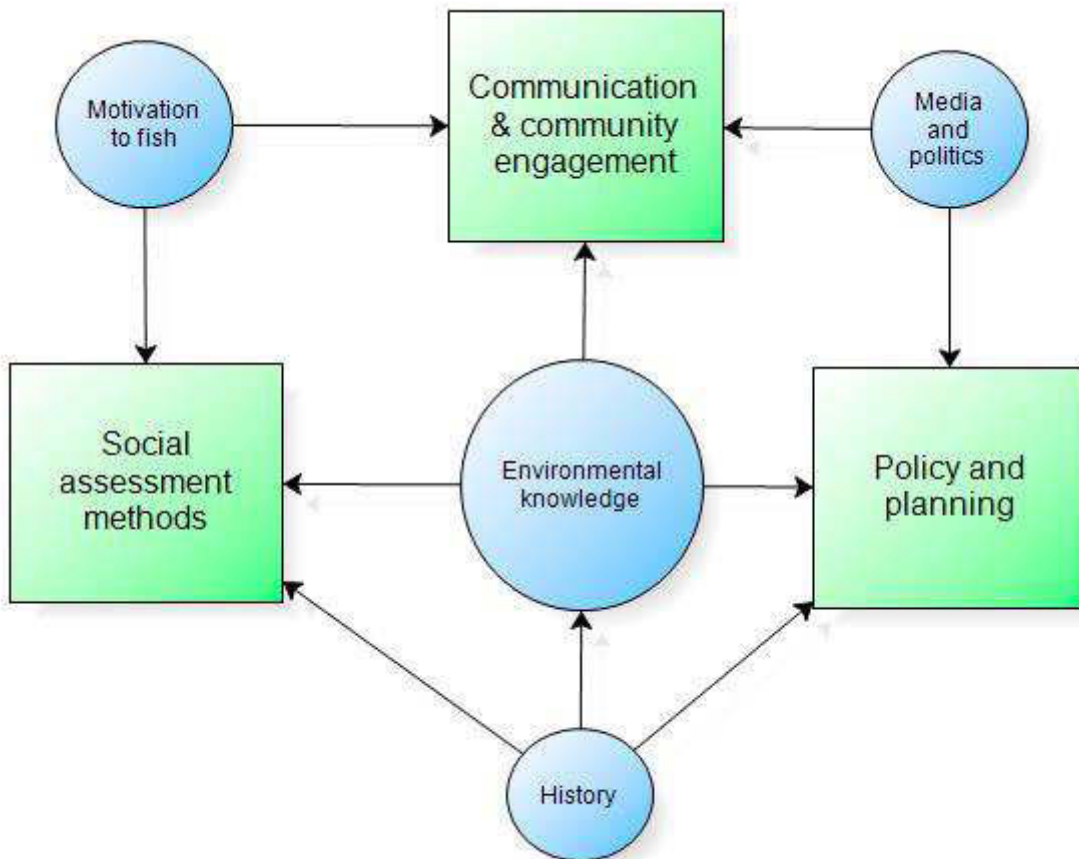


Figure 7.1. Conceptual model illustrating the potential practical applications of the research findings.

7.3 Communication & community engagement

The research findings outlined in Chapter Five point to the complexity of modern environmental campaigns, particularly in translating global conservation messages to a local audience. In the two study areas local media outlets tended to use a “benefit” frame to report the messages of conservation groups and government politicians, emphasising fisheries management and tourism improvements to local communities over the wider goals of biodiversity protection. This may have been a deliberate strategy by conservation groups to make their message relevant to local audiences, or it may have been an editorial decision to concentrate on those aspects of their message most relevant to their readership. Regardless it effectively shifted the focus of the debate onto an area that is not a primary objective of MPAs, and is one of the most contested areas of MPA science. This may have fed perceptions of mistrust in the messages of government and conservation groups in relation to the marine parks and confusion as to their role and function in wider marine conservation management.

Highly simplified messages about the value of Sanctuary Zones have been used to great effect in the global debate over MPAs in order to build popular support for protection of the oceans. In Australia

and around the world there have been intensive efforts by Governments and conservation NGOs to pursue the MPA targets set down under the Convention for Biological Diversity (CBD) within the specified time frames. Underscoring these efforts is a paradigm which appears to elevate IUCN Categories Ia/b (no take zones) as universally the 'best' means of achieving protection of biological diversity and therefore new sub-targets have emerged that are concentrated on no-take zones (eg see Bohnsack et al. 2000; International Union for Conservation of Nature & World Commission on Protected Areas 2003; Winn 2008; International Union for Conservation of Nature 2012). These sub-targets are often reported in conjunction with the official CBD targets leading to confusion between official and non-official targets and which relate to 'no-take' protection and which include other IUCN categories. In addition, the success of MPA planning exercises is often measured against these target amounts, rather than their capacity to meet their ecological objectives (De Santo 2013; Hunt 2013; Pressey 2013). There is a danger that this approach means that no-take zones begin to be seen not just as the *best* but the *only* means of protecting marine biodiversity. This is evidenced in some of the discourse around MPAs which classifies the amount of the world's ocean as 'protected' or 'not protected' – the implication being that without an MPA, and particularly without no-take areas, there is no protection of the ocean (United Nations Environment Programme - World Conservation Monitoring Centre 2010). In many places in the world this is very likely to be true, however, this narrow measure of protection runs the risk of undermining the potential of other approaches to contribute to protection of our oceans and, as shown by this research, alienates marine park users and other marine management agencies who feel that they contribute to the sustainability of the world's oceans through a range of other strategies.

Public consultation in the PSGLMP and BMP, while extensive, appeared to largely follow a 'deficit model' of public engagement, where it was assumed that people have limited knowledge and require active education in order to build support for the MPA (Gill, Waitt & Head 2009). According to Lakoff (2010), cognitive science has shown us the inaccuracy of these 'old' assumptions of many scientists, policy makers and environmentalists that informing people of the facts will be enough to convince them of appropriate responses. In fact, people are primarily motivated by their own system of frames mostly driven by unconscious and emotional 'logic' and that the '*facts must make sense in terms of their system of frames, or they will be ignored*' (Lakoff 2010). A key finding of this research was the link between MPA opposition and the environmental knowledge of its users. In many cases what these fishers know about fish and fish movements has led them to reject Sanctuary Zones as an effective tool for *fisheries management*. Simplified messages that link MPA protection directly with fishing improvements are therefore flawed because they do not make sense to the fishers they target, and they therefore see these messages as deceitful and patronising. Trying to 'educate' them that closures do in fact improve fishing is offensive to these fishers because it dismisses what they 'know' about fish.

Linking MPAs with fishing improvements is flawed for a second reason. This approach assumes that fisher support is influenced primarily by self-interest, and that convincing fishers of improved catches is the best and only means of securing their support. Yet Chapter Six demonstrated that fishers,

particularly highly specialised recreational fishers, are motivated to fish for a variety of reasons of which catching a fish is just one. The 'promise' of increased fish catches may therefore do little to compensate fishers for a loss of diversity in their fishing experiences or decrease in amenity through overcrowding of fishing locations.

This research demonstrates that a fundamental flaw in a communication strategy that aims to win popular, and therefore political, support is that it tends to marginalise those users on whom the success of the parks rely – its main user groups. Fishers have responded by fighting back. The growth in power and influence of conservation NGOs and the Greens political party has been matched by a corresponding growth of environmental "resistance" groups who borrowed the techniques perfected by the larger conservation NGOs to fight what they perceived as an "extreme" conservation agenda (eg *The outdoor loving people of Australia* 2010; *Keep Australia Fishing* 2012). In the PSGLMP and BMP wider relevance was given to local arguments by linking the local battle to a state- and/or nation-wide agenda by the government to attract Green votes and strip fishers of their "rights". This concept surrounding the rights of fishers, coupled with an emphasis on the impacts of the parks on fishers, points to a positioning of fishing groups as representatives of the average fisher, the "underdogs" or "victims" in the marine park debate, fighting against the establishment to protect their way of life. This polarisation of views has led to the politicisation of the debate along political party lines.

Throughout the coverage of the PSGLMP and BMP the marine parks were presented in the media as largely a political decision being 'imposed' on local communities immediately prior to a state election. In reality MPAs such as the PSGLMP and BMP are in fact part of a policy commitment made by governments of all persuasions around the world in response to international commitments and a global environmental crisis in the world's oceans. Yet, as demonstrated in Chapter Five, community acceptance of MPAs has been framed in a deeply political way, with the conservation movement aligned with the progressive end of the political spectrum and resistance to parks with more conservative political persuasions (Lakoff 2010). The danger of the environment being seen as the exclusive domain of the 'left' of politics, however, is that it potentially alienates a large section of the community who may have concerns and ideas about environmental management but do not necessarily align themselves ideologically with the left. Equally, constituents who have concerns about the effectiveness of the proposed conservation strategies or the process of their implementation may also feel disenfranchised if they do not wish to align themselves with the 'right' of the political spectrum or be labelled as 'anti-conservation'. Therefore media coverage that reports 'both' sides of the story in this highly simplified manner may in fact undermine participatory democracy by handing power to a small number of spokespeople with undeclared motives for their involvement. In reality a large section of the community have mixed value systems, being 'conservative' on some issues and 'progressive' on others (Lakoff 2010). This creates fertile ground for political enemies to engage in ideological warfare in an attempt to win over the 'middle', as seen in the BMP, but it also provides opportunity for pragmatism and compromise by seeking out and capitalising on shared values and belief systems.

It is unlikely that ideology and politics can ever be completely removed from MPA planning exercises. Politicians will always seek to capitalise on community controversy and the media will always look to report on conflict and division. Nevertheless, seeking the middle ground is in the best interests of local communities and the marine environment the parks seek to manage (Jones 2001). The process of finding this middle ground begins with communication and community engagement.

It may be tempting to conclude from this research that further education of fishers is required in order to inform them of the somewhat intangible benefit of “biodiversity protection” and the role of MPAs in providing this. Yet this would rely on imposing a predefined concept of what biodiversity is and how it would best be protected - a definition that is likely to again be contested by people with alternative views of nature (Gill, Waitt & Head 2009). As discussed in Chapter Two, the concept of ‘biodiversity’ is a human construct that holds different meanings for different people and the role of humans in biodiversity is one that is highly contested (Robbins 2000; Gill 2003; Robbins 2006; West & Brockington 2006; Gill, Waitt & Head 2009). When people are operating from a different model of knowledge being given more information about the science behind MPAs may not reduce their opposition to the MPA at all. If science alone is used to define the problem and inform the solutions, this can marginalise the concerns and ideas of alternative forms of knowledge, sometimes exacerbating social opposition rather than ameliorating it. (Gill, Waitt & Head 2009; Coffey & O’Toole 2012). While it is therefore important to communicate clearly the true value and function of Sanctuary Zones, and other marine park zones, efforts to engage communities in MPA planning must go beyond education to encourage two-way dialogue and exchange of ideas. This does not mean that science should be marginalised in these discussions. One of the most critical purposes that Sanctuary Zones serve is providing scientific reference areas which allow for improved understanding of natural ecosystem functions and how human use influences, impacts or disrupts these processes. Governments have the responsibility to incorporate consideration of the importance of gaining new knowledge such as this with the existing knowledge and interests of stakeholders (including humans and non-humans that cannot participate in planning processes, such as future generations), given the oceans are a common property resource. The challenge is ensuring this diversity of interests is considered in a balanced and respectful way.

The literature review in Chapter Two highlighted the need for a major rethink of the role of public participation in MPA planning processes, including the development of a better understanding of what constitutes effective community engagement. This involves a shift from it being the primary means of social assessment to consideration of it being an important support tool in Social Impact Assessment (SIA). This may require letting go of large-scale public communication campaigns that aim to influence political action in favour of smaller-scale community engagement exercises that aim to build a community response that recognises diverse objectives and ideas about the needs for protection and how this should be achieved. A collaborative participatory approach gives stakeholders the ability to directly engage policy makers, scientists and decision makers in an ‘multi-dimensional’ dialogue (Sayce et al. 2013). This involves extensive and comprehensive engagement of local communities, stakeholders and interested parties, and is promoted as one of the key tools for managing social

impacts. Involving local communities early in the planning process can assist in identifying possible positive and negative social impacts and potential options for managing them. (International Union for Conservation of Nature 2000; Bright et al. 2003; Interorganisational Committee on Guidelines and Principles 2003; Vanclay 2003b; Bureau of Rural Sciences 2005; Andre et al. 2006; Sayce et al. 2013) Crucial to genuine collaborative participation is allowing all aspects of policy and planning to be open for discussion and debate, devolving some level of decision making to stakeholders to ensure ownership of management plans (Larson & Dahal 2012).

Consultation and engagement exercises which recognise diverse 'knowledges' and 'ways of knowing' may assist in breaking down the polarised positions so common in these debates and assist communities to build a shared vision for the management of their marine environment (Robbins 2006; Gill, Waitt & Head 2009; Coffey & O'Toole 2012). Therefore, the key challenge for MPA practitioners is how MPA planning and management can embrace and utilise fisher knowledge and contribute to a sense of ownership amongst users. Scholars are increasingly recognising the value of 'local ecological knowledge' in marine spatial planning exercises, and experiments involving integration of this knowledge with more traditional science-based techniques have shown some promise (Ban, Picard & Vincent 2009; Bundy & Davis 2013; Perez de Oliveira 2013). This is particularly important for Indigenous stakeholders who have enormous traditional ecological knowledge and expertise that can enrich planning processes (Sloan 2002; Ban, Picard & Vincent 2009). Active engagement in marine park planning and operation may also provide social and economic benefits to Indigenous communities (Hunt, Altman & May 2009; Hunt 2010). Development of strategies that utilise the superior fishing knowledge of highly specialised fishers, such as through catch and release monitoring programmes, may also be useful in engaging these fishers (Jackson & Moran 2012; Norriss, Moran & Jackson 2012). This may be especially useful in assisting fishers to understand the benefits of effective MPA protection given these benefits may take some time to become apparent to the public.

Finally, MPA planning processes can circumvent polarised reporting of stakeholder issues by seeking out and promoting more moderate voices, and supporting them against the inevitable backlash they will receive from the more ideologically driven members of the community. The media exposure of one such voice in the PSGLMP is a telling example. While not uncritical of the PSGLMP this fisher's involvement in the media and in the planning process appears to have been relatively neutral and constructive – he was willing to give the idea 'a go' and judge it on its merits rather than approaching it from an ideological position. Planning processes may deflect some of the hostilities evidenced in the BMP by ensuring moderate voices such as these have the opportunity to be heard and by encouraging (and displaying) respect for diverse viewpoints in public participation exercises.

7.4 Social assessment and social impact mitigation

This research found that marine park opponents believed the marine park had impacted on their lives to varying degrees. Recreational fishers were impacted through greater inconvenience and loss of enjoyment. Professional fishers reported quite profound impacts on their livelihoods, lifestyle and wellbeing. Aboriginal fishers felt the parks had severely impacted on their ability to practice their

culture and saw the marine parks as a continuation of prejudice and discrimination experienced by Aboriginal people over two centuries.

Traditionally MPA planning exercises have sought to minimise social impacts such as these through spatial planning exercises concentrated on the prevention of harm. This has largely been attempted through the use of spatial management techniques to avoid, minimise or provide compensation for the loss of highly valued areas (eg see Fox et al. 2013). This technique has not always been successful, however, in adequately assessing or predicting the nature and extent of impacts within a given community, as demonstrated in Chapter Two. It found that planning processes have, in the past, been highly focused on economic impact assessment and public participation processes as surrogates for rigorous social impact assessment. This was certainly true for the PSGLMP and BMP where socio-economic impact reports were prepared prior to the development of draft zoning plans and focused almost exclusively on a cost-benefit analysis of the parks.

The use of zoning systems to mitigate or minimise impacts carries with it an inherent danger that these efforts may translate into avoiding controversial areas, which may also be important areas of biodiversity or be in greatest need of protection. This is perhaps best illustrated by a recent trend towards declaration of large MPAs in low use or low value areas, where conservation benefits are questionable (De Santo 2013; Hunt 2013; Pressey 2013). Understanding the reasons people fish may provide insight into how social impacts could be mitigated or compensated in a more meaningful, respectful and considered way.

Highly specialised fishers are motivated by the physical and mental act of catching the fish and not just the end product of the fish. Planning exercises that recognise and include consideration and awareness of the different levels of specialisation within the recreational fishing community are likely to have more success in ensuring zoning plans provide for a diversity of fishing experiences and opportunities. For example, planning processes that target more remote fishing locations for no-take zones may minimise impacts on the majority of less specialised recreational fishers but concentrate impacts on the highly specialised fishers. In addition, encouraging fishers to nominate their favourite fishing sites in planning processes may facilitate or feed feelings of betrayal amongst highly specialised fishers if their sites are closed to fishing based partly on their low levels of use as a fishing location. Given highly specialised fishers are more likely to have a higher level of social commitment to fishing, through friendships, clubs and involvement in online forums and internet chat rooms (Salz, Loomis & Finn 2001; Salz & Loomis 2005) this perception can be very quickly and effectively disseminated throughout the fishing community and become the dominant paradigm, undermining trust in future planning processes. Highly specialised fishers are considered more knowledgeable about the marine environment, fish movements and fishing practices and are likely to be more environmentally aware than less specialised fishers (Salz, Loomis & Finn 2001; Salz & Loomis 2005; Schroeder et al. 2006; Ditton & Oh 2008). Therefore an alternative strategy to asking them to nominate their fishing spots may be to engage these fishers in discussions about areas requiring better management.

The development of strategies to compensate for the loss of some fishing enjoyment, such as through the provision of artificial reefs to allow for a continued diversity of experience (eg see Beeton et al. 2012, p. 48), may also be useful in engaging highly specialised fishers and harnessing their potential as opinion makers within the recreational fishing community. Further research is required, however, into the different needs and aspirations of fishers along the full spectrum of specialisation.

Compensation packages that rely on financial incentives for professional fishers to leave the industry neglect the importance of lifestyle, heritage and social identity in the lives of these fishers. This may undermine the success of these strategies in achieving their objectives (Minnegal & Dwyer 2008; Brooks 2010). For example, licence buyback packages may prove highly successful in removing latent effort, or fishers close to retirement age, but less successful in removing active effort from a fishery. In many cases fishers who have participated in the buy-back programme re-enter the industry at a later date (Holland, Gudmundsson & Gates 1999). While income is obviously an important driver, the participants involved in this research were proud of their profession and their role as service providers in their community. The strong familial and heritage connection many of the interview participants felt to fishing meant that they were reluctant to leave the industry. Therefore economic incentives to leave were unlikely to have been considered significant compensation for the loss of social identity and sense of self that may have accompanied the sale. In addition structural adjustment packages like those offered in the PSGLMP and BMP tend to focus on fishers exiting the industry with little attention given to those that choose to stay. Effective social impact assessment is increasingly moving towards a model that not only minimises costs but seeks to maximise benefits and opportunities (Vanclay 2012). Consideration should therefore be given to incorporating incentive-based support to those fishers who remain in the industry, particularly those that can prove they are fishing in a sustainable, environmentally friendly manner (Hilborn, Orensanz & Parma 2005; Gulbrandsen 2009; McCay & Jones 2011; Toonen & Mol 2013). A marine park that can claim to be protecting biodiversity as well as fostering and encouraging local, sustainable fishing practices may assist in building local economies and promote tourism particularly amongst ethically motivated consumers who are increasingly seeking out sustainable seafood products (Marine Stewardship Council 2010). This has been found to be the case in one MPA in north-west Spain where interpretative activities centred around sustainable fishing practices and the history of fishing have proven beneficial to local tourism (Perez de Oliveira 2013).

Consideration of the needs and motivations of Indigenous fishers requires thinking about the practice of Indigenous cultural and professional fishing in an integrated way with emphasis on the three main motivational dimensions of culture, food, and community and family relationships. MPA planning lends itself well to spatial management strategies, such as zoning, which can make use of traditional ecological knowledge and ensure continued access to culturally significant sites (Sloan 2002). However, ensuring continued access to seafood (regardless of the catch location) to fulfil the dietary and socio—cultural needs of Indigenous people also requires consideration. Therefore zoning plans need to be developed within the context of cultural fishing regulations and quota management systems (eg see Sloan 2002; Ban, Picard & Vincent 2009).

In NSW the appropriate recognition of cultural fishing is gradually being realised through the implementation of an Indigenous Fishing Strategy and legislative amendments, however, research participants felt that progress has been frustratingly slow (Smyth, Isherwood & Schnierer 2010; Beeton et al. 2012; Department of Primary Industries 2012a). To date no marine park in NSW has a finalised *Cultural Resource Use Agreement* in place, and there is only limited use of special purpose zoning for cultural use (Beeton et al. 2012). It is unclear if or how any finalised cultural use agreement will address wider concerns relating to bag and size limits and quota management for cultural use that interview participants highlighted as being closely linked to their concerns over marine park restrictions (Beeton et al. 2012).

7.5 Public policy: Seeking synergies between fisheries management and biodiversity protection

The results of the interviews with marine park opponents show a clear divergence between the policy position on MPA protection – or ‘state knowledge’ - and the local ‘fish’ knowledge of the user groups. The environmental knowledge of fishers unsurprisingly is heavily concentrated on fish and so they tended to focus on fisheries management objectives in their discussions about the value and effectiveness of the marine parks. The policy or ‘state knowledge’ position focuses on biodiversity protection and makes clear efforts to distinguish the objectives of MPAs from the traditional fisheries management goals of increased yield or sustainable catch limits. This debate is reflective of international efforts to differentiate between biodiversity conservation and sustainable use objectives. However this research suggests that even stakeholders actively engaged in the planning process and often with sophisticated knowledge of local ecological systems had trouble making the distinction between those two objectives, seeing them as either inextricably connected and/or equally desirable. This was further confused by a public debate which emphasized the fishing benefits of MPAs (or lack of) by MPA proponents and opponents alike (see Chapter Five).

Many MPAs are planned solely, or at least primarily, to achieve ecological objectives, as was the case in NSW, with social and economic considerations secondary to this principle objective (Read & West 2010; De Santo 2013; Grantham et al. 2013). The strong trend towards opposition based on environmental knowledge in this study suggests that marine park opponents have rejected the parks at their most basic and fundamental level – they have rejected their objectives. Often this was not born out of lack of concern for the marine environment or disregard towards the future health of marine resources but rather a different view over management priorities and the best means of achieving conservation outcomes. Interview participants wanted more than just a consultative role in the implementation of a ‘top down’ policy, they also wanted a role in determining the management approaches best suited to local environmental issues, as outlined in Section 7.3.

A divergence of opinion over the key threats to the marine environment and the best means of addressing them is common throughout the literature, suggesting that contestation over the objectives of an MPA may be a significant contributor to MPA opposition around the world. This may go some way towards explaining the general hostility towards MPAs from some sectors from the earliest

stages of inception. This presents a key challenge for policy makers in how best to seek synergies between the needs and aspirations of local communities and the international commitments and ecological imperative that are driving the global push for MPA networks (Agardy, di Sciara & Christie 2011; Ban et al. 2012). There are two possible ways in which this could possibly be achieved.

1. Expanding the scope and objectives of MPA policy to embrace some secondary, local level fisheries management objectives or;
2. Incorporating consideration of MPAs into wider, ecosystem based spatial planning exercises that incorporate a diversity of objectives.

Incorporating multiple objectives, both social and biological, into MPA planning may be one means of building support in local communities for MPAs while still pursuing fundamental conservation objectives. There are a number of examples around the world of where fisheries management objectives have been incorporated into MPA design to achieve both ecological and social outcomes. In Shark Bay, Western Australia, a range of fisheries management approaches have been applied in a spatially discreet World Heritage Area to successfully recover snapper (*Pagrus auratus*) stocks that had been seriously depleted by overfishing by recreational anglers. Importantly this recovery was facilitated by working with the local recreational fishing community to develop management responses (Jackson & Moran 2012). Studies in the Great Barrier Reef suggest that no-take reserves used in conjunction with quota management can provide both higher biomass and net economic returns to fishers (Little et al. 2011). In Indonesia the incorporation of both social (fisheries management) and biological (biodiversity protection) objectives into a spatial planning exercise for the Raja Ampat MPAs found scenarios which focused on only one of the two objectives tended to generate inequitable impacts on local communities. When considered together, however, they were able to spread these impacts more equitably across the communities and meet objective targets (Grantham et al. 2013). In Galicia, Spain, a co-management approach to a new MPA worked with professional fishers to develop an MPA that was focused on both fisheries management and biodiversity protection objectives. However the planning phase specifically avoided terms relating to 'biodiversity conservation' given these terms had negative connotations for fishers. This MPA has proved so popular that it prompted fishers in neighbouring areas to nominate additional areas for MPA protection (Perez de Oliveira 2013). These examples demonstrate that flexibility around policy objectives and inclusiveness of the ideas and aspirations of local communities can result in outcomes that are more socially acceptable while also providing conservation benefits. This approach may, however, require some acknowledgement that no-take reserves are not always the best or only means of addressing all of the issues that are of concern to local communities.

Marine spatial planning has been suggested as a potential mechanism for the management of multiple objectives in marine conservation (Mascia, Claus & Naidoo 2010; Agardy, di Sciara & Christie 2011; Ban et al. 2012). This approach incorporates a broad range of strategies to manage conservation issues that may include but are not limited to MPAs and no-take zones alone, and may also have the added advantage of being able to better incorporate the needs and objectives of local communities. This was the approach recommended by an independent scientific audit into NSW

marine parks conducted in 2012 and was also largely the approach taken by the relatively successful GBRMP RAP process (Kenchington 2010). The audit raised serious concerns with the consultation and socio-economic impact assessment processes employed in the more recent additions to the marine park network, including the PSGLMP and BMP. It concluded that a coordinated approach to management of the entire NSW marine estate was required in order to meet the often conflicting objectives of different stakeholders and government departments (Beeton et al. 2012). Efforts to integrate cross-sectoral and cross-jurisdictional issues in marine spatial planning exercises in Australia to date, however, have come up against significant challenges and have tended to be dominated by MPA debates regardless of their wider intentions (Vince 2013). Therefore careful consideration of the implementation process of multiple use MPAs may still be required to address the challenges associated with diverse stakeholder and policy objectives.

7.6 Further research directions

This research, while addressing a key gap in knowledge, highlights the amount of work still required in this field in order to grow knowledge and understanding of the factors that influence community acceptance of MPAs. The relationship between resilience to social impacts, motivation to fish and environmental knowledge is worthy of further research attention including quantitative surveys designed to test the theories developed in this thesis. This approach would allow for a greater appreciation of the extent to which impacts have been felt in communities into which an MPA has been introduced and the strength of the theorised relationships between motivations and impacts.

The attitudes, ideas and motivations of recreational fishers represent a significant research gap. Highly specialised fishers, often organised into clubs and lobby groups, see themselves as a significant stakeholder group and exercise considerable influence in MPA negotiations. Despite this there has been very little research to date on how marine parks have impacted this group and the factors influencing their acceptance of measures such as MPAs (see Sutton & Tobin 2009; De Freitas et al. 2013 for some examination of these ideas). Other recreational fishers seldom if ever participate in organised groups and their views may also be influential. Research is therefore required across the full spectrum of recreational fishing specialisation levels.

Finally, this research points to Marine Spatial Planning (MSP) and/or the better incorporation of top-down and bottom-up approaches to MPA management as potential tools whereby the objectives of local communities can be considered and addressed. Further research is required to evaluate the value of different planning tools in achieving social and ecological outcomes.

7.7 Conclusion

This research indicates that local history and demographic profiles can have a significant impact on the way in which local communities respond to interventions such as MPAs. While there are clearly benefits of seeking consistencies in approaches to MPA planning within and across jurisdictions this research indicates that planning processes also need to recognise the individual and unique needs of

each affected community (Vanclay 2012; Jones, Qiu & De Santo 2013). Rigid ideas around the best means of achieving biodiversity protection combined with 'a one size fits all' approach to planning and community engagement are likely to exacerbate conflict and division and stimulate opposition.

The recurring theme of diversity in the PSGLMP example indicates that recognising and encouraging diverse opinions and ideas can be a key component of engaging local communities and minimising the polarisation seen in the BMP. Incorporating 'bottom-up' approaches into communication and engagement strategies will allow for a greater diversity of voices to be heard and acknowledged. This requires moving away from the current approach of large-scale 'education' campaigns towards approaches that recognise the alternative systems of knowledge that can be provided by park users.

The results of this research highlighted a number of ways in which these social assessment processes could be improved 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.

Finally, the divergence of opinion over the objectives of MPAs appears to be a fundamental component of much of the opposition that was evident in the interviews with marine park users. In many ways the continuing debate over the PSGLMP and BMP appears to have been fuelled, at least in part, by a policy position that polarises fisheries management and biodiversity conservation objectives, putting the policy position of MPA proponents at odds with the predominantly 'fish' knowledge of extractive users. Incorporating the management objectives of local communities into MPA or marine spatial planning exercises may assist in building support for MPAs, provide communities with a greater sense of ownership and smooth the way for meaningful conservation outcomes. Considering motivation to fish may allow for the development of more holistic management responses to mitigate and compensate users for social impacts that may arise from any necessary trade-offs between these competing objectives.

8. References

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Appendices

Appendix 1 – Publications resulting from this research

[Production Note: the papers are not included in this digital copy due to copyright restrictions. The print copy includes the fulltext of the papers and can be viewed at UTS Library]

Voyer M, Gladstone W. and Goodall H. 2012. *Methods of social assessment in Marine Protected Area planning: Is public participation enough?* *Marine Policy* **36**: 432-439.

View/Download from: [Publisher's site](#)

Voyer, M., T. Dreher, W. Gladstone, and H. Goodall. 2013. *Carving the stake: dodgy science or global necessity? Local media reporting of marine parks.* in S. Cottle, editor. *Environmental Conflict and the Media*. Peter Lang, New York

Voyer, M., W. Gladstone, and H. Goodall. 2013. *Understanding marine park opposition: the relationship between social impacts, environmental knowledge and motivation to fish.* *Aquatic Conservation: Marine and Freshwater Ecosystems*

View/Download from: [Publisher's site](#)

Voyer, M., Dreher, T., Gladstone, W. & Goodall, H. 2013, 'Who cares wins: The role of local news and news sources in influencing community responses to marine protected areas', *Ocean & Coastal Management*, vol. 85, Part A, no. 0, pp. 29-38

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Appendix 2 - Key words used to indicate support/criticism or neutral framing of news articles

Supportive terminology	Critical terminology	Neutral Terminology
Science backed	Ineffective	research
Welcome	Locking up	enforcement blitz
opportunities	No science	fined
balanced	honest citizens made criminals	Have your say
big win/winner	community tension	Meeting dates/times
concerns addressed	Loss of rights	Consultation opportunity
accommodate	no/poor consultation	
listened	victim	
complements	doom	
busy	anger	
promote	ignored	
benefits	contempt	
smooth sailing	deception	
positive response	lies	
acceptance	destroy	
success	gravely concerned	
happy	flawed	
loves	wasted	
top marks	overturn	
fishing improvements	lost	
increased tourism	not happy/impressed	
	mass confusion	
	debacle	
	disgrace	
	storm/furore	
	failed/error	
	deceived	
	highly questionable	
	irresponsible	
	farce	
	hoodwinked	
	out of work	

Appendix 3 - Examples of emails from PSGLMP fishers re resistance to participating in the research

Thu 31/05/2012 3:02 PM

Hi Michelle it was good catching up with you last week.

Unfortunately everyone I've spoken with (and I've contacted around a dozen people) say they have had a gut-full of Marine Parks, the so called public consultation and they are not prepared to "waste anymore time" on the issue. They say they'll answer things next election.

I tried to convey the message that your report is to give direction to future decision making in regards to public consultation as well as the effect that the Marine Park now plays on their life-style and wellbeing but I keep hitting a brick wall.

I am very surprised with the friction still amongst most anglers and I honestly thought they'd dive at a chance to get their view across – obviously I'm wrong.

Cheers x

Tue 22/05/2012 10:46 AM

Hi Michelle,

Yes the PSGLMP has had a detrimental effect on the lives of local anglers, both recreational and professional, residents, businesses and tourists alike.

Restrictions to angling because of the false claims of GNS numbers have reduced staff recruitment, sales turnover and tourist numbers. Professional fishermen are currently raping and pillaging what is left, to get their numbers up so they can get the "big payout" from rec funding..... not a happy camper!

Your problem is that all this research will fall on deaf ears, NSW Fisheries are far too politically motivated and pre interested in votes than properly managing our fishery.

Best of luck.

Regards

Appendix 4 - Interview questions

Survey Questionnaire

The following questionnaire has been developed for the purposes of a research project into the social impacts of marine parks on local fishers and fishing communities. This questionnaire is completely anonymous, and will be used to develop a PhD thesis which compares the level and nature of impacts felt by fishers and Indigenous people who use two NSW marine parks in the Batemans and Port Stephens – Great Lakes areas. This research is independent of the NSW government and has not received any funding from the NSW government or any other state or federal government agency.

It is hoped that this project will improve understanding of the social impacts of marine parks and therefore assist in minimising or avoiding these impacts in future zone planning or management planning exercises throughout NSW and Australia. While the overall results of this research will be made publically available, the individual survey results will not be passed on to any third party. A copy of my contact details will be provided to you at the end of this research so you can contact me if you have any concerns or questions relating to this research, or if you wish to be provided a copy of the final thesis on completion.

Thankyou for your time

Regards

Michelle Voyer

University of Technology, Sydney

MichelleAnne.Voyer@student.uts.edu.au

Ph

NOTE:

This study has been approved by the University of Technology, Sydney Human Research Ethics Committee (Approval No. HREC2010-313A). If you have any complaints or reservations about any aspect of your participation in this research which you cannot resolve with the researcher, you may contact the Ethics Committee through the Research Ethics Officer (ph: +61 2 9514 9772 Research.Ethics@uts.edu.au). Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.

1. What is your main use of the marine park?

Please circle the statement most relevant to you and your use of the marine park.

Recreational line fishing

Professional fishing

Recreational spearfishing

Fishing charter operator

Game fishing

Indigenous/traditional fishing or hunting

Family recreation (eg swimming/picnics)

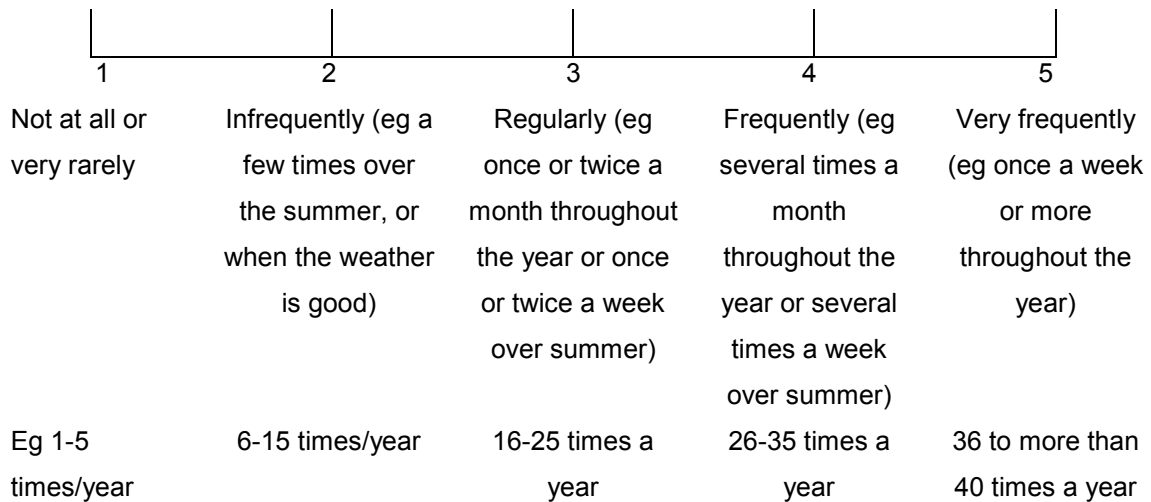
Scenic appreciation

Practice of custom/ ceremonial use

Diving/snorkelling

Other:

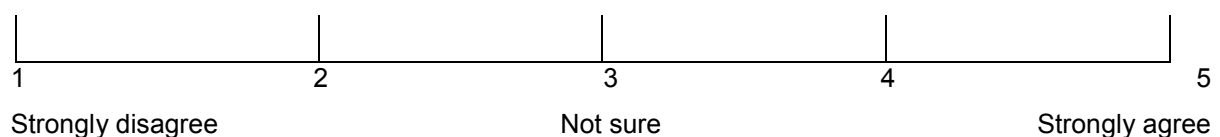
2. How long have you lived in the local area? Why did you move here?
3. Why do/did you fish? What do you enjoy about fishing?
4. What is your preferred target species/method of fishing?
5. How has the marine park changed the way you fish (such as how often you fish, where you fish or what you fish for)?
6. How frequently do you go fishing per year at present (for work or pleasure)? *Think of the last 12 months as a guide and estimate how many times you have been fishing in the marine park?*



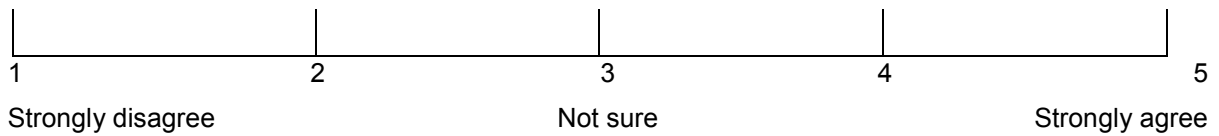
On a scale of 1-5, 1 being strongly disagree, 5 being strongly agree, rank each of the following statements.

7. Is there anything you miss about fishing from before the marine park was declared?

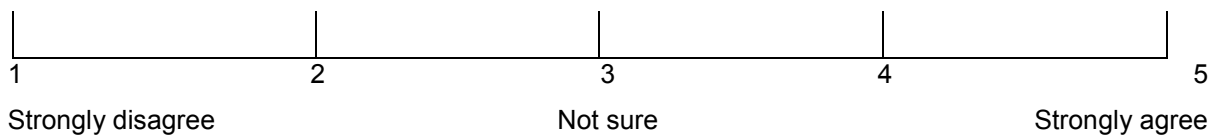
8. I go fishing less often because of the marine park.



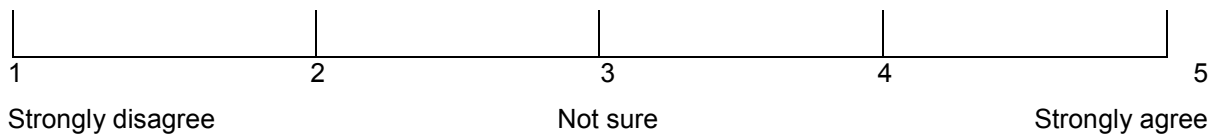
9. I enjoy fishing less because of the marine park.



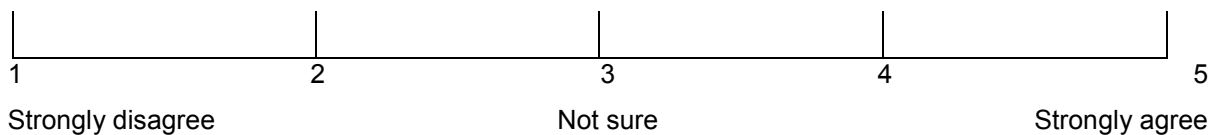
10. Before the marine park was declared I worried about the health and/or management of our local marine waters.



11. I think the health and/or management of our local marine waters has improved since the marine park was declared.



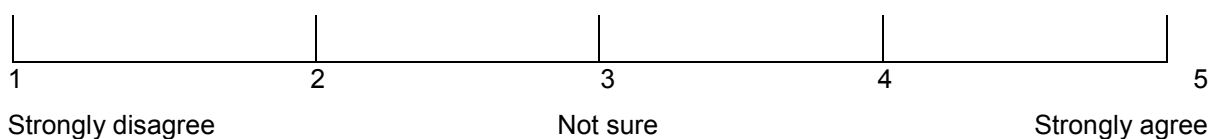
12. There are more fish to catch since the marine park was declared.



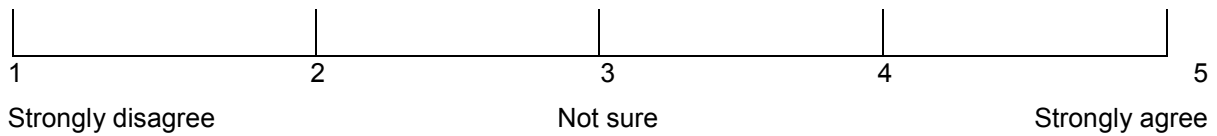
13. Before the marine park was declared, what do you think were the main threats to the local marine environment?

14. What do you think the main threats are now? Has the marine park been effective in managing them?

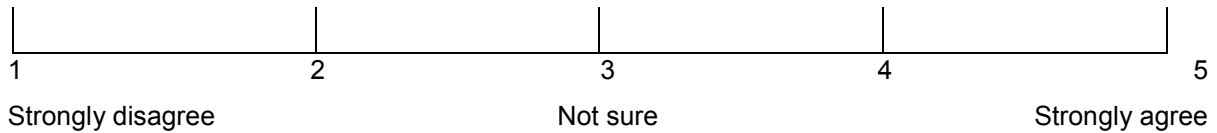
15. My family life has suffered since the creation of the marine park.



16. I feel more angry, depressed or unhappy since the creation of the marine park.



17. I have lost money because of the marine park.

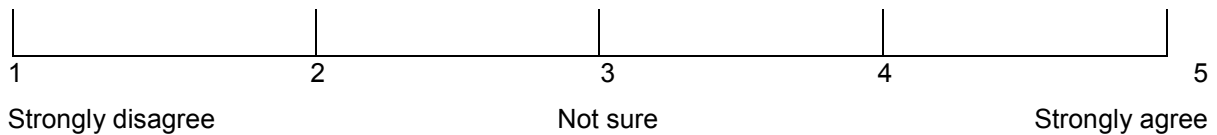


18. Has the marine park changed the way you relate to your friends, family or the wider community?

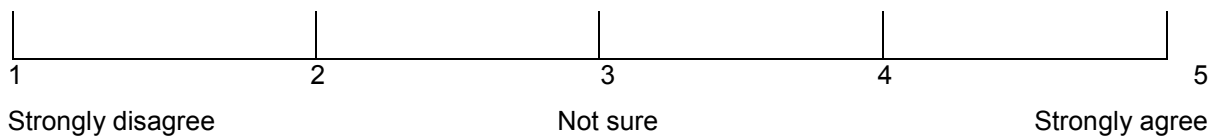
19. How does the marine park make you feel?

20. Has the marine park affected you financially?

21. The marine park has divided my local community.



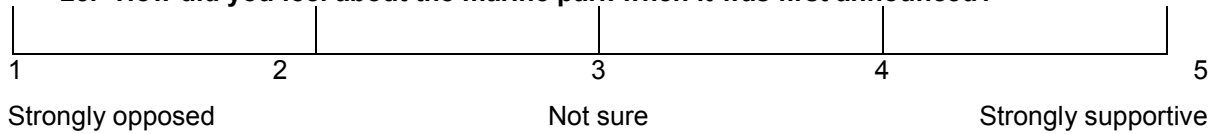
22. The marine park has financially benefited my local community.



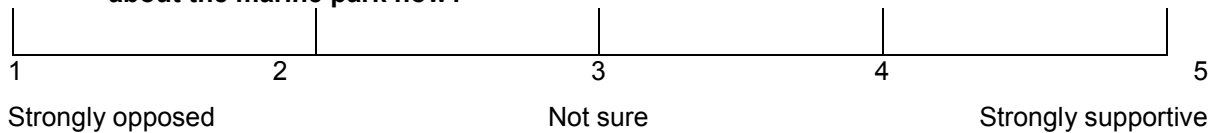
23. Do you think the marine park has been a good or bad thing for the local community/town? Why? (conflict between user groups)

24. Has your attitude towards the park changed since it was first introduced? Why? What has influenced your opinion (eg media, friends etc)

25. How did you feel about the marine park when it was first announced?



26. Based on your experiences since the implementation of the zone plan how do you feel about the marine park now?



27. Do you identify with the following groups?

Aboriginal

Torres Strait Islander

28. Age

Please circle:

15-29

45 - 59

75 - 99

30-44

60 – 74

29. Sex

Please circle

M/F

30. Postcode:

31. How long have you been associated with the marine park area

Please circle

Regular visitor

Occasional visitor

First time visitor

Resident : <1year

Resident: 5-9 years

Resident: 20-29 years

Resident: 1-4years

Resident: 10-19years

Resident: 30+ years

32. Please state your primary occupation (optional).

33. Education (optional)

Please circle the highest level of education you have achieved

Year 10 or equivalent, or below

Bachelor degree

Year 12 or equivalent, or below

Post graduate degree

Certificate, Graduate Certificate, Diploma, Graduate
Diploma or Advanced Diploma

Other (please detail):

Thankyou for your time