

Stakeholder engagement strategies for designating New Zealand marine reserves:

**A case study of the designation of the
Auckland Islands (Motu Maha) Marine Reserve
and marine reserves designated under the
Fiordland (Te Moana o Atawhenua) Marine Management Act 2005**

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"The use of sea and air is common to all; neither can a title to the ocean belong to any people or private persons, forasmuch as neither nature nor public use and custom permit any possession thereof."

-Elizabeth I of England (1533-1603)

"It is a curious situation that the sea, from which life first arose should now be threatened by the activities of one form of that life. But the sea, though changed in a sinister way, will continue to exist; the threat is rather to life itself."

- Rachel Carson, (1907-1964) *The Sea Around Us*, 1951

Abstract

In recent years, marine reserves (areas of the sea where no fishing is allowed) have enjoyed increased popularity with scientists and agencies charged with management of ocean and coastal resources. Much scientific literature documents the ecological and biological rationale for marine reserves, but scholars note the most important consideration for successful establishment reserves is adequate involvement of the relevant stakeholders in their designation. Current guidance for proponents of marine reserves suggests that to be successful, reserves should be designated using “bottom-up” processes favouring cooperative management by resource-dependent stakeholders, as opposed to “top-down” approaches led by management agencies and international conservation organizations. However, there is a dearth of guidance as to how to identify relevant stakeholders, and what constitutes adequate engagement.

New Zealand provides a unique opportunity for study of the two different approaches, with examples on both ends of the spectrum. The recent establishment of the Auckland Islands (*Motu Maha*) Marine Reserve under the designation framework provided by the Marine Reserves Act 1971 demonstrates a “top-down” approach; the designation of eight marine reserves as a component of the Fiordland (*Te Moana o Atawhenua*) Marine Management Act 2005, legislation that marks the culmination of a lengthy community stakeholder negotiation process, demonstrates a corresponding “bottom-up” design. A comparison of the two approaches elicits issues relevant to managers in considering designation approaches to follow in comparable situations elsewhere.

In this thesis, the author identifies and categorizes potential stakeholders by applying a framework modified from World Conservation Union (“IUCN”) stakeholder assessment processes adopted for terrestrial reserves and guidance for establishing marine protected areas. The researcher describes the two designation processes using a case study methodology, relying on secondary research materials and primary data from targeted interviews. The analysis considers relative relevance of the groups using a stakeholder model developed in the corporate social responsibility movement of the management field. In closing, the author proposes a heuristic model for managers to use when analysing stakeholder dynamics in future marine reserve designations when considering whether to use a “top-down” or “bottom-up” approach.

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This leads me to the dedication of this thesis. To my children, I am most grateful of all. I feel blessed to have known the sea and to have felt connected to the environment through my interaction with it. Through the protection of the marine environment and people's place in it, I

¹ "The only stakeholders I recognize are our grandchildren!" states Dr. Ballantine (Ballantine 2007).

hope that you may have the opportunity to know the sea as I have. It is my sincere hope that this thesis, in its own way, will contribute to that protection. For the future, and for you both, I have written this thesis as a gift. I hope you like it.

James Mize

November 10, 2007

Dedication:

To my children:

Robert Montgomery Mize
(15 Oct. 2004)

and

Temple Marie Mize
(2 July 2007)



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LIST OF ABBREVIATIONS

BNZ	Biosecurity New Zealand
BPAs	benthic protection areas
CBD	Convention on Biological Diversity (United Nations)
CEM	Commission of Ecosystem Management (IUCN)
CSR	corporate social responsibility
DoC	Department of Conservation (New Zealand)
EEZ	exclusive economic zone
FAO	Food and Agricultural Organisation (United Nations)
FMMA	Fiordland (Te Moana o Atawhenua) Marine Management Act 2005 (New Zealand)
GFFME	Guardians of Fiordland's Fisheries and Marine Environment (New Zealand)
GOFF	Guardians of Fiordland's Fisheries (New Zealand)
HEC	Human Ethics Committee (VUW)
ITQ	individual transferable quota
IUCN	International Union for the Conservation of Nature and Natural Resources
MAF	Ministry of Agriculture and Fisheries (New Zealand)
MfE	Ministry for the Environment (New Zealand)
Mfish	Ministry of Fisheries (New Zealand)
MPA	marine protected area
MRA71	Marine Reserves Act 1971 (New Zealand)
nm	nautical miles
NRC	National Research Council (United States)
NZ	New Zealand
NZBS	New Zealand Biodiversity Strategy
RMA	Resource Management Act (New Zealand)
UCLA	University of California, Los Angeles (United States)
UNCLOS-III	Third United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VUW	Victoria University of Wellington (New Zealand)

I. Introduction

A. Marine Reserves and New Zealand

In the last two decades, marine reserves, areas of the sea managed to prohibit removals of marine life, have gained increased attention by agencies charged with the management of marine resources. This attention marks an increased awareness of the limits of marine ecosystems to sustain impacts from human-induced disturbances, such as fishing, pollution, and other activities. There is a growing scientific consensus of the role marine reserves for sound marine management.

Compared to terrestrial environments, where land reserves have been commonplace for centuries, disturbances in marine environments have been notoriously difficult to perceive, being “out of sight” and thus “out of mind.” Improvements in the understanding of the marine environment spurred research into marine reserve design and benefits, focusing on how best marine reserves may be designated.

Nevertheless, legal regimes providing for designation of marine reserves often lag this scientific rationale. Often, existing management of traditional uses of marine space, such as fishing, directly conflict with proposed area closures and in many jurisdictions, the designation of reserves has been difficult and controversial. Managers recognize that in many cases, success in designating a reserve depends not on scientific design, but rather on socioeconomic considerations and engagement of the relevant communities (Kelleher 1999). Often compounding this difficulty is the lack of any direct authority providing for the designation of the reserves specifically, as opposed to established uses.

New Zealand is an exception to this situation, being a pioneer among nations with its specific legislation providing for the designation of marine reserves – the Marine Reserves Act 1971 (“MRA71”). New Zealand has substantial motive to be a leader in marine management. Under the Third United Nations Convention on the Law of the Sea (“UNCLOS-III”), the country asserts jurisdiction over an exclusive economic zone (“EEZ”) extending 200 nm from shore and comprising approximately 1.2 million nm², the fourth largest EEZ in the world and over fourteen times larger than its land area (Statistics New Zealand 2002:34). This marine area contains high diversity, with an estimated 8000 marine species within its boundaries (Id.:35)

Extractive use of this ocean and coastal area has a dramatic impact on New Zealand’s economy. In 2000, commercial fisheries harvested approximately 750,000

tonnes of seafood products worth an estimated NZ\$1.4 billion (Id.:35). Fishing provides for more than commercial wealth, it also provides substantial recreation opportunities for New Zealand residents, with an estimated 20% of New Zealanders being recreational fishers (Id.:35). In this face of this widespread and lucrative extractive use of the seas, New Zealand's exceptionalism with the MRA71 is that much more remarkable.

However, despite the thirty-five year history of the MRA71, the proportion of marine space designated as reserves falls far behind the corresponding proportion on land. Marine reserves encompass only a fraction of a percent of the EEZ compared to approximately 30% of New Zealand's land area protected as reserves (Walls 1998a:192). The literature does not reveal why this is so, and it presents a puzzle worth investigation. Given the juxtaposition of the MRA71 against the importance of extractive uses to New Zealand's economy, New Zealand's experiences with marine reserve designations and the resolution of stakeholder interests provides a fruitful avenue for investigation.

B. Aims and Objectives

New Zealand has one of the longest records of accomplishment in adopting marine reserves. This lengthy experience with marine reserves has been carefully documented vis-à-vis the benefit for the ocean ecosystem, but an assessment of the political or participatory processes followed has yet to be done. This thesis aims to address this deficiency.

This thesis looks to examples of marine reserve designation processes used in New Zealand to see what findings these experiences may reveal. With its comparatively lengthy history in designating marine reserves under specific statutory authority, New Zealand may provide lessons for managers in other jurisdictions that hope to develop approaches of their own. The research conducted for this thesis elicits information specific to stakeholder engagement strategies used in different marine reserve designation processes, to tease out principles that may be generalized for potential application in other areas.

By completion of this thesis, the author seeks to develop potential models of marine reserve designation. It is the author's hope that this analysis will be useful in advancing the dialogue on marine reserve implementation and encouraging innovative implementation solutions in waters with similar conflicts between reserve proponents and extractive interests.

C. Brief on Thesis Approach

This thesis relies upon a case study methodology, looking to two distinct examples of marine reserve designations to illustrate issues encountered during the designation process. Subject reserves studied were chosen from the reserves existing at the start of this investigation, on the basis of several criteria. First, the researcher sought subject reserves that could be indicative of choices between different ways of engaging stakeholder communities, in either a “top-down” government-led approach or a “bottom-up” approach favouring more involvement of stakeholder communities. Second, the researcher preferred subject reserves that occurred relatively recently, in order to maximize the accessibility of data dependent on memory or archival retention policies. Finally, the researcher preferred reserve subjects with strong similarities to each other and parallels to the researcher’s own background in Alaskan fisheries. The two marine reserve designations relied upon for this thesis are the Auckland Islands (Motu Maha) Marine Reserve and the marine reserves designated under the Fiordland (Te Moana o Atawhenua) Marine Management Act of 2005.

Much of the knowledge required to complete the case studies is available from government records, public documents and contemporaneous reports (i.e. newspaper accounts). Thus, much of the research consists of secondary data, compiled and arranged to tell a history of the implementation processes.

However, to better capture views of affected stakeholders, managers and other interests, the thesis relies upon primary interview data of subjects in resource-dependent communities, government agencies, and conservation organisations as well. Interview subjects were asked to share personal observations, opinions, and reflections, especially those that may not be available through secondary sources. Interviews were conducted following a semi-structured format following a checklist of topics of relevance to the thesis.

To evaluate the perspectives of the various stakeholders involved in the designation processes, the thesis applies a hybrid framework developed as a synthesis of approaches used in terrestrial reserve designations (Shepherd 2004), recommendations from previous marine protected area literature (Kelleher 1999), and from stakeholder theory in the management disciplines (Freeman 1984; Mitchell, Agle and Wood 1997). The framework thus devised provides a method to analyse the respective attributes of the different groups, contributing to the discussion comparing the two case studies. In conclusion, the author suggests a rudimentary heuristic

model by which managers may assess the relative positions of competing stakeholders in the resource-dependent and conservation communities.

D. Outline of Remaining Chapters

a) Chapter 2 – Thesis Methodology

This chapter sets forth the structure and limitations of the thesis and provides the basis for the investigation and analysis. First, the author defines the thesis' objectives and the research question. Next, the author briefly recounts his own particular biases and the predominant bias of the field within this research is a part. After that, the chapter lays out the framework used for analysis of research conducted for the thesis, with explanation of its relevance and mechanics. Next, the chapter details the rationale for employing a case study methodology, documents the selection of the subject case studies, details the data collection methods used, and discloses the limitations of the investigation.

b) Chapter 3 – Literature Review

This chapter reviews literature regarding marine reserves and marine reserve designation processes relevant to the design of this thesis. First, the chapter briefly acknowledges challenges of managing marine areas. The section next examines the role that marine reserves can play in assisting managers to meet these challenges. Next, the chapter considers several recent surveys of marine reserves, noting in particular the recommendations made by others for future marine reserve designations. Finally, the chapter diagnoses a gap in these recommendations on engaging with relevant stakeholders during marine reserve designations.

c) Chapter 4 – Case Studies

This chapter tells the stories of the two case studies relied upon as the basis for the thesis. In the first section, the chapter recounts the designation of the Auckland Islands Marine Reserve. This section describes the mechanics of the MRA71 and the role of the New Zealand Department of Conservation ("DoC") in designating marine reserves under the Act. The section relies mostly upon DoC publications, and illustrates specific issues encountered by direct quotes of interview participants.

In the second section, the chapter examines the genesis and evolution of a stakeholder advisory body that eventually resulted in the passage of its own specific legislation including a suite of eight marine reserves within its provisions. The section considers multiple aspects of the coordinated marine management strategy other than

marine reserves. The section relies mostly on documents produced during the course of the development of the legislation, several ex post analyses, substantial input from interviews, and direct observations.

d) Chapter 5 – Discussion

This chapter analyses each of the respective case studies under the framework devised in Chapter 2. Once evaluated, the chapter compares the two designation processes against each other. In considering the similarities and differences of the two processes, the author conceptualizes a heuristic model by which managers may be able to determine whether a “top-down” or “bottom-up” designation approach may be preferable in a given situation. The chapter concludes with an acknowledgment of the limitations of this proposed model, with recommendations for refinement based on future research work.

e) Chapter 6 – Conclusion

In the concluding chapter, the author muses upon reactions encountered under the performance of the investigation, reflects on the merits of the discussion in the previous chapter for marine managers, and considers the potential applicability of the analysis for future reserve designations.

II. Perspectives on Designating Marine Reserves

A. Research Objectives and Question

This thesis starts with the assumption that spatially explicit marine management regulations, including marine reserves, are deemed desirable from a policy perspective. Rather than looking at the question of whether marine reserves *should* be designated, this thesis investigates *how* they should be designated.

As the literature review demonstrates, substantial research supports the use of marine reserves as a tool for conservation, but there is a paucity of research into the human dimensions of marine reserve implementation. This thesis seeks to add to the knowledge of implementation processes by investigating designation approaches used in New Zealand. The guiding question for this investigation then, is:

How does the range of New Zealand designation processes work to establish marine reserves, as viewed by diverse perspectives of stakeholders dependent on marine resources, the conservation community, and government officials?

B. Research Approach

1. Researcher's bias

The researcher conducts this investigation clouded by the restrictions of his own biases and those prevalent in the field within which he works. These biases include those of perspective specific to the researcher's own personal experience and the normative biases from the researcher's epistemological worldview. As such, this section attempts to disclose these influences that may affect the findings in the analysis section of the thesis.

2. Academic context

This research follows a multi-disciplinarian approach consistent with the researcher's own academic training. The researcher's undergraduate training is as a

general social scientist, with emphasis on political sciences and communications. In addition the researcher's post-secondary training includes professional degree study in the legal and management disciplines at UCLA. The researcher's own legal scholarship has focused beyond analysis of case law and interpretation of statutory law as applied to particular fact scenarios and looked more at underlying policy considerations (Mize 2006a, 2006c, 2007). Additionally, the researcher's study in the management field relies upon case study analyses to illustrate pragmatic managerial issues, including this researcher's emphasis in strategy and organizational development.

The researcher's current study of development theory builds upon this foundation consistent with its interdisciplinary approach. This study relies primarily upon practical experiences of practitioners engaged in policy implementation and the practical application of development theory. This thesis follows this reliance, seeking to analyse actual experiences so as to refine and apply theoretical models.

3. Professional background²

This research grows out of my past career as commercial fisherman in Alaska. As a young man, I was filled with ideas of adventure fuelled by too many sea stories such as *Moby Dick* and *The Sea Wolf*, and embarked on a seagoing adventure of my own, spanning 18 years and sailing on 38 different boats. This varied exposure to the North Pacific fishing industry imbued me with several deep-seated preferences and beliefs, which I carry to this day.

One notable preference is that of wide open spaces and low population densities. Alaska is a big place, with few residents for the space available, even more pronounced at sea. Another preference is for the attitudes and lifestyles that evolve in such a location. I have little interest in urban studies, preferring the characteristics of self-reliance, austerity, and ties to nature found in more isolated communities. This preference became clear in past work on marine reserve implementation in Southern California, when I discovered that demographics and attitudes of fishers are not necessarily consistent between locales. One reason for selecting New Zealand as a destination for conducting research was the recognition that much of the country is similar to parts of Alaska with which I am familiar.

² For the purpose of this section, I have abandoned the use of the third-person, the personal nature of the narrative better served by a first-person account.

As for beliefs, I believe in the fundamental “goodness” of fishers, it is a noble profession. Fishers harbour a strong conservation ethic – being so closely reliant upon the bounty of nature teaches respect for its limits. Detractors of the profession dispute this, pointing to instances of waste, excess, and depletion to support a characterization of fishers as unethical and rapacious opportunists. But from my own dealings, I believe such occurrences to be either non-characteristic outliers - the proverbially “bad apples,” so to speak - or to be systemically generated from poorly designed management interventions rather than from any inherent failing of the participants in the fishery.

One such management failure I encountered during my fishing career was the regulation designating rockfish (*sebastes*) as a “prohibited species.” Under fisheries regulations applicable at the time, fishers could still catch these long-lived and low-fecundity fish, but were not allowed to retain the dead fish for sale or consumption. The designation was supposed to discourage harvest of these species, but did nothing to prevent accidental take, known as “incidental bycatch.” Since rockfish are a sedentary species with a narrow range and a clear habitat preference (thus the name), reserves protecting the areas rockfish prefer may work better at protecting the species than prohibitions against the marketability of harvested fish (Soh, Gunderson, and Ito 2001:177-178). Thus, I am a supporter and advocate of the use of marine reserves as a tool for fishery management and marine environmental conservation.

But fishers have a place within this environment as well. I believe that ecosystem management should not be exclusive of the people who are part of the environment, but should take into account their needs as well. This is not to say that since people are part of the environment, anything they do to modify the environment is natural and thus acceptable. Rather, it is to say that ecological protection goals should be carefully balanced against the concerns of the people that interact with its resources. It is a general proposition of this thesis that for effective conservation measures to be implemented, affected constituents should be consulted with appropriately. What “appropriately” means in this circumstance is a central theme of this investigation. Thus, the primary bias of this researcher is that of a utilitarian and libertarian perspective.

4. *Predominant bias*

a) Researcher's bias

Utilitarianism, as espoused by John Stuart Mill (1864), supposes that which provides the greatest happiness for the greatest number of people is good, and that which acts against it is not. Mill's utilitarian approach is not without its critics, however. Most notably, Moore (1903:64-72) challenged the approach for its presumption to be able to assign values to happiness empirically, rather than based on moral faculty, what Moore termed the "naturalistic fallacy" (Id.; Quinton 1999a:566). This researcher concedes that Mills' definitions of happiness as being "pleasure" or the "absence of pain" fails to adequately capture the range of what might be considered desirable from a societal perspective. What ends are desirable and what might compose happiness may be subject to debate, but this researcher nonetheless subscribes to the basic premise that happiness can be measured against such normative standards in order to inform social choice.

In earlier works, Mill (1859) proposed that "the only purpose for which power can be rightfully exercised over any member of a civilised community, against his will, is to prevent harm to others" as a natural limit on the legitimacy of society's restraint of an individual, commonly known as the "liberty principle" or "harm principle." For the harm principle to apply, an individual ("agent of action" in Mill's lexicon) must be capable and thus be free to choose, competent to make choices, and sufficiently informed (Id.).

Mill's conceptions of utilitarianism and liberty have evolved to encompass conceptions of fairness, with Rawls' (1999) contribution being most notable. Rawls asserts two principles of justice. First, he argues "that each person is to have an equal right to the most extensive scheme of equal basic liberties compatible with a similar scheme of liberties for others" (Id.:220). Second, "social and economic inequalities are to be arranged so that they are both ... to the greatest benefit to the least advantaged" and "open to all under conditions of fair equality of opportunity" (Id.:266). Rawls improves upon Mills' "happiness" by addressing principles for its equitable distribution.

Mill's premise is an anthropocentric viewpoint, as is Rawls'; the happiness of non-humans does not factor in the equation. As applied to the case of marine reserves, this anthropocentrism has implications. The various sentient marine organisms or a given location's marine ecology is irrelevant to the calculation of worth except inasmuch as it impacts on some human value. Human values of marine

resources not only include extractive uses such as fishing, but also include *in situ* values such as recreation (i.e. fish to look at while diving) or option values (i.e. the possibility of human use in the future, such as protection of biodiversity for “bioprospecting” for medical research). Some ecologists argue in favour of an inherent value of a marine organism for its own sake, however, under a utilitarian perspective such does not exist. But “existence value” does exist in terms of human perception, that is, the utility or “happiness” correlated with the thought of the existence of the marine organism regardless of whether the organism is put to use.

Under this researcher’s utilitarian and libertarian bias, the only acceptable reasons to implement marine reserves are to provide for the maximum happiness through the management of the reserve, or to protect against harm from misuse. The former would apply in the case of a determination that the loss of utility of the non-extractive human values of the given location exceeds the utility derived from those who benefit from continued extraction. The latter would apply in the event, all too common, where there is inadequate knowledge of ecosystem functioning and processes to assure that extractive uses do not impinge on the benign uses of others.

But there is another problem when managing marine ecosystems, in that quite a bit is also unknown about the effects of human activities that may impact the ecosystem’s integrity across time. Judging the contribution of a marine area to happiness cannot merely look to current values and discounted future expected values because often these values cannot be known. This implicates Rawls’ first principle in regard to future generations, as well as potentially violating their equality of opportunity. In response to such uncertainty, a managerial approach consistent with Rawls’ “Justice as Fairness” would embrace the precautionary principle, balancing the rights of individual interests with the need to reduce risks of adverse effects to the environment (Jensen 2002:40).

The tricky bit in this analysis is quantifying these values. Nonetheless, this perspective of the researcher’s assumes that such a determination can be made, and that it is the appropriate means for determining the suitability of marine reserve designations.

b) Epistemology

The prevalent epistemology in the fields of marine reserve development, general ecosystem management, and in stakeholder analysis assumes that knowledge can be known and measured, both characteristic of a positivist epistemology. Positivism embraces all true knowledge as scientific and capable of measurement, and

recognises that “social processes are reducible to relationships between and actions of individuals” (Quinton 1999b:669). Surveys of marine reserve designation processes reviewed later in this thesis adopt this view, embracing case studies to demonstrate the relations between individuals and marine reserve designations.

Marine reserve scholars assessing case studies also build upon each other, influencing and legitimizing the field within which they study, and generalize socioeconomic findings, both characteristics of a constructionist epistemology (Downes 1998). Constructivism postulates that ways of knowing depend not necessarily upon hard evidence or data, but are subject to the social arrangements of the scientists themselves and depend on an accrual of experiences (Id.). Constructivists study the accumulation of the knowledge through its general acceptance, the “transformation of conjecture into established background knowledge in a field,” and hold the view that “such facts are not revealed to scientists, but are constructed by them” (Id.).

c) Implications on research

The researcher embraces the positivist and constructivist epistemology found in the literature; this embrace effects the preparation of this thesis. While the researcher deems that knowledge can be derived from the study of marine reserve designation processes and expressed as findings, the processes themselves do not express fixed truths. Principles learned under this study are thus subjective, and prone to refinement based on additional learning and application by others in the field. Just as this thesis builds on the work that comes before it, so to it serves as a departure for further discussion and debate on the proper designation processes for implementation of marine reserves.

C. Research Framework

In keeping with the researcher’s interdisciplinary approach and constructivist epistemology, this thesis embraces a framework that relies upon multiple approaches in different contexts. From terrestrial conservation practice, the thesis draws from the ecosystem approach developed by the World Conservation Union (“IUCN”) (Shepherd 2004). This model is further modified to incorporate IUCN guidance for the development of marine protected areas (“MPAs”) (Kelleher 1999). To add to its descriptive and analytic power, the framework adopts principles from stakeholder theory developed in the Corporate Social Responsibility (“CSR”) movement in management studies (Freeman 1984; Mitchell, Agle and Wood 1997).

1. The ecosystem approach

New Zealand is a state member of the IUCN, an international organisation founded in 1948 whose mission is “to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable” (IUCN 2007). More recently, New Zealand joined as a party to the Convention on Biological Diversity (“CBD”), concluded at Rio de Janeiro on 5 June 1992, having signed the agreement on June 12, 1992 and ratified September 13, 1993 (UNEP 2007). Under the CBD, the government of New Zealand agrees, “as far as possible and as appropriate” to “[e]stablish a system of protected areas or areas where special measures need to be taken to conserve biological diversity” (UNEP 1992: art. 8). Recognizing the challenges faced by its member states in meeting obligations under the CBD, the IUCN developed guidance for a holistic strategy for land managers to integrate management of resources – land, water, and living beings – which it termed the “ecosystem approach” (IUCN/CEM 2006). As the IUCN Commission of Ecosystem Management describes it:

“The Ecosystem Approach places human needs at the centre of biodiversity management. It aims to manage the ecosystem, based on the multiple functions that ecosystems perform and the multiple uses that are made of these functions. The ecosystem approach does not aim for short-term economic gains, but aims to optimize the use of an ecosystem without damaging it” (Ibid.).

The ecosystem approach was subsequently endorsed at the Fifth Conference of the Parties to the CBD (UNEP 2000).

Consistent with the objectives of the CBD, the ecosystem approach seeks to achieve a balance between goals of conservation and sustainable use in an equitable manner. Twelve principles form the basis of the ecosystem approach (**see table 1**).

Table 1 – Principles of the Ecosystem Approach
(UNEP 2000)

Principle 1:	The objectives of management of land, water and living resources are a matter of societal choice.
Principle 2:	Management should be decentralised to the lowest appropriate level.
Principle 3:	Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent and other ecosystems.
Principle 4:	Recognising potential gains from management, there is usually a need to understand and manage the ecosystem in an economic context. Any such ecosystem management programme should: <ul style="list-style-type: none"> (a) Reduce those market distortions that adversely affect biological diversity; (b) Align incentives to promote biodiversity conservation and sustainable use; (c) Internalise costs and benefits in the given ecosystem to the extent feasible.
Principle 5:	Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach.
Principle 6:	Ecosystems must be managed within the limits of their functioning.
Principle 7:	The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.
Principle 8:	Recognising the varying temporal scales and lag-effects that characterise ecosystem processes, objectives for ecosystem management should be set for the long term.
Principle 9:	Management must recognise that change is inevitable.
Principle 10:	The ecosystem approach should seek the appropriate balance between, and integration of, conservation and use of biological diversity.
Principle 11:	The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.
Principle 12:	The ecosystem approach should involve all relevant sectors of society and scientific disciplines.

To assist parties in the implementation of these principles, the IUCN Commission on Ecosystem Management further developed a five-step process with a range of recommended actions at each step (Shepherd 2004). In *Step A*, managers identify the main stakeholders, define the boundaries of the ecosystem, and determine the logical relationship between the two (Id.:3-11). In *Step B*, managers characterize the nature of the ecosystem, and set up monitoring and management mechanisms (Id:

12-17). In *Step C*, managers identify the economic issues that influence the ecosystem and its inhabitants (Id.:18-21). In *Step D*, managers provide for spatial adjustment as needed to respond to changing circumstances (Id.:22-25). In *Step E*, managers establish long-term goals and flexible plans to achieve them (Id.:26-29).

At first blush, this progression may seem backwards to many managers accustomed to setting long-term goals at the outset and then figuring out how to accomplish them. But contrary to this conventional wisdom, the five-step program acknowledges that successful implementation of the ecosystem approach relies on transparency and cultivating the buy-in of the relevant stakeholders (Id.:28). Shepherd's implementation guidelines acknowledge that Step A involves the trickiest issue, that of defining the boundaries of the ecosystem, the relevant stakeholders, and the relationship between the two. Shepherd points out that Step A implicates Principles 1, 7, 11, and 12, each discussed here in turn.

- *Principle 1: The objectives of management of land, water and living resources are a matter of societal choice.*

The first principle of the ecosystem approach creates the frame of reference for the remaining principles, acknowledging that communities proximate to and dependent on resources being managed “are important stakeholders and their rights and interests should be recognised” (UNEP 2000:2). The ecosystem approach embraces cultural diversity as well as biological diversity, and thus requires sensitivity to the needs of the affected population. Under this approach, ecosystems should be managed not only for “intrinsic values,” but also for “tangible or intangible benefits for humans, in a fair and equitable way,” and choices between conflicting priorities should be acknowledged and clearly communicated (Id.).

- *Principle 7: The ecosystem approach should be undertaken at the appropriate spatial and temporal scales.*

At first blush, this principle appears self-evident; if translated into layman's terms it basically says that the ecosystem approach should be applied in the right place and time. But the key here is the determination of bounds in both time and space that are appropriate for the desired objectives (UNEP 2000:3). Deciding what “appropriate” means is where the action is, and should be determined by “users, managers, scientists, and indigenous and local peoples” (Id.). Where needed, managers should promote connectivity between areas as well (Id.).

- *Principle 11: The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices.*

The Ecosystem Approach acknowledges that effective management strategies demand robust information and that a “much better knowledge of ecosystem functions and the impact of human use is desirable” (Id.:4). Information regarding management efforts should be solicited and shared with all affected parties (Id.). Consistent with obligations under the CBD, managers should “respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities ... relevant for the conservation and sustainable use of biological diversity” (UNEP 1992: art. 8[j]). When making management decisions on the basis of assumptions, these should be clearly disclosed “and checked against available knowledge and views of stakeholders” (UNEP 2000:4).

- *Principle 12: The ecosystem approach should involve all relevant sectors of society and scientific disciplines.*

The key to this principle depends on the meaning of the word “relevant.” Problems of managing biological diversity can be complicated, “with many interactions, side-effects and implications” (Id.:4). Thus, managers should engage the appropriate knowledge for the situation, including “expertise and stakeholders at the local, national, regional and international level” (Id.:4).

Shepherd stresses the importance of Principles 1 and 12 to address societal choice, and acknowledges that while the Principles do not advise how to choose which stakeholders matter, as a practical matter that will need to be done (Shepherd 2004:6).

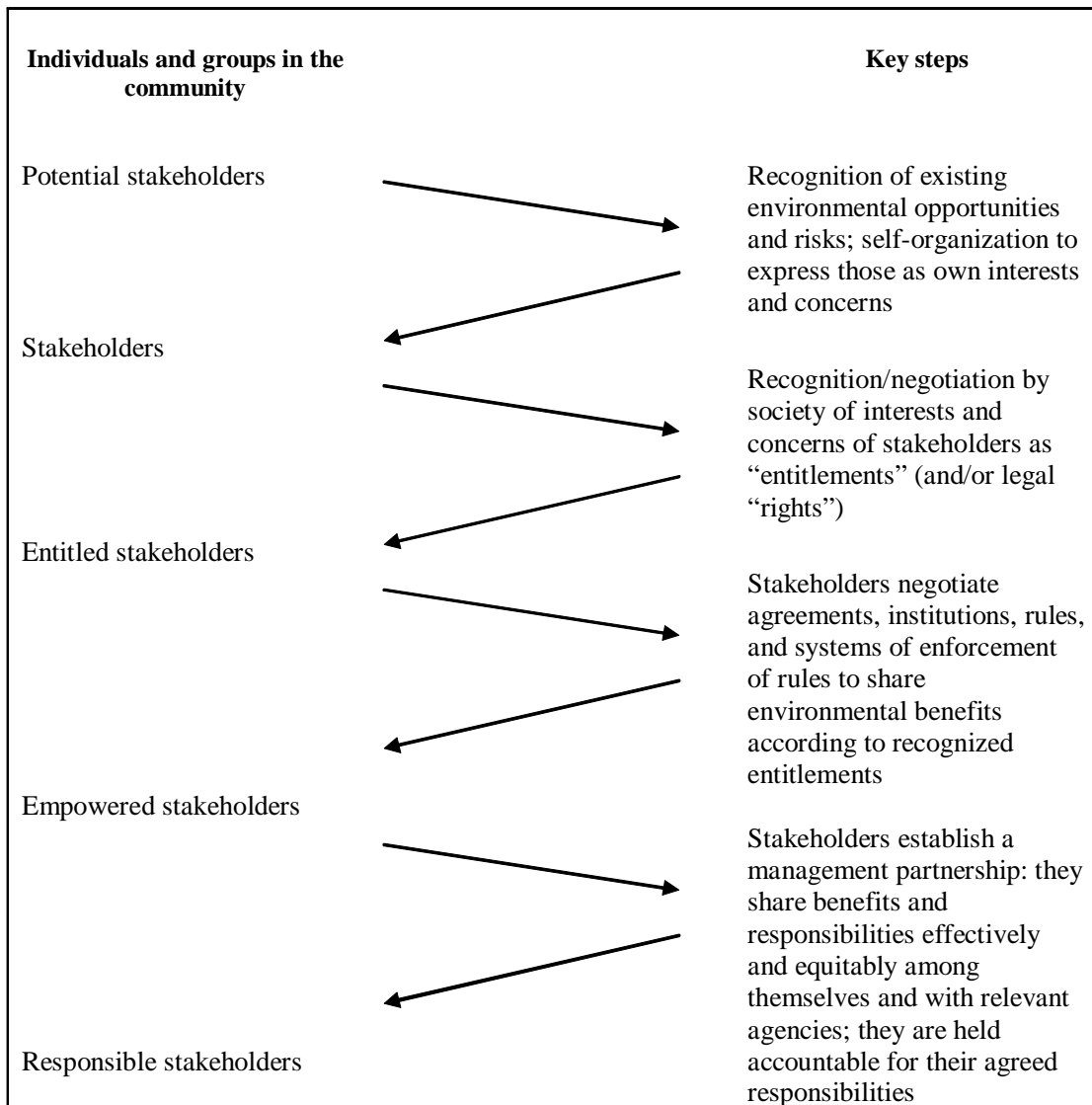
2. Guidelines for stakeholder identification

The IUCN *Guidelines for Marine Protected Areas*³ anticipated such a stakeholder identification process, and lays out a process by which various sectors would sort themselves out to become those involved in MPA management partnerships (Kelleher 1999:30-31). The model held up in the *Guidelines* anticipates an evolution of participation, with a winnowing out of potential stakeholders over time through the key steps in the process (**see figure 1**). This rudimentary model can be criticized as a form of “tyranny by participation” (Cooke and Kothari 2001). By its focus

³ Referred to in greater detail in Chapter III

on lengthy procedure, the model rewards groups with more sophisticated capacity and resources at their disposal, marginalized groups whose needs may be significant may not have the resources to participate in such a “last one standing” process. The *Guidelines* acknowledges that the model shown is an ideal that may be “difficult” to achieve in all cases given political inequality between groups; sadly, they do not suggest any alternative in the face of such disparate voice among affected participants (Kelleher 1999:31).

Figure 1 – Towards empowered, responsible stakeholders
(from Kelleher 1999:31)



3. *Shepherd's triage approach to stakeholder assessment*

Shepherd acknowledges the risk that those most dependent on resources being locked up may also be those most at risk of marginalization, and instead recommends a more complex, four-part approach to stakeholder analysis. First, “[i]dentify all the key stakeholders with interests in the proposed ecosystem” (Shepherd 2004:6). Second, the identified stakeholders then should be weighted using a stylized triage system. Primary stakeholders are “[t]hose who are most dependent on the resource, and most likely to take an active part in managing it;” secondary stakeholders “may include local government officials and those who live near the resource but do not greatly depend on it;” and tertiary stakeholders “may include ... national level government officials and international conservation organisations” (Id.:6-8). Shepherd characterises secondary and tertiary stakeholders as “[o]ver-powerful voices,” suggesting by comparison that primary stakeholders do not hold such power, thus the reason to weight them more strongly (Id.:6). The third step, once stakeholders have been classified, is to “[a]ssess the relative stakeholder management capacity and commitment, in regard to the ecosystem” (Id.:8). Finally, Shepherd recommends setting up a forum to foster involvement of the primary stakeholders, with a regular meeting schedule and resources to assist in the primary stakeholders’ meaningful participation (Id.).

4. *Salience - stakeholder theory from the management disciplines*

But while the typology suggested by Shepherd may be useful for assessing stakeholders in marine reserve designation processes, it does not provide a means to analyse the relative strength of potentially competing stakeholder groups. Shepherd assumes that resource-dependent interests may be less powerful, but does not contemplate the relative positioning between various primary stakeholders, or the possibility of secondary or tertiary stakeholders that have less power than primary stakeholders. For a more thorough framework assessing comparative stakeholder status, this thesis turns to stakeholder theory developed in the management disciplines in the context of corporate social responsibility movement of the 1960s and '70s.⁴

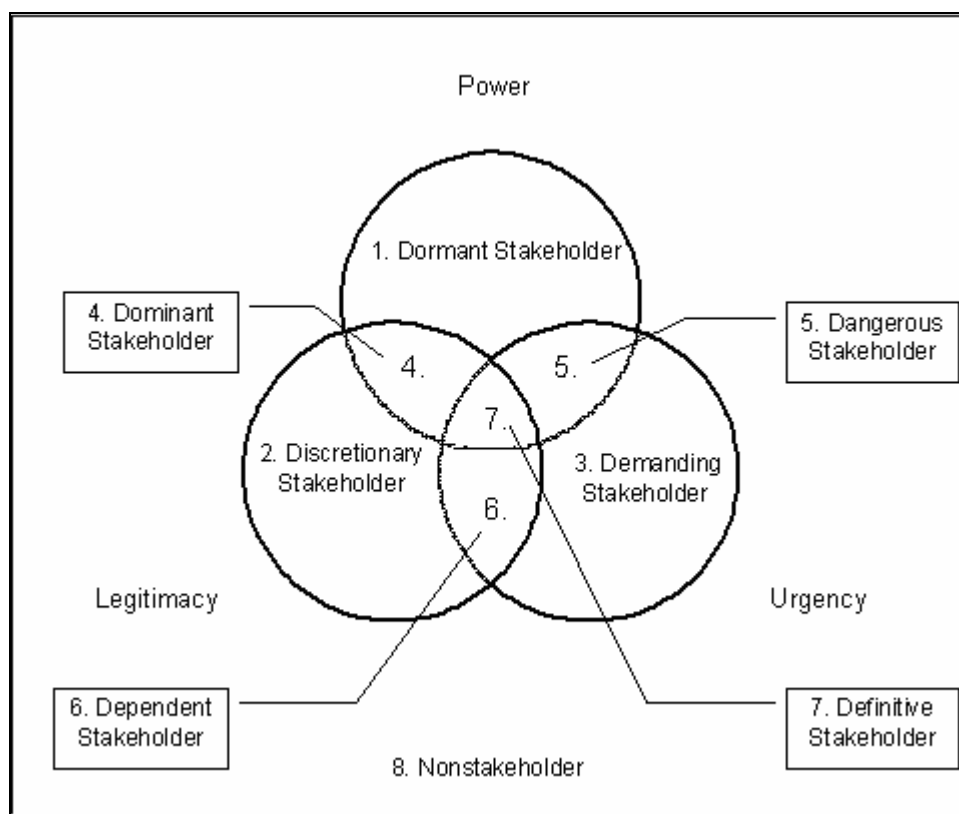
In 1984, R. Edward Freeman published the seminal work documenting the emergence of stakeholder theory. Freeman asserts that a “stakeholder is (by definition) any group or individual who can affect or is affected by the achievement of

⁴ The discussion of stakeholder theory in the next three pages served as the basis for an independent law review article applying the framework in another field, currently under submission (Mize 2007).

the organization's objectives" (Id.:46). This definition has two components: a) a claim, and b) the ability to affect or be affected by the contemplated action. The claim component is analogous to the resource dependence of Shepherd's primary stakeholders, focusing on the legitimacy of the party's interests ("Stakeholder' connotes 'legitimacy'") (Id.:45). The second component – the ability to affect (or be affected) – is analogous to the "over-powerful voice" of Shepherd's secondary and tertiary stakeholders, and recognizes the relative influence or power of these parties (Id.:46).

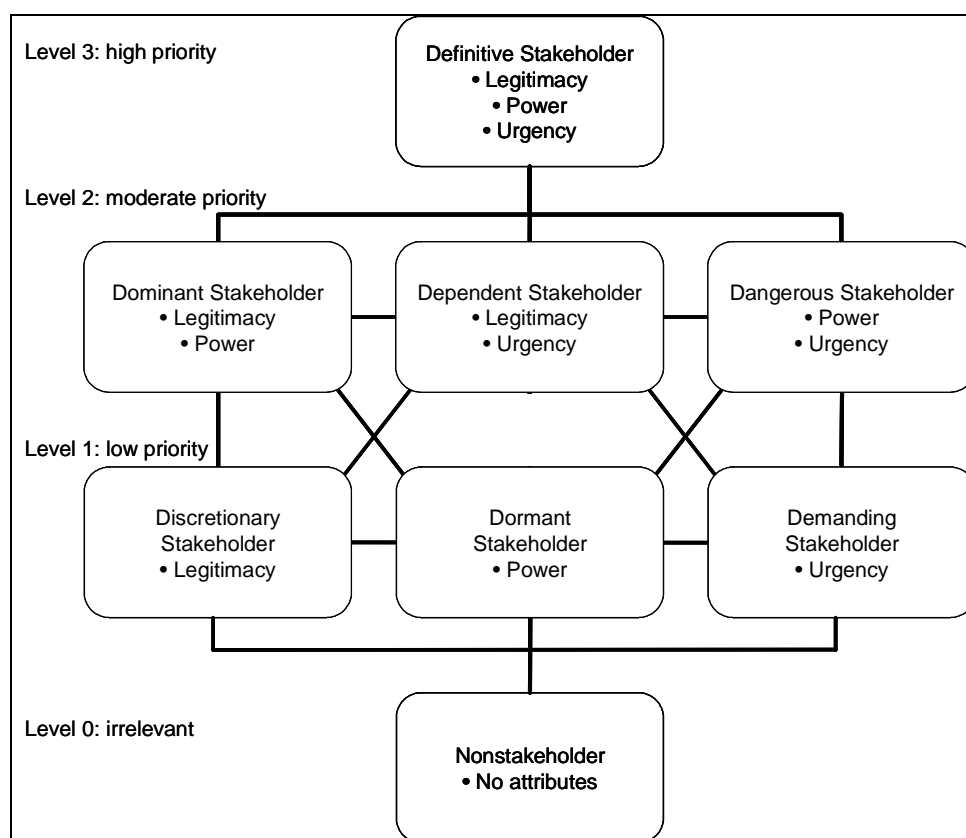
Freeman (1994) refers to stakeholder theory as "the principle of who or what really counts," reminiscent of development studies concepts espoused by Chambers (Chambers 1983, 1997). Building on Freeman's framework, Mitchell, Agle and Wood (1997) divide this principle into a normative component (*who is a stakeholder?*) and a descriptive component they refer to as "salience" (*what counts to managers?*). The authors acknowledge and commend the normative spectrum between power and legitimacy, but to this add "urgency" as another descriptive attribute that addresses the importance and timeliness of the potential stakeholder's interest (Id.:854). Rather than assessing stakeholders on a linear spectrum between power and legitimacy, this model plots relationships between three axes of power, legitimacy and urgency, more fully mapping interactions of affected parties (**see figure 2**) (Id.:872).

Figure 2 - Stakeholder Typology Based on Presence of Attributes
(adapted from Mitchell et al 1997:874)



According to Mitchell et al, “stakeholder salience will be positively related to the cumulative number of stakeholder attributes – power, legitimacy, and urgency – perceived ... to be present” (Id.:873). This framework is more complex than Shepherd’s, classifying stakeholder interests by the presence of attributes. With no attributes present, stakeholders are “nonstakeholders;” with only one attribute, they are “latent stakeholders” (including “discretionary,” “dormant,” and “demanding” stakeholders); with two attributes, they are “expectant stakeholders” (including “dominant,” “dependent,” and “dangerous” stakeholders); and when all three attributes are present, they are “definitive stakeholders” (Id.:872). Salience corresponds with the number of attributes present – definitive stakeholders are most salient, while nonstakeholders are not at all (Id.:874-878). Importantly, this heuristic is descriptive in nature, providing a means for managers to discuss their perceptions of various stakeholder relationships, but it says nothing of the normative question of what those relations should be. The model can be expressed in a hierarchical view to illustrate the relative priorities between stakeholders of different salience levels (**see figure 3**) (Friedman and Miles 2006:96; Page 2002:78).

Figure 3 - Model of Stakeholder Priority for Managers
(adapted from Page 2002:78, as cited in Friedman and Miles 2006:96)



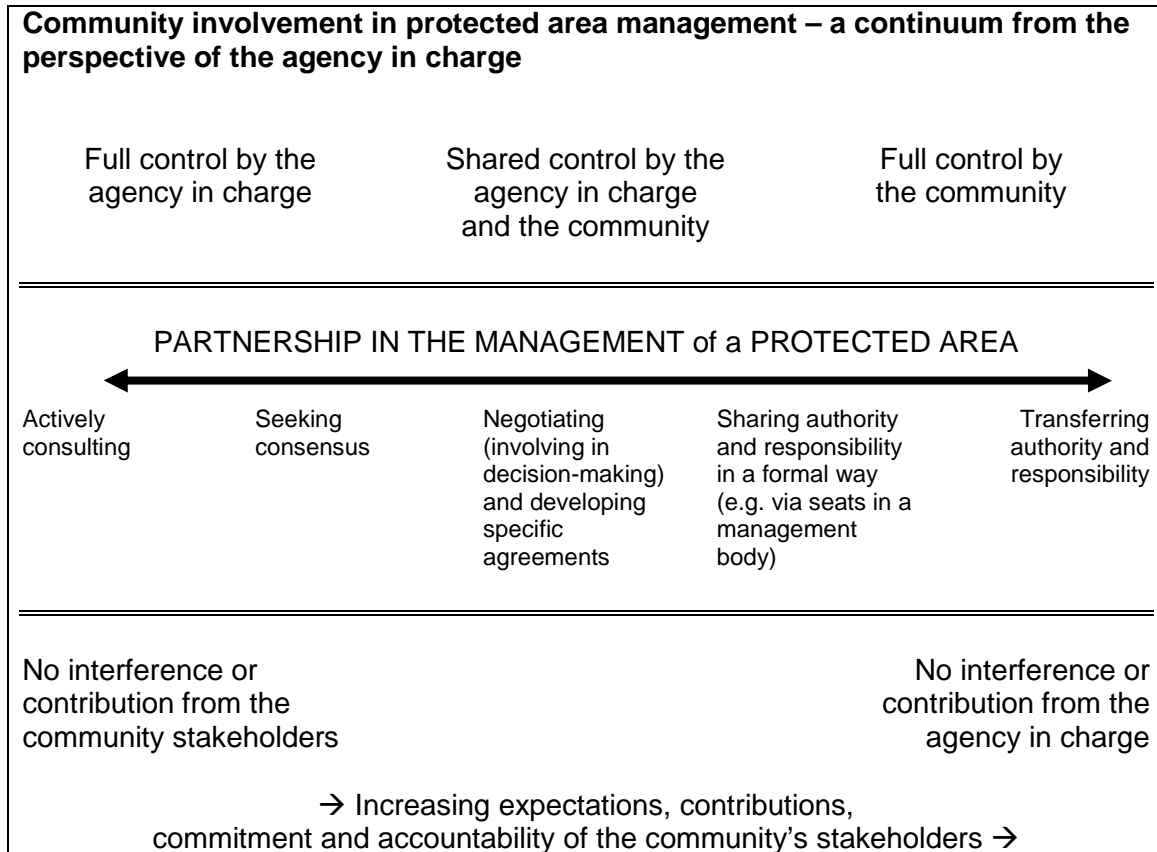
Identifying relevant stakeholders and assessing the weight given to them are only the first two steps of Shepherd's four-part process, however; managers must also assess the capacity and commitment of stakeholders to contribute to reserve management in the third step, and must set up some form of forum to foster this participation as the fourth, and final step. Shepherd does not go into detail about how managers should complete these tasks. Arguably, Mitchell et al's stakeholder salience model may help managers with the third step. Organizational capacity and commitment to managerial responsibility would be components of the determination of relative priority, as these would contribute to a group's perceived attributes of power and legitimacy.

5. What next? Guidelines for “top-down” or “bottom-up”

Still, once the groups are identified and fully assessed, Shepherd recommends setting up an appropriate forum to include stakeholders in management decision-making, but does not offer guidance as to what sort of forum may be appropriate. For this, the *Guidelines* again offer some assistance, suggesting that a range of options

may be embraced with some level of sharing of decision-making authority between the agency in charge and the stakeholder community groups (*see figure 4*) (Kelleher 1999:31).

Figure 4 – Continuum of Community Engagement in Protected Area Management
(from Kelleher 1999:32)



On one end of the spectrum, the responsible agency maintains full control of the management of the reserve, and while it may consult with affected interests, stakeholders do not have an active role in the process (Id.). On the other end of the spectrum, full management authority is devolved to the community with the agency taking the inactive role. The *Guidelines* characterize these two ends of the spectrum as “top-down” and “bottom-up,” respectively (Id.). As to the choice of what point on the spectrum to emulate, the *Guidelines* offer less help, stating that “[o]nly in the local context is it possible to see how far along this path of management partnerships it is appropriate to go” (Id.). The *Guidelines* merely advise managers to aspire to adopt a model as devolved to community stakeholders as possible, so long as it is “consistent with the achievement of the conservation objectives agreed for the MPA” (Id.). This model provides a useful framework for considering tradeoffs between different

approaches, but could be improved upon by offering managers some means of determining which end of the spectrum may be more appropriate in any given situation.

6. *Synthesis framework*

The primary research conducted for this thesis embraces a modified version of Shepherd's three-tiered typology of stakeholders to assess stakeholders in the designated reserves. With the tenor of resource management disputes expressing conflicting values of conservation and utilisation, Shepherd's typology allows a characterisation between a distinct group of impacted constituents concerned with the socioeconomic impacts of marine reserve implementation against a diffuse but mobilised group of conservation-oriented constituents, with government officials caught between the two camps. In this modified framework, primary stakeholders comprise the directly affected interests dependent on resources of the marine area being restricted as well as affected community interests indirectly dependent on the marine resources ("*stakeholders*"), "*secondary stakeholders*" include central government officials and those charged with management authority ("*government*"), "*tertiary stakeholders*" include broader organisations and diffuse interests outside the local community with less direct interests in the specific marine area ("*environment*" or "*conservation*"). These categories potentially overlap, and have some ambiguity in their selection; the researcher assigns categories to research subjects based on public representations in documents and submissions regarding the designation.

While this modified framework provides a useful means of separating interests in marine reserve designations in order to analyze their respective claims on the processes, the stakeholder salience model devised by Mitchell et al allows for discussion of how these claims interrelate and what the implications may be for other reserve designations. Thus, this thesis will employ both in the discussion of research results. Finally, the thesis will propose a suggested model that may be useful for managers to consider when choosing between "top-down" and "bottom-up" approaches suggested in the *Guidelines*.

D. Case Study Research Methodology

1. *Purpose of approach/rationale*

The case study method of social science research provides a framework for analysis of contemporary events where the researcher has little or no control over

relevant behaviours (Yin 1994:9). Case study research is particularly applicable to a research question that focuses on “*how*” or “*why*” an event occurred the way it did, allowing the researcher an opportunity to describe events, explore possible paths of inquiry, and explain implications of the event (Id.:4). Research conducted for case studies rely on methods that are mostly descriptive and qualitative in nature and “constitute part of a multifaceted and fluid reality” (Winchester 2005:6). Case studies have the advantage that complex factors that influence the behaviours and attitudes of participants can be documented and analysed from several perspectives. A major strength of the case study research method is the ability to draw from several sources of evidence for its propositions: documentation, archival records, interviews, direct observations, participant –observations, and physical artefacts (Yin:78-80).

Marine reserve designations, being specific to the area designated are unique and have their own particular circumstances. A case study methodology, however, allows a robust discussion of issues encountered and methods used to address them, allowing a generalization of principles from participants’ experiences and providing some basis for planning future designation processes. Thus, a case study methodology is appropriate for this thesis.

2. Case study protocol

a) Overview

The use of the case study method in this thesis endeavours to chronicle marine reserve designation processes used in New Zealand, illustrating examples of stakeholder engagement strategies both from a “top-down” central government driven approach to a “bottom-up” community driven process. The analysis seeks to note specific characteristics of the marine reserve sites designated, and correlate these characteristics with the effectiveness of the respective processes followed in each case. To the extent practicable, the researcher will generalize findings from the designation process in each case to principles for application in other jurisdictions with similar siting characteristics. However, such findings will not attempt to identify “*best practices*” or normative guidelines for future designations so much as they will identify issues and risks for given approaches.

b) Case Study Selection

A comprehensive review of designation processes followed in New Zealand would analyse designation of all reserves. However, with 29 reserves gazetted at the

beginning of this investigation in February 2006 (Enderby and Enderby 2006), a comprehensive review would sacrifice in depth what it gains in breadth.⁵ Thus, in preparation of this research, the author briefly reviewed a general survey of existing marine reserves in order to select which reserve to feature as a case study (**see table 2**).

At first, it is tempting to review the list of marine reserves to choose a reserve most emblematic of the manner in which most reserves are designated in New Zealand. But this quick review reveals that typicality is elusive – each reserve is unique in its makeup in regards to who applied, who the affected community may be, how long the designation process took, size of the area reserved, and other characteristics. For the purpose of this thesis, rather than seek to explore a single designation a selection of two designations as examples from a spectrum of stakeholder engagement strategies provides a better means to address designation processes.

⁵ Note that Enderby and Enderby (2006) refer to more reserves than that listed here. This is because in addition to statutorily acknowledged marine reserves, New Zealand also has protected marine areas that prohibit fishing under specific authority for marine parks. Since this thesis is concerned with designation of marine reserves specifically, it excludes these marine parks from the survey. Note also that at the time of submission of this thesis, several additional reserves have been subsequently added to this count.

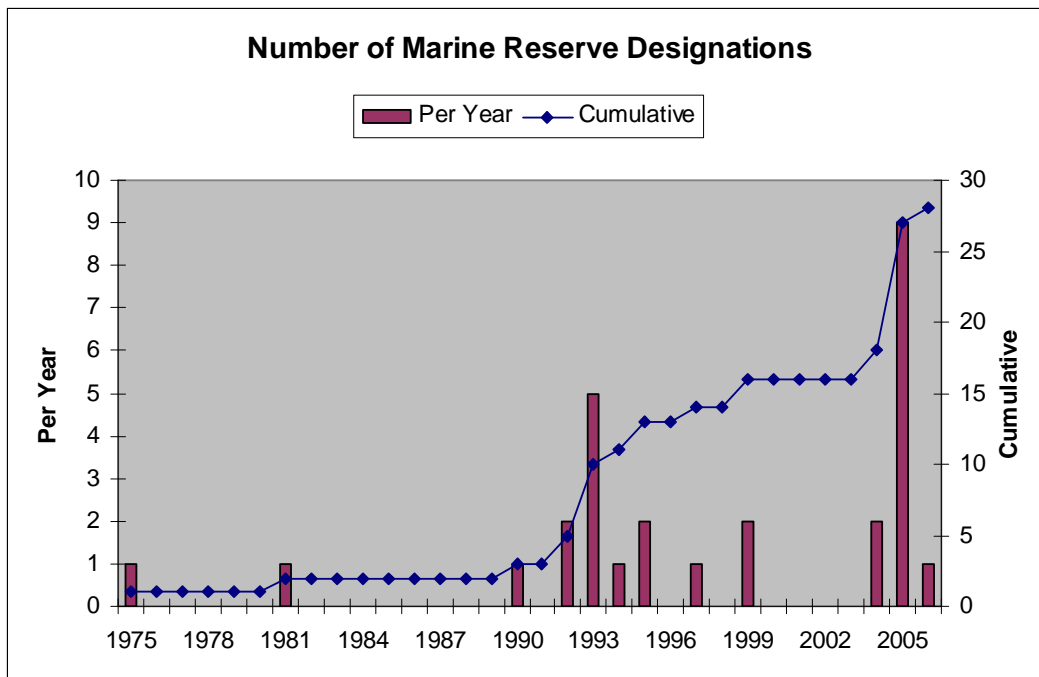
Table 2 – Marine Reserves of New Zealand, as of February 2006
(from Enderby and Enderby 2006)

Name	Year Designated	Area (ha)	Designation Process	Notes
Cape Rodney-Okakiri Point Marine Reserve	1975	518	MRA71	First marine reserve adjacent to the Auckland University Leigh Marine Laboratory, application filed by marine lab scientists for scientific research.
Poor Knights Islands Marine Reserve	1981	2400	MRA71	Second marine reserve, several applications filed by conservation groups and supported by diving enthusiasts. Designation originally allowed sport fishing in ~95% of waters under amendment to MRA71 (since repealed), all fishing prohibited in 1998 after partial ban deemed inadequate protection.
Kermadec Islands Marine Reserve	1990	748000	MRA71	Remote subtropical islands with unique biodiversity and geological features, original application filed by NZ Lands and Survey Department in 1986 and taken over by NZ Department of Conservation in 1987, supported by commercial fishing industry in recognition of unique characteristics and lack of impact on existing fishing operations.
Mayor Island (Tuhua) Marine Reserve	1992	1060	MRA71	Application filed by Tuhua Board of Trustees, representative of local Māori hapu, in response to concern of depletion of marine life.
Kapiti Marine Reserve	1992	2167	MRA71	NZ Department of Conservation application with considerable public support as it connects adjacent terrestrial nature and scientific reserves.
Te Whanganui-a-Hei (Cathedral Cove) Marine Reserve	1993	840	MRA71	Application filed by NZ Department of Conservation after survey indicated support by local iwi and many local residents.
Tonga Island Marine Reserve	1993	1835	MRA71	Application by NZ Department of Conservation in response to concerns of local depletion of marine life.
Long Island-Kokomohua Marine Reserve	1993	619	MRA71	Application by local dive enthusiast clubs, in coordination with the NZ Department of Conservation, to protect recreational values of marine life in the area.
Piopirotahi Marine Reserve	1993	690	MRA71	Application originally proposed by NZ Federation of Commercial Fishermen.
Te Awaatu Channel (The Gut) Marine Reserve	1993	93	MRA71	Application originally proposed by NZ Federation of Commercial Fishermen.
Westhaven (Te Tai Tapu) Marine Reserve	1994	536	MRA71	Original application by NZ Ministry of Agriculture and Fisheries, taken over by NZ Department of Conservation to protect estuarine environment.
Long Bay-Okura Marine Reserve	1995	980	MRA71	Application filed by local committee seeking to protect recreational (snorkelling) activities.
Motu Manawa (Pollen Island) Marine Reserve	1995	500	MRA71	Application filed by Royal Forest and Bird Protection Society to protect a representative inner harbour mangrove habitat.
Te Angiangi Marine Reserve	1997	446	MRA71	Application by NZ Department of Conservation in cooperation with Māori and local landowners, with efforts to avoid impacts on local fisheries.

Name	Year Designated	Area (ha)	Designation Process	Notes
Te Tapuwae o Rongokako Marine Reserve	1999	2452	MRA71	Joint application filed by NZ Department of Conservation and local iwi (Ngati Konohi).
Pohatu (Flea Bay) Marine Reserve	1999	215	MRA71	Application filed by local recreational fishing enthusiasts as alternative to reserves proposed by conservation groups.
Te Wharawhara (Ulva Island) Marine Reserve	2004	1075	MRA71	Originally proposed in 1986 by the Ministry of Agriculture and Fisheries, the NZ Department of Conservation took over in 1987 and coordinated with local stakeholder committee composed of Māori, fishers, tour operators, and residents.
Auckland Islands (Motu Maha) Marine Reserve	2004	498000	MRA71	NZ Department of Conservation application due to island's remote and uninhabited nature and special status of DoC under Resource Management Act.
Fiordland Marine Reserves (total):	2005	9515	legislation	Designated as part of integrated marine management strategy proposed by local stakeholder organization. (Total area on this line, individual contribution below.)
- Te Hapua (Sutherland Sound) Marine Reserve	"	449	"	" " "
- Hawea (Clio Rocks) Marine Reserve	"	411	"	" " "
- Kahukura (Gold Arm) Marine Reserve	"	464	"	" " "
- Kutu Parera (Gaer Arm) Marine Reserve	"	433	"	" " "
- Taipari Roa (Elizabeth Island) Marine Reserve	"	613	"	" " "
- Moana Uta (Wet Jacket Arm) Marine Reserve	"	2007	"	" " "
- Taumoana (Five Fingers Peninsula) Marine Reserve	"	1466	"	" " "
- Te Tapuwae o Hua (Long Sound) Marine Reserve	"	3672	"	" " "
Te Matuku Marine Reserve	2005	690	MRA71	Application filed by Royal Forest and Bird Protection Society after consultation with local iwi and landowners indicated sufficient community support.
Horoirangi Marine Reserve	2006	904	MRA71	Originally proposed in the early-1980's by the Ministry of Agriculture and Fisheries, the designation languished until concerted efforts of local iwi and conservation groups two decades later.

Several things immediately stand out from a review of this list. First, it is apparent that designation of marine reserves has not occurred regularly since the passage of the enabling legislation in 1971. Only two of the 29 reserves were designated in the first half of this thirty-five year period since the passage of the MRA71 (*see figure 5*). Several factors may contribute to this phenomenon, such as a lag time between a commitment to propose a reserve designation and the collection of scientific evidence to support designations and potentially vacillating political support. Research conducted for this thesis does not settle the reason for this delay in designations, and these hypothesized factors remain purely speculative. Nonetheless, designations in more recent years attract attention for selection of a case study, as the numbers alone suggest some effectiveness in the designation process followed.

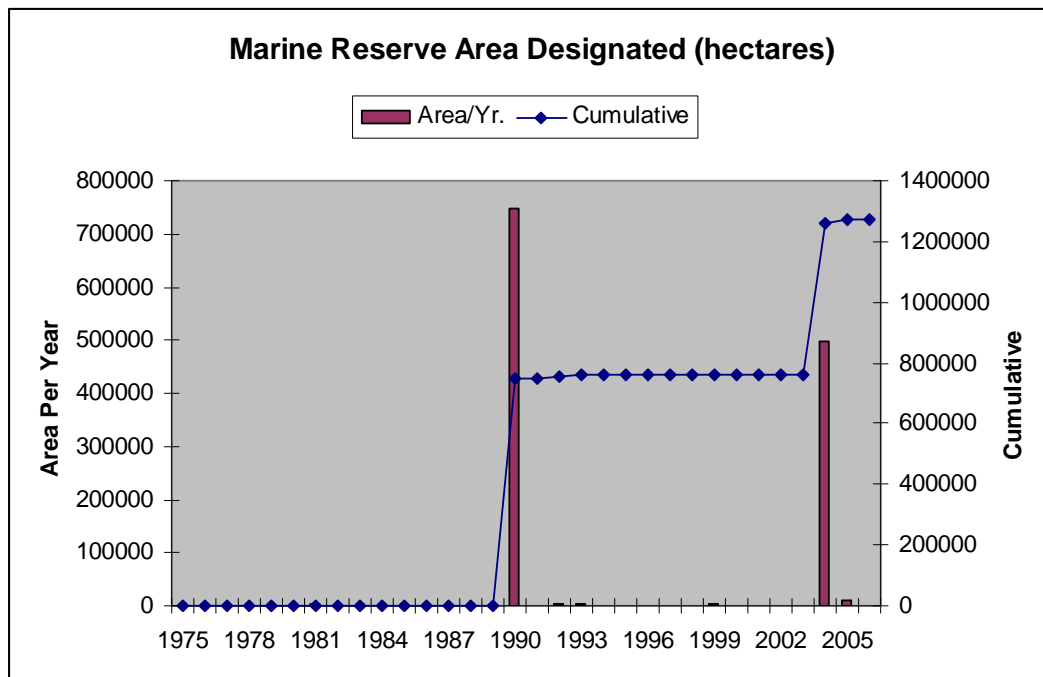
Figure 5 - Absolute Number Marine Reserves Designated, per Year & Cumulative



Second, it is noteworthy that two designations, the Kermadec Islands Marine Reserve and the Auckland Islands (Motu Maha) Marine Reserve account for over 97% of all area under reserve protection (~58.7% and ~39.1%, respectively). The sheer size of the area reserved is striking; however, both reserves share another attribute – remoteness. Waters around the Kermadec Islands, northernmost in New Zealand, have not historically supported commercial operations due to their distance from ports. Waters around the subantarctic Auckland Islands, in contrast, while being remote from population centres does support commercial fisheries for squid and other species and also supports a tourist industry attracted to its marine life. The remoteness of these

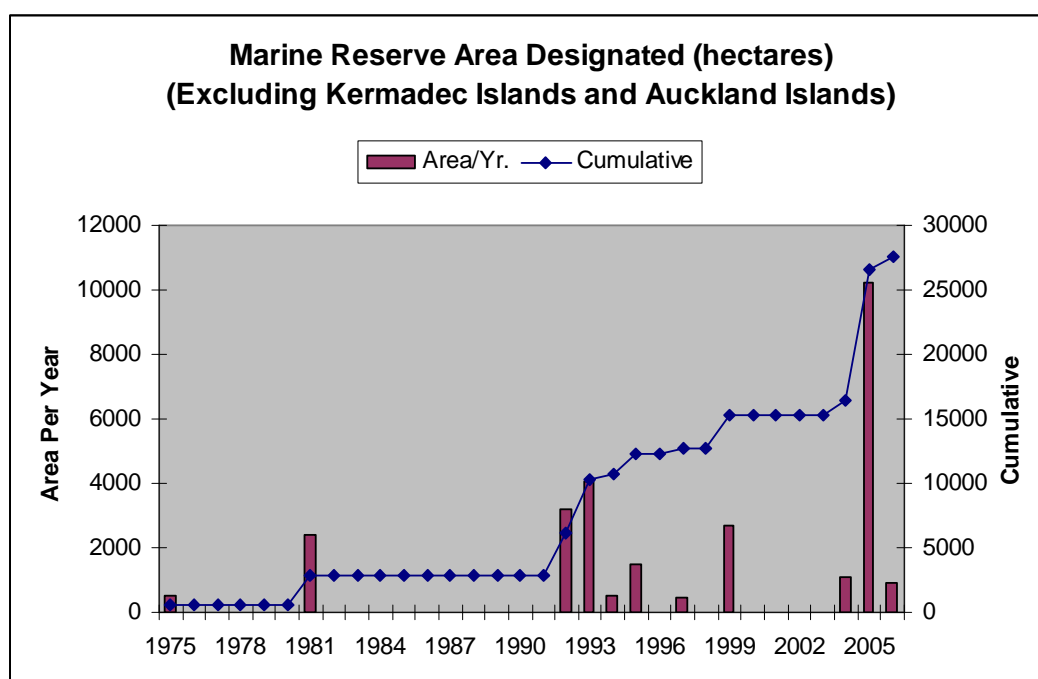
sites has necessarily elevated the role of the government in advancing the designations; both reserves would make strong candidates for a “top-down” example. Analysing trends of size and numbers of representative marine reserve designations proves to be difficult with the Kermadec Islands and Auckland Islands included in the data set because of the scale of these designations dwarf the other reserves (**see figure 6**).

Figure 6 – Area Designated as Marine Reserves, per Year & Cumulative, Total



Thus, additional analysis looks at not only totals of all marine reserves, but also trends with the Kermadec Islands and Auckland Islands reserves excluded as outliers. Exercising this control reveals a third point: that two periods in particular, 1992 to 1995 and 2004 to 2006, show more area designated as reserves than in other periods (**see figure 7**). These “surges” in designation activity deserve more attention.

Figure 7 - Area Designated as Marine Reserve, per Year & Cumulative, Excludes Kermadec Islands and Auckland Islands



Another consideration when reviewing trends in marine reserve is the size of reserves being designated. This characteristic should be taken with a grain of salt, however, because not all marine areas are equal in terms of importance to ecology and protection of representative habitats. Nonetheless, area of protection established can serve as a proxy for commitment to reserve goals of protection. The overall trend shows declining average reserve size following establishment of the Kermadec Islands Marine Reserve (*see figure 8*), but again, this is an artefact of the sheer scale of that designation. Controlling for outliers again, the trend among smaller reserves has been a declining size per reserve designated at the same time as the numbers of reserves designated increases (*see figure 9*).

Figure 8 - Average Marine Reserve Size, per Year & Cumulative Average, Total

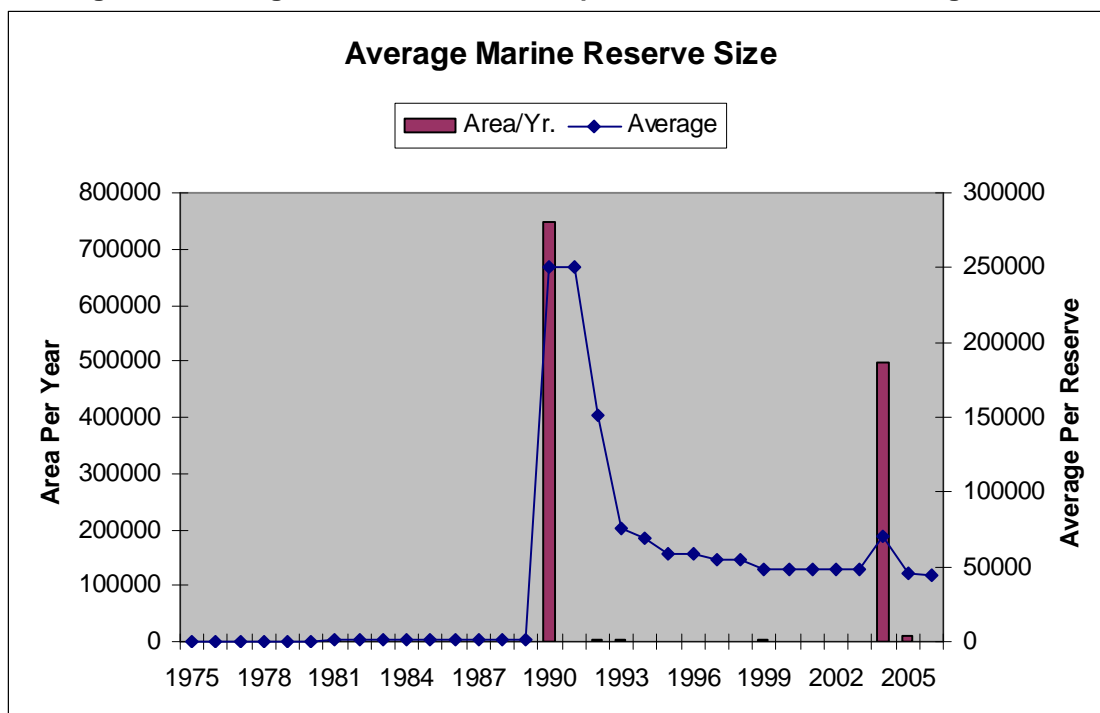
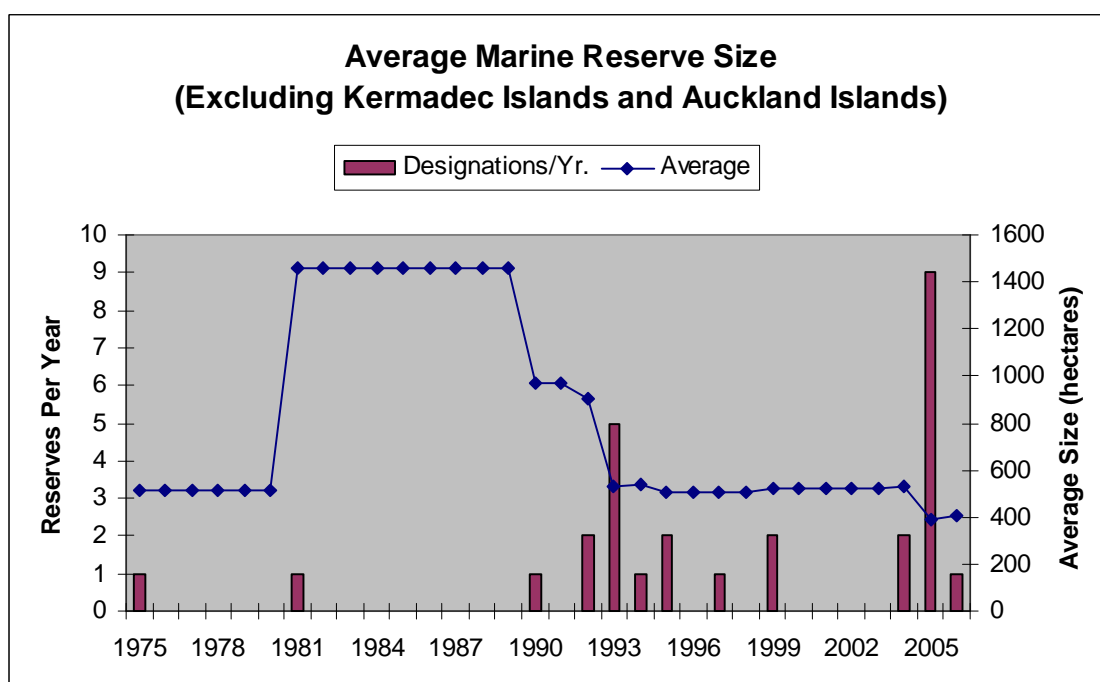


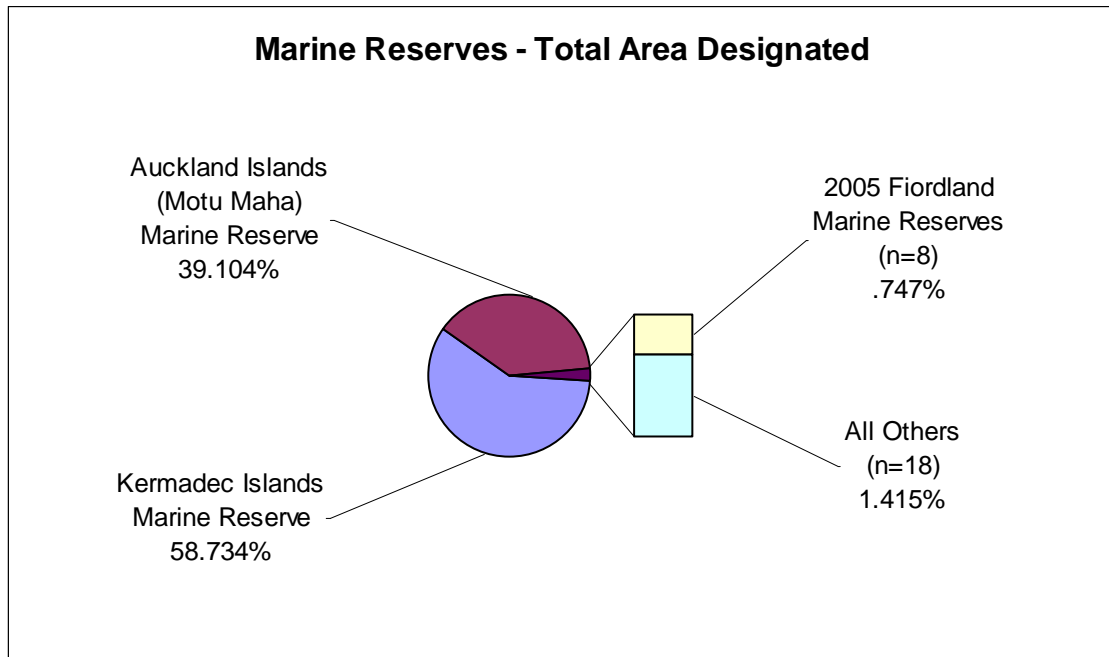
Figure 9- Average Marine Reserve Size, per Year & Cumulative Average, Excludes Kermadec Islands and Auckland Islands



The designations of 2005 stand out in particular: of the nine reserves designated that year, eight were designated together as a network in legislation specific to their purpose. This legislation, the Fiordland (Te Moana o Atawhenua) Marine Management Act of 2005, established over a third of the New Zealand main

coastal area reserved (other than the Kermadec Islands and Auckland Islands reserves) (*see figure 10*). The legislation itself represented the culmination of the work of a local community group in Fiordland over a ten-year process. This development of a proposal of a suite of marine reserves provides a stark contrast to reserves designated under the MRA71 by application of the government.

Figure 10 - Total Area Designated Marine Reserves, as Percentage



Given the purpose of this thesis to illuminate top-down and bottom-up approaches, the two case studies selected should differ along this spectrum. The two case studies best addressing these selection criteria are the Auckland Islands (Motu Maha) Marine Reserve and the Fiordland marine reserves designated in 2005. Neither case is “typical.” The Auckland Islands case demonstrates a “top-down” approach driven primarily from government actors. The Fiordland Marine Reserves exhibit the opposite, a “bottom-up” approach unmatched in all of the other reserves. The two reserve designation processes have additional benefits of being both in the Southland area of New Zealand, with similar demographics allowing for more ready comparisons between the two. The relative recency of the designations also assists the investigation, as it provides easier access to data and memories, as well the likelihood that the designation processes followed have incorporated learning from prior designation efforts.

3. Data collection methods

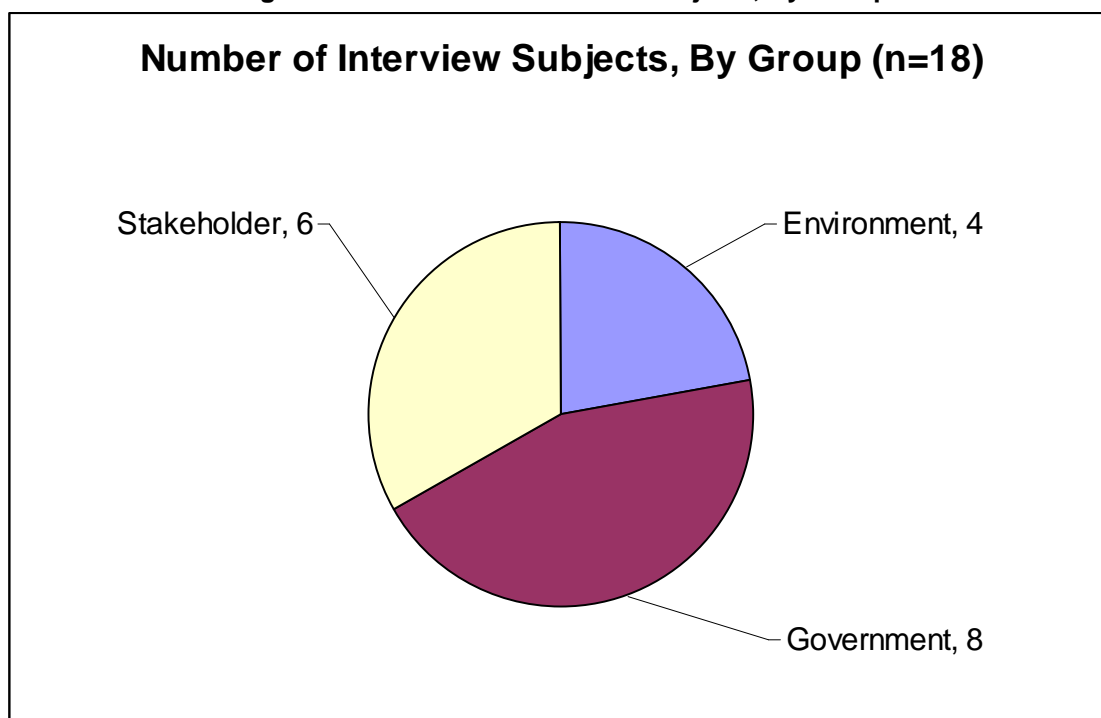
Much of the knowledge required to complete the case studies is available from government records, public documents and contemporaneous reports (i.e. newspaper accounts). Thus, much of the research consists of secondary data, compiled and arranged to tell a history of the implementation processes. Additionally, for the Fiordland marine reserves, several *ex post* analyses assist in describing the events that led to the legislation which effected the designations (Player 2004; McCrone and Challis 2005; Cameron 2006). However, as this investigation focuses on perceptions of affected stakeholders and their reactions to the process followed in achieving these designations, it relies primarily upon data obtained from personal guided interviews independent of these reviews for its analysis. In addition, for the Fiordland marine reserves, the thesis draws from limited participatory research opportunities.

a) Primary research – personal interviews

During the course of study in 2006, the researcher conducted eighteen personal interviews (n=18), grouped in accordance with the modified Shepherd's three-tiered typology as representatives of resource-dependent stakeholders (Tier 1 = “*stakeholders*”), government officials (Tier 2 = “*government*”), and members of the environmental conservation community (Tier 3 = “*environment*”). Formal interviews totalled over 10 hours, bracketed with informal conversation before and after the recorded interviews providing context for the quotes.

Research participants were selected in advance for this ‘theoretical sampling,’ on a targeted basis from leads found by review of the secondary materials; the main criteria used for selection was perceived quality and positionality (Lindsay 1997:59). While this researcher attempted to balance participation from the three groups, members of the government sector proved to be more responsive to interview requests, and members of environmental conservation groups less responsive. A minimum of three interviews in each tier was conducted in order to approach a “point of theoretical saturation,” to provide sufficient input for triangulation of data, and to obscure source of individual views for the purpose promoting candour on the part of interview subjects (**see figure 11**) (Id.).

Figure 11 - Number of Interview Subjects, By Group



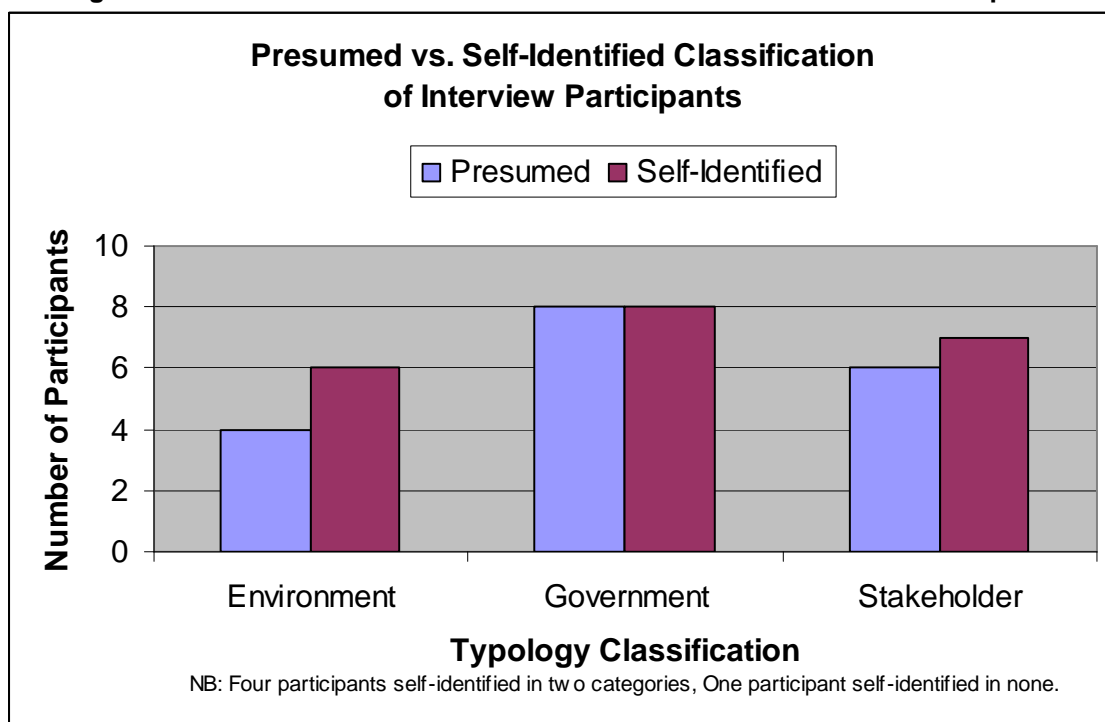
Personal interviews conformed to the Human Ethics Policy adopted by the Victoria University of Wellington (“VUW”), with procedures approved by the Human Ethics Committee (“HEC”) prior to data collection (see *Annex A - Application for Approval for Research Projects as approved by the VUW HEC*). Interview participants were first asked to review and assent to a consent form detailing the scope of their participation and how the data collected would be used (see *Annex B - Participant Information Sheet for Semi-Structured Interviews*). The interviews seek personal reflections and opinions of participants, and as such are kept confidential, with disclosure of resulting quotes attributable only to one of the three groups used in the research typology.

b) Case study questions

Because interviews seek personal insights, they follow an interview guideline rather than using specific listed questions (Dunn 2005:82). To the extent possible, participants were encouraged to express opinions in a narrative, conversational tone, to reduce the risk that specific questions suggest answers. An interview checklist was used to provide structure to the interviews to prompt for comments and subjects not raised by interview participants on their own accord, as a semi-structured interview format (Id.:88).

The interview checklist first asked research participants what sector (*environment, government, or stakeholder,*) the participant identified with. While participants were selected based on the researcher's perception of membership in one of these groups, they were asked this first question as a check on the validity of the researcher's assumptions. As an initial observation, not all subjects agreed with the researcher's presumed classification (**see figure 12**). A likely explanation for this mismatch between expectations and actual data may be poor interview design, in that subjects were not apprised of Shepherd's three-tier typology and may have interpreted the categories differently than the researcher. Nonetheless, some patterns emerged from this disparity, and while the small sample size makes it imprudent to generalize, some speculative inferences will be addressed in subsequent discussion.

Figure 12 - Presumed vs. Self-Identified Classification of Interview Participants



Interviewees were asked to relate their general impressions of the reserve designation process involved in either the Auckland Islands designation process or the designation of the Fiordland marine reserves, or both, depending on their familiarity with each process. Additional questions focused on what the individual considered to be the key characteristics that contributed to the successful designation using the respective process, whether the process adequately addressed issues of concern to the group identified with, whether the process met with expectations at the time, and what expectations they may have for the future for the reserve. In closing, participants

were asked what question they thought should have been asked, and what the answer to that question would be. This last open-ended question allowed participants to offer insights not considered by the researcher when drafting the interview checklist.

c) Participatory observation

The thesis also relies upon first-hand observations of the researcher, in the role of observer-as-participant in relation to the ongoing management of the Fiordland case study (Kearns 2005:196). The researcher was able to observe the workings of the Fiordland Marine Guardians, both in its formal deliberative forum wherein the Guardians discuss ongoing issues affecting the Fiordland Marine Area and its marine reserves and by accompanying an ongoing blue cod stock assessment monitoring charter arranged in coordination with the Guardians. This experiential research informed the understanding of the Guardians' process and the dynamics of the groups involved, but was opportunistic in that the original research proposal did not contemplate its availability in its design. As such, this researcher does not rely on personal conversations for observations that contribute to generalized findings, relying instead on the researcher's own personal observations and impressions gained from public discussions.

E. Scope

1. Limitations of investigation

New Zealand's past includes a wide range of designation attempts, both successful and not, that follow the statutory consultative process required under the MRA71 and other legislative processes. The limitations of time and resources to conduct this study prevent an analysis of all designations. Thus, while a comprehensive review of efforts at designating marine reserves would be valuable, this analysis excludes experiences of the nineteen other successful marine reserve designations, uncounted failed designation attempts under the MRA71, and other legislated marine protected areas such as marine parks.

This investigation is also a historical review, and looks at specific experiences with regard to select designations in the past. As such, the thesis avoids discussion of pending or proposed modifications to marine reserve policies. For instance, in 2002 the New Zealand government introduced a revised Marine Reserves Bill ("Bill") that would dramatically alter designating authority for marine reserves (Marine Reserves Bill 2002). Since the Bill had not proceeded beyond its first reading at the time of

research and thus has no historical application, this paper excludes consideration of the Bill. Likewise, in January 2006, the Department of Conservation and Ministry of Fisheries released its Marine Protected Areas Policy and Implementation Plan (“MPA Policy”) setting forth a consistent process for future establishment of marine protected areas (Marine Protected Areas Policy and Implementation Plan 2005). Since the MPA Policy had not been put in effect and had not yet resulted in any actions from which study participants could derive practical opinions from, this investigation excludes comments or references to the revised plan. The author acknowledges the work done by policy professionals in drafting the new MPA Policy, and by no means should the reader draw any negative inferences from its exclusion here. Rather, the purpose of this exclusion is to confine the study to actual implementation processes, not forward-looking implementation plans. A worthy future endeavour would assess implementation of the new MPA Policy and compare results under its framework with the prior implementations such as those considered here.

As a more significant limitation, the case studies relied upon for analysis in this thesis also largely overlook indigenous consultation, but for gratuitous mention. While this oversight creates a notable gap in the research, it does not imperil the analysis. In both case studies, proponents consulted relevant *iwi* early in the designation process, who supported the designation. The limited time available for data collection reduced the ability to collect data to sufficiently examine this aspect of reserve designations, and is regrettably left to further study in the future. To the extent that Māori-Crown relations are specific to New Zealand, however, this investigation still has value by examining lessons that may be less context-dependent.

III. Survey of Marine Reserve Literature

A. Problems with marine ecosystems

Humans have an intimate relationship with marine ecosystems, with over half of the world's populations estimated to live within 100 kilometres of the coast (Vitousek et al. 1997:495). The sea provides vital services to humanity, sustaining populations through inexpensive and plentiful protein provided through its fisheries, opportunities for recreational benefits and tourism, and employment related to these benefits, in addition to other ecosystem goods and services (UNEP 2006:30-33).

But this relationship comes at a cost, as increasing populations and their attendant demands strain coastal ecosystems (Vitousek et al. 1997:495). Many fish stocks suffer from overexploitation or depletion due to excessive pressure in the fisheries (FAO 2007:7). In many cases, the complexity of understanding fishery dynamics is such that managers have difficulty establishing regulatory constraints, much less monitoring and enforcing limits to achieve sustainable outcomes (Wilder, Tegner, and Dayton 1999). Humanity's alteration of the marine environment over time affects the viability of the ecosystem as well (Jackson 2001:5415). Fishing practices that affect the seabed, such as bottom trawling, can disturb essential habitats and affect ecosystem health (Watling and Norse 1998; Levy 1998:40; Chivers 2000:49). In some cases, impacts to the biotic community may cause damage irreversible within a human life span, such as in the case of coral destruction from trawling or other destructive fishing practices (Halpern et al. 2007:1309).

Threats to the marine environment come not only from exploitation of its resources, but also from degradation caused from other activities (Sobel 1993:21). Increased coastal populations result in other threats to marine ecosystems as well, with coastal land development, organic pollution, sediment loads from surface water runoff, hypoxia (also known as "dead zones"), and other direct human impacts ranking among the most pressing threats (Halpern et al. 2007:1309). Introduction of foreign plants and animals by human vectors threaten ecosystem health as well; for instance, carnivorous animals carried in ship's ballast water or noxious weeds transported by fouled hulls can wreak havoc in areas where the plant and animal life have not evolved to co-exist with these competitors (Bax et al. 2001:1235).

Many of the regulatory responses to these perceived negative impacts constrain users, limiting the ability of coastal residents to diversify their livelihood

strategies and harming the resiliency of communities to respond to declining ecosystem health. Compounding the situation, rarely does any one organisation or regulatory agency have responsibility for management and protection of marine ecosystems, complicating efforts to prevent distress. What regulators need is a coordinated means to address adverse ocean and coastal impacts while meeting the needs of affected communities.

B. One proposed solution: marine reserves

1. Marine reserves: what are they?

One way to minimize impacts on marine space induced by extractive activities of humans is to make areas of the sea “off-limits” to these activities through spatially explicit protected zones. The International Union for the Conservation of Nature and Natural Resources (“World Conservation Union” or “IUCN”) calls spatially explicit management measures such as these “*marine protected areas*” (“MPAs”). Under the IUCN definition, MPAs are “any area of intertidal or subtidal terrain, together with its overlying waters and associated flora, fauna, historical and cultural features, which has been reserved by legislation or other effective means to protect part or all of the enclosed environment” (Kelleher 1999:xviii).

MPAs protect marine areas in much the same way reserves on land protect terrestrial environments, restricting the uses allowed to those that minimize adverse consequences. The IUCN divides protected areas on land into six different types, with descending levels of protection (IUCN 1994). Under the descending IUCN classification system, areas with the most stringent protection such as strict nature reserves and wilderness areas (Category I) or national parks (Category II) are at one end of the spectrum, areas managed for conservation (Categories II, IV, and V) and sustainable use of natural resources (Category VI) at the other end (Id.). Just as protected areas on land have a wide variety of restrictive attributes, MPAs can have a range of protective levels of their own, and the IUCN taxonomy has been applied to MPAs as well (Kelleher and Recchia 1998). At the more restrictive end of the spectrum, areas preserved primarily for scientific study or wilderness protection (Category I) and areas managed for ecosystem protection which exclude exploitative use (Category II) are commonly known as *marine reserves* (Id.).

The idea of closing areas of the sea from harvest is not new, Pacific Island cultures have adopted similar methods of effecting conservation of fishery resources for the last millennia, with marine tenure systems and the practice of “taboo” restricting

access (Johannes 1978:352). However, Western cultures long eschewed such an approach, advancing its own notion of the “freedom of the seas” that treated marine space as a commons, open to all and largely uninhibited (Grotius 2001). After centuries of open access, ecosystems began to show signs of strain, leading critics to decry this attitude as a “tragedy of the commons” destined to imperil the health of the resource (Gordon 1954; Hardin 1968:1245). Today, there exists a growing awareness among policy makers of the role of marine reserves, and a broad consensus among scientists on the conservation rationale for the establishment of marine reserves to protect marine ecosystems (Lubchenco, Palumbi, and Gaines 2001:3).

Marine reserve researchers point to several benefits. Since marine reserves prohibit fishing, the designation spares habitat within the reserve from damage that occurs with fishing methods such as trawling as well as preventing the catch of both commercially targeted and non-target fish (Hilborn et al. 2004:200). Reserves benefit fisheries outside the reserve because of “spillover” effects when larger mature fish swim outside the boundaries of the reserve (Gell and Roberts 2003:1922; Roberts et al. 2001). Fisheries also benefit from the reserve as a nursery, as undisturbed reproduction of large fish contribute to fish stocks outside the reserve through larval dispersal transported on marine currents (Hasting and Botsford 1999; Palumbi 2002:27-28). Marine reserves also contribute to expanding knowledge of how marine ecosystems work, by providing reference areas for ecological research as a benchmark to study human-induced impacts in areas outside the reserves (Hilborn et al. 2004:201). By providing refuge from human extraction, marine reserves provide for the conservation of biodiversity, preserving natural and genetic resources for the future, both for normative reasons and in recognition of legal obligations (Weeber 1998:164-165). Leaving fish in the sea in undisturbed habitats contributes to the interactions of the food web and a robust ecosystem functions, leading some to call marine reserves “the highest form of protection” for marine resources (Lang 2006).

Despite these benefits of marine reserves, however, they are not a panacea and have their limitations. First, marine reserves only address extractive activities, and thus do not correct for other pressures such as impacts from adjacent terrestrial activities, pollution, excessive visitation, invasive species, etc. Marine reserves may not be sufficient to protect fish species with a large migratory range unless they are so large as to significantly reduce fishing impacts on the stock (Bohnsack 1993:70), which may be infeasible in the case of fish resources that transcend international boundaries such as tuna and salmon. Nor may marine reserves be effective protection for an ecosystem if natural or invasive predators proliferate in the reserve (Simberloff

2000:570-571; Byers 2005:487-488). Marine reserves must also have effective monitoring and enforcement to achieve its goals; otherwise it becomes little more than a “paper park,” with protection shown only as lines on a chart rather than in actual practice (Kelleher 1999:xxii).

Marine reserves have consequences for communities dependent upon the resources, such as the fishing community, as well. Excluded from historic fishing grounds, fishers lose income opportunities; as fishers relocate they encounter increased costs from having to travel further distances and from searching out new fishing grounds (assuming they are available), and fish stocks outside the reserve may come under additional stress from this displacement (Shipp 2003). Under such real effects imposed by a marine reserve designation, monitoring, enforcement, and educational outreach becomes of paramount importance, all programs that also come at a cost. Some observers suggest that benefits of a proposed reserve may offset these costs (Dixon 1993:35), but even if they do, the adoption of a marine reserve and the attendant costs is a matter of social choice that affects the “way of life” in the community.

C. Marine Reserve Literature

As noted above, there has been an explosion of interest in marine reserves in recent years, both in the fields of scientific research and in policy development. A wide body of research literature assesses the effectiveness of reserves from a biological and ecological perspective, quantifying the effects of protection against extraction. Much of this writing is in an effort to build the case for more widespread adoption of marine reserves as a conservation and management tool. Often, however, designations of marine reserves falter not due to inadequacies of the conservation science supporting the designations, but rather due to inadequate recognition of societal impacts of the designation (Kelleher 1999:21). As academics and marine reserve proponents alike have noticed this, the literature shows increasing attention to socioeconomic factors or “human dimensions” of marine reserves (Mascia 2003:631).

This thesis reviews the literature relevant to marine reserves (and MPAs, where this overlaps,) in two parts. First, the literature review cursorily surveys the ecological literature in order to provide the reader a general overview of concepts that policy makers frequently rely upon when making new reserve designations. Second, the literature review looks more critically at surveys that both chronicle and advocate for reserve designations, with particular attention given to designation processes,

socioeconomic concerns, and efforts to engage communities in the designation of marine reserves.

1. Historical support for marine reserves

Traditional reserves in Oceania predate European colonialism, with Johannes' aforementioned marine tenure and taboo systems (Johannes 1978); in New Zealand, pre-colonial Māori exercised similar spatially explicit marine protection systems, including reserve-like closures through long-term *tapu* areas, and temporary *rahui* which prohibited the taking of fish from designated areas (Wickliffe 1995:81)⁶. Scientific fishery management considered closures only more recently, and while managers commonly use temporary closures, the first consideration of absolute closures in the scientific literature was in Beverton and Holt's *On the Dynamics of Exploited Fish Populations* (Beverton and Holt 1957; Guénette, Lauck, and Clark 1998). In that work, the authors focused on the modelled ability of reserves' (they use the term "refuges") to promote fishery yields, and did not recommend their use because the model suggested it would be difficult to implement and would impose unnecessary costs imposed upon fishers.

New Zealand scientists had a different idea – rather than make recommendations based on models, they pushed for legal authority to implement marine reserves in order to study the actual effects. These efforts resulted in the Marine Reserves Act of 1971 ("MRA71"), legislation which provides the framework for marine reserve designation in New Zealand for the purposes of scientific study (*Marine Reserves Act* 1971; Guénette, Lauck, and Clark 1998). The MRA71 came about because of intense lobbying from one of its most staunch supporters, Dr. Bill Ballantine of the University of Auckland's Leigh Marine Laboratory, in order to support its push for a controlled marine area in front of its lab (Ballantine 1991, Walls 1998b). Because of this focus, the MRA71 was written narrowly "for the scientific study of marine life," rather than for fishery management or conservation goals (MRA71: Section 3[1]).

2. Biological and ecological studies

Study of marine reserves started showing up in the literature in 1990, with results from studies in the Philippines (Alcala and Russ 1990) as well as contributions to the theory of marine reserves (Polacheck 1990). Ballantine added his survey of the

⁶ Translations of Māori terms used in this thesis may be found in Annex C. *Te Reo: Glossary of Māori terms used.*

experience in New Zealand the following year (1991). In the next fifteen years, the amount of academic attention and research effort focused on the efficacy of marine reserves and MPAs in general blossomed to support the publication of several comprehensive surveys of the field, including Agardy (1997), Guénette et al. (1998), National Research Council (NRC 2001), Ward et al. (2001), Roberts and Hawkins (2000), and Sobel and Dahlgren (2004), among others.

Using mathematical modelling, Polacheck (1990) notes several possible advantages to effective reserves. A primary advantage is the contribution to fishery management – by protecting some of fish stocks from fishing, reserves can increase the amount of the spawning biomass without necessarily requiring reductions in fishing effort (merely redistributing it instead). This effect varies, depending on the growth and maturity rates and mobility of the fish species protected, but helps to slow overall declines in the fishery. Polacheck also suggests that “the institution of a closed area may be politically and socially more acceptable than direct controls” on the fishery, although he does not offer support for this and concedes that “any new regulation which effectively delays catches can be expected to encounter opposition” (Id.:350).

Alcala and Russ (1990) collected data from actual experience of a ten-year closure to protect a reef in the Philippines; in general, they conclude that fish abundance and fishery yields both decline after the closure ended. This approach of seeking out empirical data to test the effects of marine protected areas marked the beginning of a trend seen in the literature as researchers pursued empirical data, to offer a broad panoply of recommendations for reserve siting, design, and establishment in series or networks (Murray et al. 1999; Sala et al. 2002; Aíramé et al. 2003; Botsford, Micheli, and Hastings 2003; Carr et al. 2003; Halpern 2003; Lubchenco et al. 2003; Palumbi 2003; Roberts et al. 2003a; Roberts et al. 2003b; Shanks, Grantham, and Carr 2003; Halpern et al. 2006 and others). What is notable about these contributions to marine reserve literature, however, is the narrow focus specific to biology or ecology of reserves and the general exclusion of other community or societal values.

3. Beyond objectivity – marine reserve advocacy and practice

a) Marine Reserves for New Zealand – Ballantine 1991

In marked contrast to the approach of scientists that merely focus on biological and ecological merits of reserves and reserve networks, Ballantine advances what

amounts to advocacy for the designation of marine reserves as a moral imperative, echoing Hardin's plea against unconstrained freedom of the commons (Ballantine 1991:39). Drawing on experiences at the Leigh Marine Reserve, Ballantine supports the *raison d'être* for marine areas based on not only their fishery management benefits, but also on increased recreational opportunities and the ability to conduct scientific research (Id.:47). Ballantine announces a goal of ten percent of all waters designated as reserves, but acknowledges that this as a "rallying cry" instead of a scientifically derived number (Id.:44). Rather than recommending a process for addressing community concerns in the designation of reserves, Ballantine advocates persuasion to overcome objections to achieve this predetermined goal (Id.:129-141). While full of supportive information, Ballantine's work marks a shift in the literature – rather than dispassionate science pressed into mundane service of existing interests (i.e. fishers, and fishery managers), his is an acknowledged impassioned plea for marine reserves for their own sake and the sake of conservation independent of other interests. The competing biases of proponents and dispassionate observers are evident throughout the succeeding literature, setting the stage for controversy in designations of new reserves.

b) Marine Protected Areas and Ocean Conservation – Agardy 1997

Several surveys of marine reserves and MPAs follow Ballantine's lead, focused on promotion of reserves. Agardy (1997) provided the first comprehensive overview of the role MPAs can play in advancing marine conservation goals. Starting with a review of marine ecology and the importance of ecosystem health and marine biodiversity, Agardy then methodically lays out threats to marine ecosystems and evaluates a wide range of management responses to counter those threats before zeroing in on the benefits of MPAs as a preferred management tool. Agardy establishes a typology of MPAs, tying this taxonomy to the IUCN's classification scheme for reserves, and including marine reserves as the most protective category (Id.:99-101). Agardy continues by offering guidelines for other advocates to promote MPAs on their own, following a prescribed formula.

Agardy's methodology recommends three-part inquiry – what, where, and how – to identify appropriate MPA sites (Id.:184). The first question of ecological investigation ("*What are the main marine conservation issues that can and should be addressed through marine protected areas?*") skews the inquiry in favour of MPAs; if

the only tool in the toolbox is a hammer, every problem starts to look like a nail⁷. The second question of resource use and impacts considers siting specifics to best respond to perceived threats. The third question, characterized as “opportunity for success,” focuses on designation and how scientific, political, and sociological techniques can be used to facilitate implementation. Unfortunately, while this methodology acknowledges the importance social and political factors have in the siting of reserves, it neglects to offer any real guidance on how to engage affected communities to create these opportunities, glossing the question over as “one that should be answered on a case-by-case basis in the regions” (Id.).

c) *Guidelines for Establishing Marine Protected Areas – Kelleher 1999*

Kelleher (1999) steps into this breach, offering practical guidance for how managers can address each case in the IUCN *Guidelines for Marine Protected Areas* (“*Guidelines*”). This work, consistent with the charter of the IUCN World Commission on Protected Areas, begins with the presumption that protected areas are desirable from a policy perspective. Thus, the *Guidelines* focuses entirely on practical descriptions of how to go about designating MPAs, and largely sidesteps normative questions of whether reserves are the appropriate management action or not, but for a gratuitous mention in its introduction.

If Agardy advocates MPAs as the tool, the *Guidelines* serve as the owner’s manual to that tool. Rather than fulfilling an advocacy role, the *Guidelines* offer pragmatic advice for managers on considering the broader management context within which MPAs fit and developing legal frameworks to assist in their designations. The book stresses the importance of working with relevant sectors, and suggests creating partnerships with community interests and stakeholders, in some cases urging cooperative management arrangements. The remainder of the book continues its pragmatic focus with chapters on selecting MPA sites, planning and managing MPAs, zoning multiple use management regimes, financial considerations, and provisions for adaptive management (Id.).

The *Guidelines* offers more robust suggestions for how to address concerns of various sectors and ways to involve stakeholders in decision-making process for establishing MPAs. In keeping with its pragmatic tone, it acknowledges the reason for doing so is a recognition from experience that the “fundamental criterion for success is

⁷ To be fair, Agardy backs off this monomania in later work, cautioning that “blanket assignment and advocacy of empirically unsubstantiated rules of thumb in marine protection provides dangerous targets for conservation science and may inflate expectations of end results, risking abandonment of MPAs by decision-makers as a management tool that was tried and failed” (Agardy et al. 2003:363).

to bring in from the beginning every significant sector that will affect, or be affected by, the MPA” (Kelleher 1999:21). The guide does not define “success,” but presumably, given the premise that MPAs are desirable, success means actual designation of the proposed MPA under consideration. The *Guidelines* state that first priority should be given to fisheries as the sector most commonly affected and most vocal in opposition, but also suggests a local-based tourism sector can counter this opposition (Id.:22-23). The *Guidelines* recommend including a wide range of stakeholders, including not only fishers but also representatives of other ocean dependent industries, noting other causes of harm to marine ecosystems besides fishing, such as tourism impacts, accidental groundings, mining and pollution (Id.:26).

The *Guidelines* also suggest ways managers can engage these communities once identified (Id.:29-35). This section first acknowledges the difficulty of selecting representatives of the various sectors, expressing the hope that representatives will evolve over time as people organize into groups, make claims, legitimize those claims, and “negotiate a fair share of the rights and responsibilities involved” (Id.:30). This scenario is admittedly idealistic, and the author cautions that it may not work in situations where groups have different levels of political power or where democracy is suppressed (Id.). Regrettably, the *Guidelines* offer no alternative to the ideal. Second, the section advises that managers choose whether to embrace a management regime that favours “strong management involvement of local people (‘bottom-up’)” or “government-driven (‘top-down’)” (Id.:31). The choice is not absolute, there will likely be a range of choices available to the manager, with a spectrum of potential partnerships available (Id.). Finally, Kelleher offers a refreshing respite from the appeals made by Agardy; by taking for granted that the audience for which the *Guidelines* were prepared already accepts the desirability of MPAs, the editor spares the reader the bully pulpit treatment.

d) *Fully-Protected Marine Reserves: A Guide – Roberts and Hawkins*

2000

Roberts and Hawkins (2000) continue in a similar advocacy vein as Agardy, however, focused more strictly on “fully-protected marine reserves” as a preferred antidote for threats facing marine ecosystems. Roberts and Hawkins start by conclusively asserting that reserves protected from fishing should be established, and castigate fisheries with effusive pejorative language, likening commercial fishing methods to clear-cutting forests to catch a deer (Id.:9). Despite this early declaration of bias favouring conservation over utilization, the authors admirably summarize the

state of science regarding reserves, including descriptions of population recovery benefits, “spillover” effects, and increased recruitment. Rebuttals to potential criticisms follow, answering questions such as reserves’ suitability for highly migratory stocks, and what to make of delays in expected benefits.

Having dispatched with critics, Roberts and Hawkins devote the rest of their manifesto to recommendations of how to put marine reserves in place. The authors improve upon Agardy’s polemic, with well-documented suggestions that range from management of reserves once established (monitoring, assessment, and enforcement) to the management of political processes during implementation (Id.:75-84). The latter seeks to address the shortcoming in Agardy’s work, acknowledging the need pointed to in the *Guidelines* for community involvement in reserve design in order for the reserves to be respected. Roberts and Hawkins promote not only addressing the same wide range of stakeholders as in the *Guidelines*, but also suggest that others whose interests are more intangible, including aesthetic and existence values, should be represented in “participatory management groups” tasked with designation or the question of whether reserves should be designated at all (ironically contradicting the authors’ own predetermination of the need to designate reserves!) (Id.:76). However, the authors fall short of offering suggestions for identifying whom these relevant stakeholders may be in a given situation, and how to weigh their respective competing interests.

Roberts and Hawkins acknowledge that user groups, whether dependent on the resource for subsistence or to meet obligations of existing investments, may suffer hardships from the imposition of reserves while they wait for promised benefits to materialize (Id.:37). Particularly in the case of marginal fisheries, reserves may drive participants to the point of failure, and the authors recommend judicious compensation either distributed directly as a transition strategy (presuming improved fisheries in the future), or as exit payments coupled with retraining and relocation assistance (Id.:38). Such recommendations, while on the surface appearing to show sensitivity to dependent communities, belies a patronizing attitude that runs roughshod over values such as cultural heritage, marine tenure systems, and independence. This perspective seems largely out of sync with that found in remote place-centred fishing communities dependent upon a fickle Mother Nature and the community structures adapted to the setting, and echoes the long recognized paternalism of the developed countries towards the “Global South” noted by Chambers (Chambers 1983). The survey would be improved by the contributions of a cultural anthropologist to supplement the views of Northern conservation biologists.

*e) Marine Protected Areas: Tools for Sustaining Ocean Ecosystems –
National Research Council 2001*

The following year, the National Research Council (“NRC”) released its more ambitious review of the status of marine protected areas and marine reserves (2001). This effort makes similar recommendations for reserve design and management as found in the *Guidelines* and in Roberts and Hawkins, relying on the same body of scientific research (note that Roberts is a significant contributor). However, the NRC takes a more interdisciplinary approach and *does* include anthropologists, as well as political scientists, fishery managers, and practitioners along with the academic conservationists on the research committee.

Instead of decreeing benefits of reserves up front, the NRC details conservation goals of marine reserves, contrasting them to problems from conventional fishery management measures in order to illustrate reserves’ usefulness (Id.:30-40). This acknowledges the necessary role of fisheries to coastal communities, situating the designation of reserves in a context that values rather than dismisses the needs of user groups. From this basis, the NRC discusses costs and benefits of reserve designation, assessing values of the resources to all stakeholders and recognizing that user groups may be disproportionately affected (Id.:42-66). While noting that non-market values need to be included in cost-benefit analyses, it is not to be at the exclusion of consumptive uses (Id.:47). Attention is given to involvement of affected communities and the creation of economic incentives to establish community buy-in to the designation process (Id.:60-63).

The NRC conclusions do not substantively differ from Roberts and Hawkins; both endorse reserves for ecosystem-based management. However, the NRC differs in the details, valuing reserves’ ability to mitigate inherent uncertainty in fisheries management and emphasizing that siting requires sensitivity to human needs. Additionally, the NRC emphasizes the importance of institutional support for marine reserves, taking nothing for granted.

*f) Marine Reserves: A Guide to Science, Design, and Use – Sobel and
Dahlgren 2004*

While the surveys of the field by Agardy, Roberts and Hawkins, and the NRC serve as signposts indicating growing interest in development of marine reserves, Jack Sobel and Craig Dahlgren add their review incorporating the new learning from additional resources focused on reserve implementation and study (Sobel and

Dahlgren 2004). Like Roberts and Hawkins, this duo comes from a conservationist background, both having been active with the Center for Marine Conservation, a United States non-governmental organisation (NGO) since renamed “The Ocean Conservancy.” However, unlike Roberts and Hawkins’ work, Sobel and Dahlgren’s tome takes an approach more encompassing of societal impacts. Largely, this expansion is developed through contributors well versed in social sciences and policy analysis.

The greatest contribution in Sobel and Dahlgren’s review is Michael Mascia’s chapter crediting social factors as a more important determinant to successful marine reserve implementation than the biological factors the focus of prior attention (Mascia 2004). Marine reserves are human conventions, establishing rules for how people interact with the marine environment, and thus, an understanding of human behaviour is vital to successful design. Mascia suggests a framework taxonomy for rules governing marine reserves: rules for designation, rules for allowed or prohibited activities, rules for reserve management, and rules for settling disputes (Id.:166). Such rules are based on underlying beliefs and value systems, guidelines for implementing reserves that fail to take into account differing beliefs and values risk not performing to expectations. To accommodate variability, Mascia argues that resource users should be included in the process of designation and management, rules adopted should be clear and fit the local context, management measures (including enforcement) should be both accountable and fair, and conflict resolution systems should be put in place to deal with inevitable conflicts in the process. Mascia’s recommendations reflect a concern for equity among resource user groups and their cultural values, incorporating more concern for community participation than the top-down recommendations put forth by Roberts and Hawkins, and describing how to address socioeconomic concerns more clearly than the NRC report. Unfortunately, the chapter bemoans a paucity of research in the area pointing to successful examples, and thus such recommendations remain theoretical for now.

g) Discussion of marine reserve surveys

The forgoing is not to say that there are no case studies to review, quite the contrary – all of these books rely heavily on marine reserve implementation examples. Roberts and Hawkins enthusiastically describe no fewer than thirteen examples from around the globe. The NRC more conservatively employs four case studies to illustrate discrete issues identified, and Agardy includes two. The *Guidelines* references several designation processes as examples throughout the work, but does

not isolate any as case studies. Sobel and Dahlgren chronicle designation processes and management issues thoroughly in three extensive case studies, and include a brief “global overview” of other locations, most notably Australia and New Zealand (also highlighted by both Roberts and Hawkins and Ballantine).

The experience of New Zealand and Ballantine’s influence on the global debate bears special discussion. Roberts and Hawkins note the decade-long process of designating the Leigh Marine Reserve in 1977 previously chronicled in Ballantine (1991:21-31) and Walls (1998b), concluding much as Ballantine and Walls did that although public education campaigns may be insufficient to counter public doubts, eventually everyone will support reserves once they are in place and they see how great they are. Sobel and Dahlgren are nowhere near as Pollyanna-ish, but make their own sweeping generalizations about New Zealand’s lessons, including the unilateral declaration that a minimum of ten percent of New Zealand waters should be made reserves, and that the public should be involved in designation and management, (also citing Ballantine 1991). The NRC report notes Ballantine’s appeal for ten percent, but acknowledges that it is a “call to arms for conservation rather than being scientifically based” (2001:247).

Both Roberts and Hawkins and Sobel and Dahlgren praise Ballantine for being a “tireless” and “most influential” campaigner for marine reserves (Roberts and Hawkins 2000:113; Sobel and Dahlgren 2004:317), but his ten percent goal has yet to be approached in New Zealand. This is not surprising in a country with significant community interests in marine space, including both commercial and recreational fishers as well as a sizable indigenous population with its own marine tenure customs, not addressed in the surveys here. Mascia’s propositions and the *Guidelines* both suggest that rather than extolling the virtues of arbitrary champions, a more integrationist approach that takes into account various stakeholders’ resource uses, beliefs, and values may be more effective at getting reserves in place. A more useful case study of New Zealand’s experience with marine reserves would examine marine reserve applications since Leigh Marine Reserve, both those that have been successful and those that have failed, and see whether such local concerns were addressed and what effect stakeholder engagement has on implementation and the communities affected by the implementation.

D. Lacunae – between advocates and practitioners

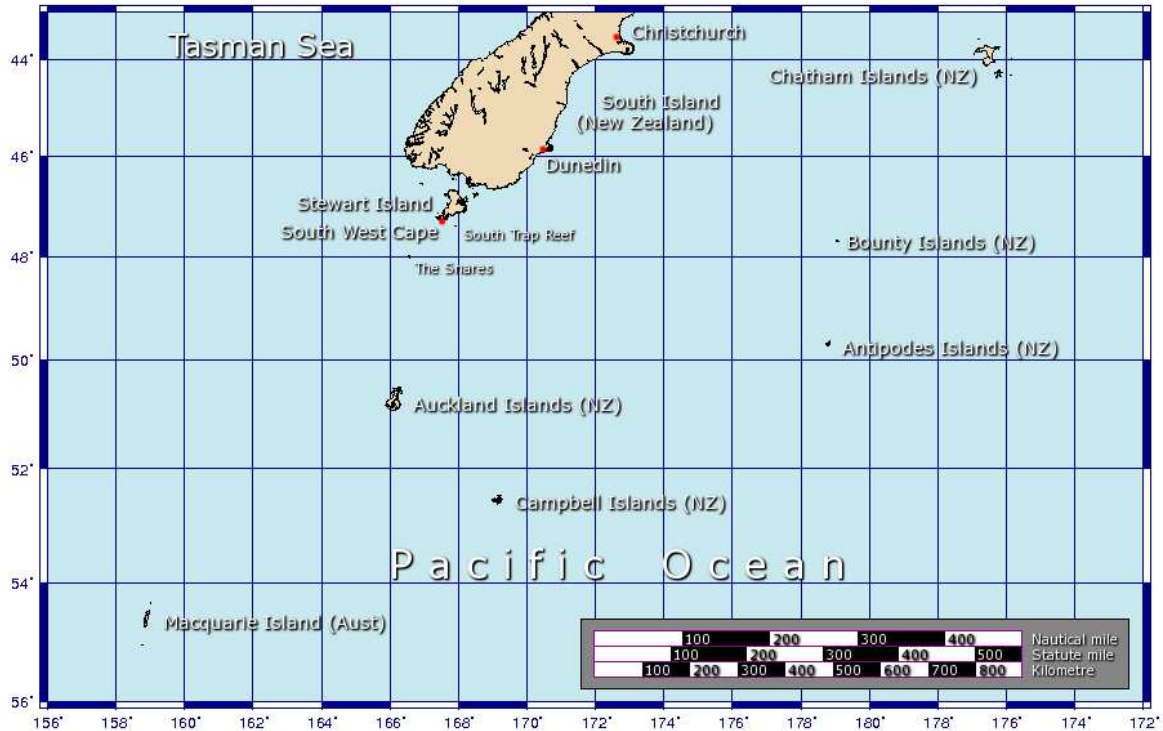
Ballantine advocates persuasion (1991:129); Agardy recommends the pursuit of “opportunity” (1997:184); Roberts and Hawkins promote participatory designation but neglect details of who should participate and how (2000:75-77). The NRC gives more weight to the types of interests to be included in participatory structures without suggesting how to do so (2001:70); the *Guidelines* offer a “how-to” guide but falls short (Kelleher 1999); and Mascia suggests a direction but looks for more real-world examples of how it could be done (2004:184). What is largely missing from the literature is a recommendation for how stakeholders should be identified and how consultation with them should take place.

For possible answers to this gap, this thesis looks outside the literature on marine reserves and MPAs to examples in other contexts. Balancing management objectives with stakeholder concerns is a frequent theme encountered in terrestrial conservation and in the management disciplines. From the terrestrial conservation context, this thesis applies a practical framework for ecosystem management and stakeholder assessment developed by the World Conservation Union to assist decision makers to protect values of biodiversity in areas where multiple resource users and high natural values coexist. From the management disciplines, this thesis considers methods developed for assessing stakeholders in the context of the Corporate Social Responsibility movement to weight the various stakeholders in the process. The thesis concludes with a rudimentary model that managers can use in conjunction with the *Guidelines* as a heuristic for assessing the management choice between top-down and bottom-up approaches for marine reserve designations.

IV. Ends of the Spectrum: Top-Down and Bottom-Up

A. Auckland Islands Marine Reserve

Figure 13 - Indicative Map Portraying New Zealand's Subantarctic Islands



Source: Wikimedia Commons (<http://commons.wikimedia.org/wiki/Image:NZOffshoreIslandsMap.png>),
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1. The Auckland Islands – Overview

The Auckland Islands are a small archipelago approximately 460 km south of the South Island of New Zealand. The island group sits on the western edge of the broad Campbell Plateau, a relatively shallow undersea area in New Zealand's Southern Sea. The land itself is uninhabited by humans, and has been for most of its history.

The islands themselves are uninhabited but notorious for visits when shipwrecked sailors made it their home, as for example, hapless survivors of the wrecks *Invercauld* and *Grafton* (Escot-Inman 1980; Raynal 2003; Allen 2005; Druett 2007). In 1866, the steamship *General Grant* wrecked along its shores, with a rumoured cargo of 2576 ounces of gold worth an estimated \$30 million (Scadden 2006). Other temporary human inhabitations include a short-lived efforts to establish sheep farms in 1874-1877 and 1895-1910, attempts at colonisation by Māori in 1842-1846, settlement by whalers in 1949-1952 (Clark and Dingwall 1985). The land achieved protected status almost a century ago, as Adams Island in the Auckland

Islands group was listed as a Reserve for the Preservation of Fauna and Flora in 1910, but until recently, no reserve status was afforded the adjacent waters (Government of New Zealand 1997).

Despite this lack of human population (or perhaps, because of it), the islands provide significant habitat for marine mammals, birds, and sea life. The endangered Hooker's Sea Lion (also known as the New Zealand sea lion) makes the islands its breeding territory, with an estimated 95% of its population - ~12,000-15,000 sea lions – breeding within a five-kilometre radius in the Auckland Islands (Slooten and Dawson 2006; Anderton 2006). In addition to sea lions, the waters also sustain several other charismatic marine mammals and birds. The endangered Southern right whale makes the waters surrounding the islands its chief breeding territory in the Southwest Pacific (Peat 2006:43). A wide diversity of bird species may be found among the islands, including 40 species of pelagic seabirds, five of which breed nowhere else (UNESCO World Heritage Centre 2007).

Despite the remoteness of the Auckland Islands, the diversity of life draws a number of human activities, albeit in rather low numbers. Researchers visit the islands to learn more about the ecosystem. Tourists come as well in limited numbers. Some tour boat operators focus primarily on the marine mammal populations and opportunities for viewing. Extractive activities include periodic attempts by salvours to find and remove the *General Grant* treasure; there are also a few fisheries in adjacent waters, most notably squid and scampi.

Commercial fisheries impact marine mammals near the Auckland Islands in a couple of ways. First, trawlers in the squid fishery sometimes kill sea lions directly, albeit inadvertently, when they catch sea lions in their nets. To reduce this source of marine mammal mortality, the industry devised sea lion excluder devices ("SLEDs") which ostensibly divert sea lions prior to being caught in the trawls (Sanford Limited 2001). This technical solution does not prevent all kills, however, thus the Minister of Fisheries also sets a cap on direct mortality of sea lions, which if reached triggers a shutdown of the fishery regardless of whether the squid quota has been caught (Donoghue 1998:183).

Another way commercial fisheries affect the sea lion population is through competition for food. The Hooker sea lion forages far and wide, and squid makes up a significant portion of its diet. To protect the sea lion against inordinate competition for fish resources, the Minister of Conservation established the second marine mammal sanctuary in New Zealand waters, in consultation with the Ministers of Fisheries and

Transport in accordance with the authorizing statute (*Marine Mammal Protection Act* 1978). The sanctuary extended to 12 nautical miles from the Auckland Islands, and prohibited commercial fishing within its boundaries (Marine Mammals Protection (Auckland Islands Sanctuary) Notice 1993 [SR 1993/73] 1993).

Noting the unique ecosystem and the contribution of the subantarctic islands to sustaining endemic species and its biodiversity, the government of New Zealand petitioned the World Heritage Committee of the United Nations Educational, Scientific and Cultural Organisation (“UNESCO”) for inscription of the subantarctic islands (including the Auckland Islands) on the World Heritage List (Government of New Zealand 1997). As party to the International Convention concerning the Protection of the World Cultural and Natural Heritage (“World Heritage Convention”), the New Zealand government may seek recognition for special places based on cultural and natural values (UNESCO 1972). Seeking World Heritage status is voluntary, and while countries may qualify for funds to assist in protection of listed sites, inclusion on the list also carries with it obligations to protect and conserve the qualities that supported the designation in the first place (Id.). These obligations are independent of, but consistent with, those agreed to under the CBD. In 1998, the World Heritage Committee accepted the nomination of the Auckland Islands as a World Heritage Site, however, noted “concern over the integrity of the marine area and the conservation of the marine resources” (UNESCO 1999).

2. *The Marine Reserves Act 1971*

One means available to enhance protection of the coastal marine space around the Auckland Islands was through the MRA71. As previously noted, the MRA71 was originally passed to create the statutory authority for the designation of the Cape Rodney-Okakiro Point (“Leigh”) Marine Reserve. As researchers at the University of Auckland Leigh Marine Laboratory first championed that reserve, one of the central tenets of the MRA71 is to provide opportunities for scientific research. The long title of the Act reads:

“An Act to provide for the setting up and management of areas of the sea and foreshore as marine reserves for the purpose of preserving them in their natural state as the habitat of marine life for scientific study”
(MRA71).

The MRA71 explicitly states that the provisions of the Act are for the purpose of creating “marine reserves for the scientific study of marine life,” rather than for conservation purposes (Id.: Section 3[1]).

The Act identifies who can submit applications for marine reserves, either specified groups or the government itself, and has explicit requirements for a consultation process to address public concerns (Id: Section 5). Applications for marine reserves must demonstrate that the area being considered meets statutorily defined standards to support the designation. Section 3 of the Act describes the eligibility criteria of marine reserves, stating that they must encompass:

“[A]reas of New Zealand that contain underwater scenery, natural features, or marine life of such distinctive quality, or so typical, or beautiful, or unique, that their continued preservation is in the national interest” (Id.: Section 3[1]).

The Act specifies that marine life “shall as far as possible be protected and preserved” (Id: Section 3[2][b]), and that the marine habitat “shall as far as possible be maintained” (Id.: Section 3[2][c]), but that subject to these restrictions the “public shall have freedom of access and entry to the reserves, so that they may enjoy in full measure the opportunity to study, observe, and record marine life in its natural habitat” (Id.: Section 3[2][d]).

The Conservation Act 1987 established the Department of Conservation (“DoC”), vesting the agency with the authority to “manage for conservation purposes, all land, and all other natural and historic resources” in New Zealand as referenced in the Act (*Conservation Act 1987: Section 6[a]*). Administration of the MRA71 fell among DoC’s responsibilities by virtue of its incorporation in the Conservation Act (Id.: Schedule 1). As a matter of policy, DoC views this administrative role not merely as custodial, but rather sees its role as one of a proponent or champion of new marine reserve designations, contrasting large amount of New Zealand’s land area as reserves – over one-third – with substantially less than one percent of the sea area in New Zealand’s EEZ (DoC 1995:7). Thus, DoC regularly prepares and submits applications for new marine reserves under the MRA71.

Under the terms of the MRA71, applications go through the statutorily defined public consultation process, including notification of the general public through publication in specified newspapers, and written notice provided to adjoining landowners, local authorities such as affected harbour boards or regional councils, and

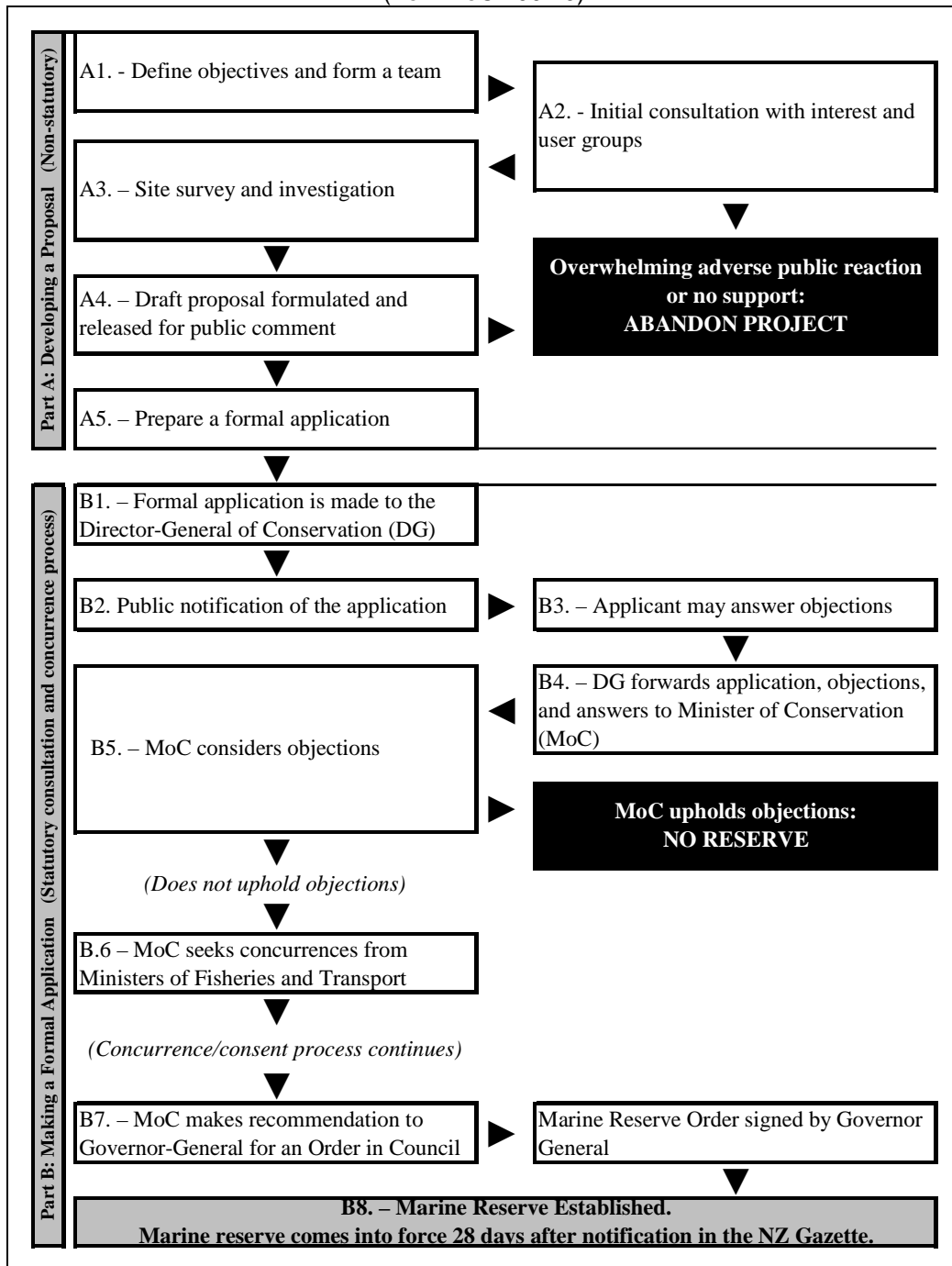
fisheries and transport agencies, allowing a specified time for objections to be received and answered (MRA71: Section 5[1-4]). In the Auckland Islands, consultation with local authorities does not apply, because the Department itself has the authority of a regional council over the sub-Antarctic islands under the Resource Management Act 1991 ("RMA") (*Resource Management Act* 1991: Section 31[A]). After consultation, the application and any objections thereto are submitted to the Conservation Minister for a determination of whether the reserve should be designated or not (MRA71: Section 5[5-9]). If the Minister recommends the designation, the Ministers of Fisheries and Transport must concur in the recommendation before the Conservation Minister can convey the recommendation to the Governor-General for an Order in Council (MRA71: Section 5[9]). Signing of the Marine Reserve Order by the Governor-General establishes the marine reserve, which becomes effective 28 days after notification in the New Zealand Gazette (MRA71: Section 4[1]).

DoC manages the Auckland Islands in a holistic manner under the terms of its conservation management strategy developed "to implement general policies and establish objectives for the integrated management of natural and historic resources" under the Conservation Act (*Conservation Act* 1987: Section 17D; DoC 1998). DoC is also tasked with implementation of the New Zealand Biodiversity Strategy ("NZBS") to uphold New Zealand's commitments under the CBD, with objectives for marine areas including the protection of coastal and marine biodiversity, habitats, and ecosystems "using a range of appropriate mechanisms, including legal protection" (DoC/MfE 2000:66-67). These overlapping commitments to protection across the land/sea interface challenge the agency to find ways to accomplish this protection. Since DoC administers both the Auckland Islands and the MRA71, a natural progression for the agency was to consider preparation of an application for marine reserve status for waters adjacent to the islands, as a means of providing legal protection in response to calls from the international conservation community for integrated management of the area (Dingwall 1995b:171-172; Perrin 1995:175).

Because of its role in administering the MRA71, DoC previously published guidance for how to approach marine reserve applications (DoC 1994a). Consistent with its advocacy mandate, DoC likens the application process to a "campaign," recommending that applicants "[c]ontinually [assess] public attitudes with the aim of encouraging supporters and minimising opposition" (Id.:10). Acknowledging experience derived from prior marine reserve proposals, DoC counsels significant consultation prior to the statutorily required consultation phase. In particular, DoC recommends consulting local *iwi* and *tangata whenua*, commercial fishers (including

marine farming), community groups, tourist operators, landowners, dive clubs, boat clubs, local authorities, the Ministry of Agriculture and Fisheries (MAF)⁸, research organisations such as universities, environment groups, DoC itself, and schools (Id.:11). DoC draws an important distinction between the statutorily required consultation and this suggested non-statutory preliminary consultation (*see figure 14*).

Figure 14 – The Marine Reserve Process under MRA71
(from DoC 1994:9)



⁸ After the publication of the document cited here the Ministry of Agriculture and Fisheries reorganized, with the relevant successor agency being the New Zealand Ministry of Fisheries (MFish).

3. Auckland Islands Marine Reserve Proposal and Application

DoC prepared the application for a marine reserve around the Auckland Islands. In keeping with its own guidance, DoC performed its own “initial consultation with a number of parties who have an interest in the New Zealand subantarctic” prior to the development of its discussion document to elicit further public comment during the pre-consultation phase (these two stages corresponding with steps A1 and A3 on DoC’s flowchart in *figure 15*) (Griffith 2002a:1). The discussion document itself stated DoC’s objective “to preserve for scientific study a range of unique marine habitats of immense international and national interest,” summarized the physical, biological, and cultural/historical characteristics of the site and listed potential implications of the proposed (Id.:3,5-19). The Department noted among the potential implications that some non-extractive activities such as anchoring and transit of vessels would be impacted by proscriptions in the MRA 71, but suggested that the adoption of a “mutual code of practice” to address these issues “may be appropriate” (Id.:18).

DoC released the proposal on March 26th, 2002, and requested comments upon it through April 12th 2002, extending the deadline upon request by a number of recipients until May 3rd 2002 (Griffith 2002b:37). On the basis of positive responses received in response to the call for comment on the discussion document, DoC proceeded with its formal application under the Marine Reserves Act of 1971, following the statutory requirements for notice and public comment (Id.:36). Following the close of the statutory consultation period, having received the concurrence of the Ministers of Fisheries and Transport, the Minister of Conservation recommended the establishment of the marine reserve, and the Governor General signed the Marine Reserve Order on 15 December 2003. The notice was published in the Gazette on 18 December 2003, and the Minister of Conservation announced the designation of the marine reserve on 28 January 2003 in a speech given at the site (Fallow 2003).

Because this analysis looks at stakeholder engagement strategies from an Ecosystem Approach framework, the first stage of engagement – the pre-consultation phase – is of the most interest. In keeping with DoC’s own guidance, the Department sought input broadly from multiple interest groups (**see table 3**). Note, however, that its guidance recommends consulting affected groups *prior* to development of the discussion document. That the discussion document does not disclose which groups or individuals may have been consulted earlier exposes the agency to allegations of a

lack of transparency as without resort to an Official Information Act request, the public is not privy to the scope of the initial consultation⁹.

Table 3 –DoC Guidance and Auckland Islands Pre-consultation Comparison

(from DoC 1994:11 and Griffith 2002b:37)

Guidance Recommendation	Consulted Here?	Comment
Local iwi and tangata whenua	Yes	Iwi were consulted prior to development of discussion document (stage A2) (Griffith I).
Commercial fishers (including marine farming)	Yes	Most copies of discussion document sent to this group
Community groups	No (or, not disclosed)	May be included in 'Other'
Tourist operators	Yes (unclear)	Believed to be included in "Charter Boat Operations."
Landowners	No (or, not disclosed)	Not applicable, as there is no private landholdings on the Auckland Islands.
Dive clubs	No (or, not disclosed)	May be included in 'Other'
Boat clubs	No (or, not disclosed)	May be included in 'Other'
Local authorities	No	Under the authority of the Local Government Act 1974, the Reserves Act 1977, the Conservation Act 1987, and the Resource Management Act 1994, the Department of Conservation has local authority over New Zealand subantarctic islands to 12nm offshore. Thus, this consultation is inapplicable to this application.
Ministry of Agriculture and Fisheries (MAF)	Not disclosed	MAF was reorganised with the Ministry of Fisheries (MFish) the successor agency. DoC consulted MFish, but did not document in the Discussion Document.
Research organisations such as universities	Yes	Characterised as "Marine Scientists."
Environment groups	Yes	Characterised as "Conservation Groups."
Department of Conservation	Not disclosed	Not applicable
Schools	No (or, not disclosed)	Not applicable given uninhabited nature of Auckland Islands, distant research schools would be counted above.

⁹ NB: This researcher enquired for such records from the Department and was rebuffed by a DoC official who cited the time and expense of responding to the request. When pressed, the DoC official acknowledged that the information may be available through the Official Information Act, with confidential information (such as the names of private parties consulted with) redacted, but that the costs affiliated with the review of documents, redaction, photocopying and delivery would be passed on to the researcher. Given the frosty nature of this interchange, time constraints of the research project, and questionable value of data once redacted, this researcher declined to use this source of data for the thesis.

DoC received a rather sparse response from its invitation to comment on the discussion document, leading to a number of possible speculative inferences which are also supported by some of the subject interviews (**see figures 15 and 16**) (Griffith 2002b:37). It could be that the timeframe for response may have been too tight – the original request for feedback was a mere 17 days, subsequently extended to a total of 38 days. It is not clear whether DoC notified all groups or individuals of the extension, and affected parties may have simply gone about their business, oblivious to any extension of the opportunity to comment. As one stakeholder put it:

“We are managing a business to feed our families, people are hungry and it takes time to respond to these requests. DoC is not respectful of peoples’ livelihoods to waste their time like this” (S:18).

Another possibility may be that distribution, while reportedly spread widely, did not reach intended audiences in each group. DoC does not disclose its method of outreach to the interested communities; if posted to addresses not well monitored by affected parties, notification may not have reached these audiences at all.

Figure 15 - Percentage of Discussion Document Distribution by Sector
(from Griffith 2002b:37)

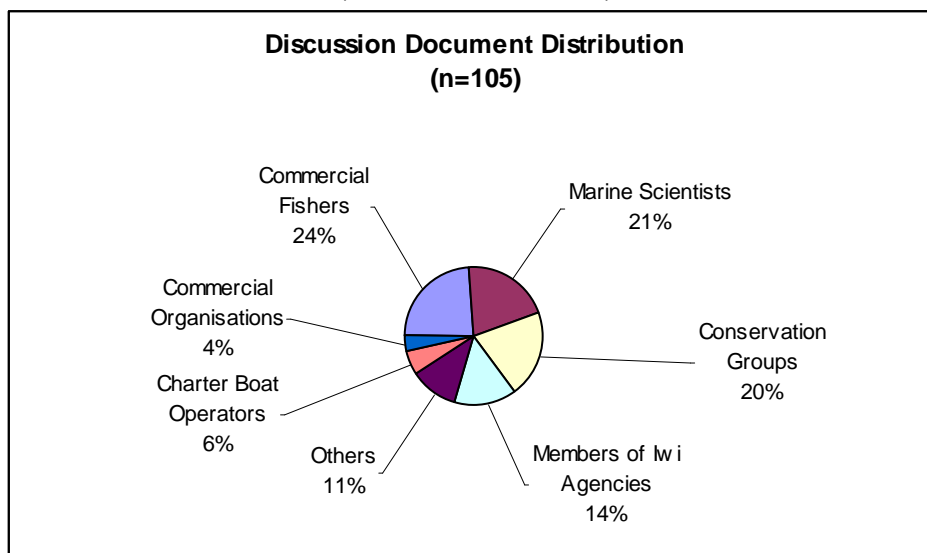
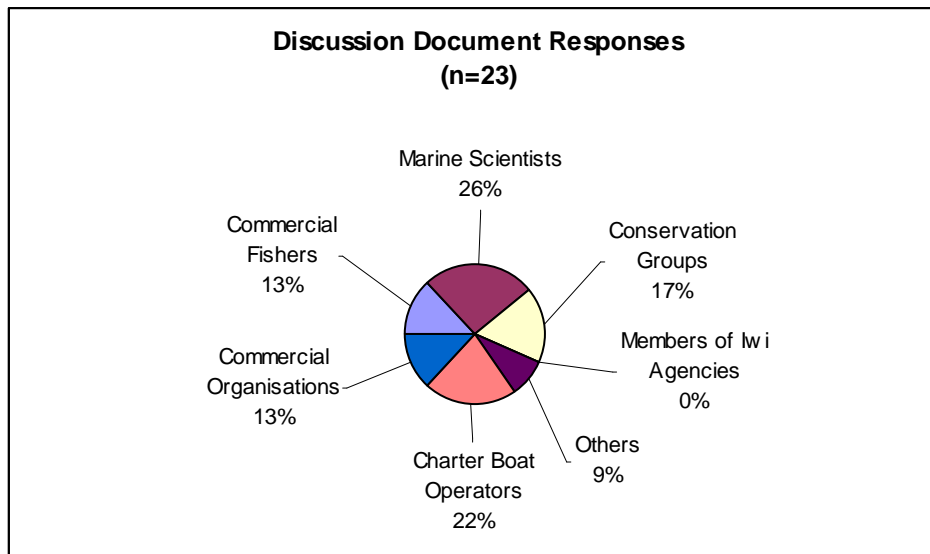


Figure 16 - Percentage of Discussion Document Responses by Sector
(from Griffith 2002b:37)



These speculative inferences challenge the effectiveness of the consultation; but some interviewees from the environmental and stakeholder groups who participated in the consultation process opine that the nature of the Auckland Islands explains a lack of response. Interviewees from the environmental community suggested that remoteness led to an “out of sight, out of mind” mentality:

“The Auckland Island ones of course was much less immediate community involvement in the sense that there wasn’t a local community of people with interest, and those who were most affected of course were not humans and didn’t have a voice” (E:12).

“There haven’t been people inhabiting the Auckland Islands, no native people, for a long time; so really the support – the lobby – for marine protection is limited to those who have been there, studied mostly the land biology and ecology rather than the coastal stuff, the visitors that come on the tourist ships, and people like me who not often enough get a chance to go there. I feel it was the lobby was somewhat limited . . . and they will all be appreciative of the natural value of the place” (E:9).

One interviewee from the stakeholder sector suggested that low levels of use caused fishing interests to worry less about making a submission:

“Of course, commercial fishing was already prohibited around the islands anyway, and no recreational fishing, so the level of debate over it and

emotion was very limited – compare that to some of the other places around the country and it was quite the opposite” (S:6).

The low response rate to the discussion document may exhibit less concern or interest from those particular groups. This is especially noticeable after analysing the distribution of responses (**see figures 17 and 18**). Notably, charter boats and commercial organisations had very high response rates, while commercial fishers and conservation groups had low response rates, and iwi did not formally respond at all (presumably, iwi were the first to be consulted during the informal, pre-discussion document stage).

Figure 17 - Discussion Document Distribution - Absolute Numbers by Sector
(from Griffith 2002b:37)

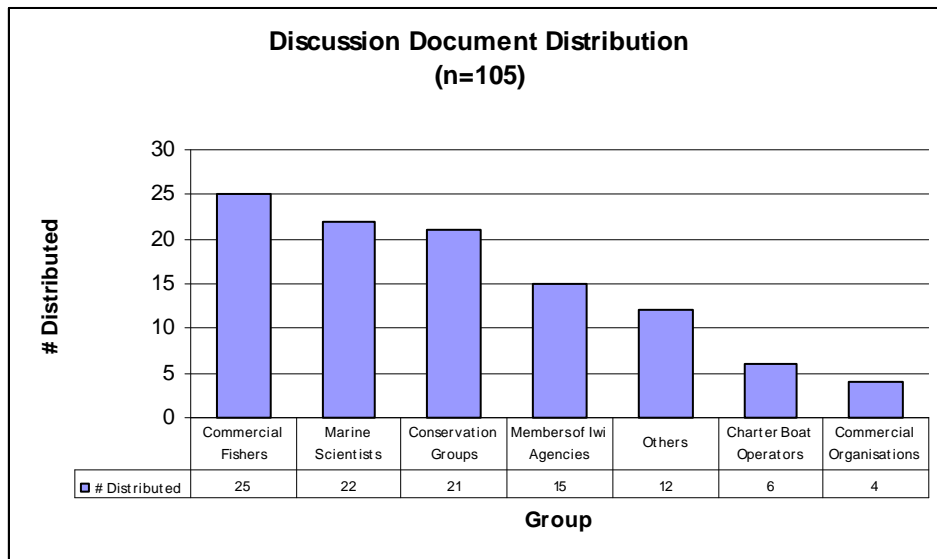
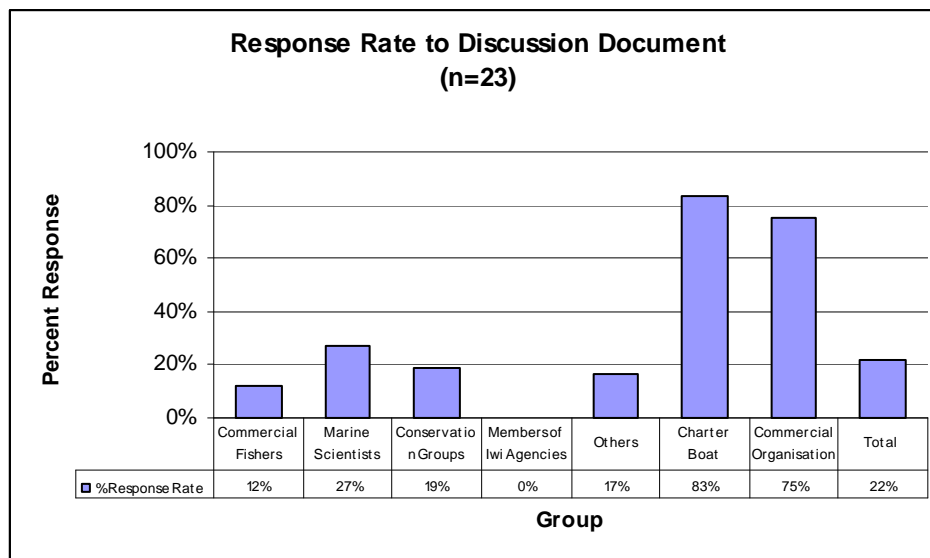


Figure 18 - Discussion Document Responses as Percentage of Sector Distribution
(from Griffith 2002b:37)



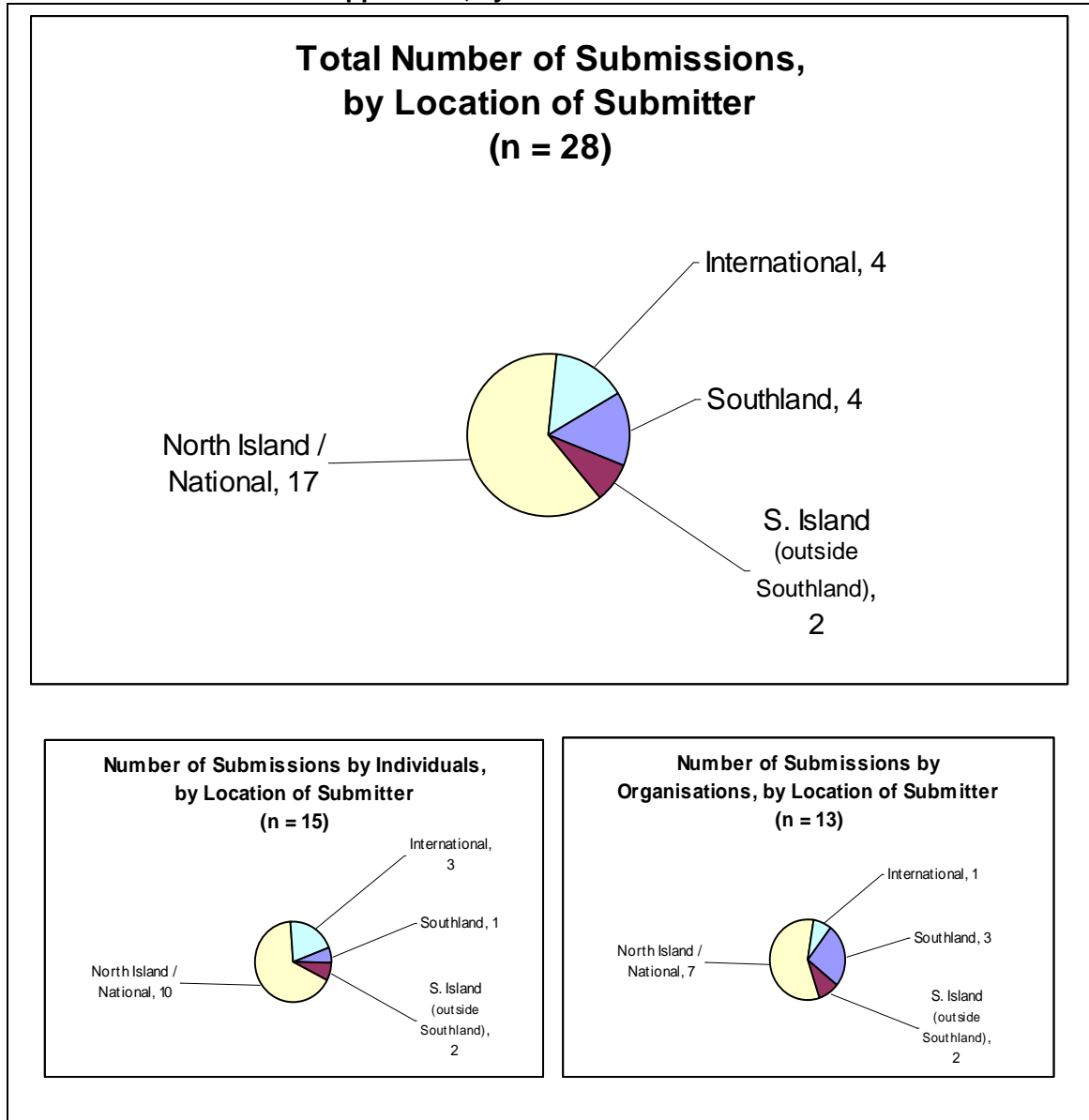
Public comment received through the statutory consultation phase exhibited a similar lack of engagement from some of these groups (however, as the notification of the Application followed statutory requirements for notification and did not have a discrete distribution, it is impossible to analyse responses as a percentage of parties identified within each sector)¹⁰. Similar speculative interpretations may be inferred from the low level of response to the formal application, but as copies of the submissions to the statutory consultation were available for analysis, further analysis is possible (*see figure 19*).

A curious detail emerges from this analysis, very few submitters claim residency in the Southland or Otago region or, for that matter on the South Island of New Zealand at all. The largest grouping of respondents clusters around Auckland ($n=7$) or the North Island of New Zealand generally ($n=17$), as well as internationally as far away as Seattle, (United States) and Cambridge (United Kingdom). While some international submitters claim significant ties to the area (the Seattle firm that arranges eco-tours, for instance), others admit no connection to the area other than general conservation sensibilities (as, for example, the Cambridge resident recently returned from a ten-day holiday in New Zealand not including a visit to the Auckland Islands). This pattern suggests that designation of the marine reserve enjoys a broad, diffuse

¹⁰ Upon request, the Department of Conservation Southland Conservancy provided copies of public submissions to the formal marine reserve application. The Conservancy waived Official Information Act request procedures and cost-recovery charges for photocopies; this researcher gratefully acknowledges this support.

support from distant communities, but does not stir up passions - either in support or in opposition - among many local constituencies.

Figure 19 - Number of Submissions on the Auckland Islands Marine Reserve Application, by Location of Submitter



Nonetheless, while this may be an interesting observation, it is inconclusive. Without knowing identities of the respondents to the discussion draft, it is impossible to tell whether the sample is comprised of the same (or nearly the same) respondents, or different. Nor is there any evidence as to whether the solicitation of comments targeted local (Southland or South Island), national, or international interests.

4. Perceived political motivation for reserve designation

There are a number of potential reasons why a local constituency might be less motivated to comment than distant passive interests. One possibility, mentioned by interviewees in all three sectors, was a sense of political inevitability surrounding the application. As stated by one stakeholder interviewee:

“Certainly, ... the decision was made in Government to designate the Auckland Islands following on from the designation ... as a World Heritage Area ... A lot in government decided that their marine reserve process or steps in a marine reserve would be a natural progression from the land out into the sea” (S:6).

And as stated by one government interviewee:

“We were given a strong steer to move on it and have an application put in... so I guess the expectation was that they were serious about looking at it... You could see that there was a strong political will to do something about it... The Minister had such a high level [of reserves] that he wanted that there was a feeling that he wanted to get a marine reserve in there” (G:31-32).

And as stated by one environment interviewee:

“[T]he Auckland Islands obviously has a broad range of biodiversity, but I think that it was driven by concern for a very specific species ... rather than the broader ecosystem ... but why politically it went through ... its the specific iconic species” (E:15).

This concern for specific iconic species is borne out by newspaper accounts of a high-profile visit to the Auckland Islands by the Prime Minister Helen Clark and the Conservation Minister Sandra Lee shortly before the discussion document was released for comment. In response to questions regarding the possibility of extending protection of the Auckland Islands ecosystem seaward, Rt. Hon Clark stated:

“The Government ... recognises the importance of the coastal waters around the Auckland Islands as breeding grounds for the New Zealand population of southern right whales, which are slowly rebuilding their numbers from near-extinction, and the endemic New Zealand – or

Hooker's – sea lion" (PM, Lee head to Auckland Islands to inspect projects 2002).

5. The Auckland Islands Marine Mammal Sanctuary

Of course, the Auckland Islands marine area already enjoyed protection from the existing marine mammal sanctuary. At first blush, this may appear to partly explain the muted response of the commercial fishing industry to the discussion document and application. However, none of the primary interview data from participants in the stakeholder sector supports this hypothesis.

Members of the government sector, however, expressed some sensitivity to the existence of the marine mammal sanctuary. One interviewee suggested that the existing exclusionary zone provided an incentive for the commercial fishing industry to acquiesce in the decision to extend restrictions to other groups as well:

"When pushed [the commercial fishing industry] would always argue that if you are going to have a marine reserve then it would be "one-out, all-out" - if they were going to be excluded, then so too the recreational fishers and the traditional fishers would be" (G:13).

While another questioned how much conservation value the designation created:

"Well, [the designation's] more in theory, because there was an exclusion zone for the commercial [fishery]. I think it's raised the profile, but there was a marine mammal sanctuary there, too, so it does not make as big of a difference...[it's] a 'Claytons marine reserve'"¹¹ (G:30).

When faced with this criticism, one might wonder why DoC would pursue a marine designation in the Auckland Islands at all. This interviewee responds:

¹¹ The phrase "Claytons marine reserve" required explanation to this North American researcher. As explained, Claytons was the brand name for a non-alcoholic whisky substitute introduced in the Australasian market in the mid-70s and advertised as *"the drink you have when you're not having a drink."* While this researcher abhors the use of Wikipedia as a citation source, it has some use for illuminating pop-culture allusions:

"Many regarded Claytons as a poor taste substitute, and the promotional campaign was ridiculed at the time. Subsequently, the term 'Claytons' entered the vocabulary of both countries [Australia and New Zealand], used as an adjective to signify a compromise which satisfies no-one, or any form of inferior substitute or low-quality imitation, largely synonymous with the word 'ersatz.' For example, a hasty or temporary repair may be only a Claytons solution to a problem"

(Wikipedia: The Free Encyclopedia 2007).

“I think that because it’s a special place, and because how do you know what’s going to happen in the future? How do you know that things aren’t going to change, and people won’t change their uses? And then you’ve made a statement about the area. I think that marine protection isn’t just about protecting pristine places where there isn’t use, and it’s not about protecting places that have been degraded. Its about making sure that we have got a suite of places that represent the sorts of ecosystems on the planet that are put aside, where we say: ‘We’re just going to not do stuff, they’ll be looked after.’ So it’s about the future, really...” (G:33).

Thus, one interpretation of the reason to designate a marine reserve may be to serve a declaratory purpose, to announce to the rest of the world New Zealand’s commitment to safeguarding its natural heritage. Cynically, some interviewees have suggested off-record that this is an international promotional gimmick, that the MRA71 might as well be administered by the Ministry of Tourism. The application itself, however, points to key differences between the Marine Mammal Protection Act and the MRA71, such as the MRA71’s prohibition of recreational fishing and substantially higher penalties for offences (Griffith 2002b:23).

6. Dissatisfaction with the consultation and concurrence process

Despite the low level of controversy for this particular designation, several of the interviewees noted dissatisfaction with the way designations proceed under the MRA71. A common complaint among proponents of marine reserves (in the government and environment groups) was the perception of an inordinate amount of time required to get a marine reserve designated. As one government interviewee described:

“Marine reserves are hard work in New Zealand, you do them one at a time, you spend months doing survey work, you spend years doing community consultation, you spend years arguing and fighting not only amongst the various stakeholders but also the various government agencies that represent or at least purport to represent those stakeholders, it is a tough, demanding, draining, tiresome process” (G:14).

While the Auckland Islands was designated less than ten months after the release of the initial proposal in the discussion document, this was considered by many to be a record for designations under the MRA71, with several applications languishing for over a decade before being established. One government interviewee felt the extensive pre-consultation recommended and followed by DoC was too much, and caused the public to think that DoC was not doing its job well:

“What holds us up is ... the process – consult, consult, consult – so much pre-consultation that it can slow it down, there is so much ‘to-ing’ and ‘fro-ing,’ and a whole lot of wasted time... People can complain, but there is some push from the green fraternity that marine reserves take years to get through in the way we are doing it, and that therefore the planning process is skewed, or rotten, or dozy” (G:11).

Others, in the environment sector, thought the requirement for concurrence of several ministers rendered the MRA71 structurally flawed:

“One of the problems with the designation process on the marine reserves has always been the requirement of the concurrence with the Minister of Fisheries ... there has always been the potential for huge delay.... The ... requirement for the concurrence with the Minister of Fisheries ... is not time bound, so that in a number of marine reserves proposals the Minister of Fisheries has sat there and not made a decision for 10 years. The fisheries officials can hold it up more or less forever until suddenly they want something from the Minister of Conservation and then they might do some sort of grotty little deal that involves giving consent over there for a concession on some conservation issue. ... This veto power that the Minister of Fisheries has on the designation of marine reserves is totally inappropriate given that DOC doesn’t have any corresponding veto power over the amount of fishing” (E:18-20).

Members of government and stakeholder groups both acknowledged problems from the top-down nature of the designation process, with government dictating how the reserve designation would proceed. One interviewee in the government lamented the controversy engendered in this approach:

“Some of the work about designating marine reserves has been a wee bit top-down ... such a horrendous fight; that might’ve been able to have been fixed up had it come up from the bottom...” (G:20).

Among resource-dependent stakeholders, the “top-down” approach fostered cynicism, resentment, and bitterness:

“They [DoC] decide they’re going to have a marine reserve in the area, they then went about trying to sell it to the people and then to justify it under the Act” (S:8).

And:

“I definitely got the sense that DoC was only concerned with crossing t’s and dotting i’s” (S:17).

Interviewed stakeholders consistently had few kind words to say about DoC and its approach to designating marine reserves under the MRA71, illustrating the divide between conservation interests as represented by DoC and stakeholder interests in continued exploitation of natural resources. As one government interviewee put it:

“It was always an uphill battle – it was always a battle of the conservationists having an idea of a marine reserve or area that needed protection, and other interests – sometimes the community, but mostly the fishing industry – deciding that the best way to protect the resource (and they always used the word resource) wasn’t by setting areas aside and not allowing them to use it, but by having proper management, and that was the whole ITQ fisheries management plan process” (G:13).

But the MRA71 was never intended to be a fishery management tool. This complaint illustrates a fundamental difference in values between those who perceive worth in preservation, and those who revere utilization.

Some suggest that more education and outreach would help bridge this divide, as would having more public consultation in fisheries management. As one interviewee in the environment community declared:

“We would like to see more public discussion of the broader issue of the state of the marine environment in the oceans and more public process

into fishery decisions so that people understand the need for marine reserves more, and the impacts of fishing and therefore why marine reserves are required” (E:20).

Ostensibly, under this notion, more perfect distribution of information about the scientific basis for conservation and the introduction of parity in public consultation procedures between conservation processes and fisheries management processes could lessen the discord between conservation and extractive interests.

7. Criticism of the MRA71

The most consistent complaint over the MRA71 is that it just plain isn’t up to the task for which it is being used. DoC establishes marine reserves for conservation purposes, but the MRA71 specifies that reserves are “for the purpose of preserving ... for the purposes of scientific study” (MRA71: Section 3[1]). One interviewee in the environment sector phrased well this dissatisfaction:

“It just seems so ridiculous that we are gathering these places, these important coastal marine zones, from the point of view of their value for scientific study. Since 1992 at least, New Zealand has been a signatory to the biodiversity convention from Rio de Janeiro, and since the year 2000, we have had our biodiversity strategy, and yet we still don’t have a marine protection with a function that’s up to speed with that” (E:3-4).

Critics noted that the MRA71 only provided for marine reserve designations within New Zealand’s territorial sea, extending 12 nautical miles from shore. To this view, when compared to Australia’s recent designation of a marine reserve in waters adjacent to its own sub-Antarctic Macquarie Island Marine Park which extends 200 nm offshore to the limit of Australia’s EEZ, the MRA71 seems woefully inadequate (Australian Government 2007). One member of the environment sector suggested that even with inadequate authority under the MRA71, a similar outcome could have been pursued in waters adjacent to the Auckland Islands using other means:

“They maintained that they couldn’t do them beyond 12 nautical miles, and we disagreed with that. . . . We considered that they could take action within the general competence that they have to close a wider area off in terms of a Fisheries Act closure ... or under the Marine Mammals Act and that they didn’t have to limit themselves to 12 nautical miles. It’s true that

the current Marine Reserves Act is limited in its scope, but we felt there were other ways of extending it” (E:14).

Several interview participants suggested the age of the MRA71 as the main reason for its perceived inadequacy, suggesting that a reauthorized Marine Reserves Act was overdue to incorporate new values, new understandings, and new ways of accomplishing objectives. As one interviewee in the environment sector noted:

“The Marine Reserves Act is a pretty archaic piece of legislation. It was adopted in ’72. Its 30 years old, it’s got all of the failings of a piece of legislation of that certain age” (E3:6).

The MRA71 also fails to address integrated management issues such as vessel discharges, disturbances from anchoring, risks of bioinvasion, and similar issues. Some government interviewees ascribed this deficiency of the Act to what they perceived to be the narrow purpose for which the MRA71 was originally passed:

“To put it bluntly, the Marine Reserves Act was a dog, still is a dog – the Marine Reserves Act was effectively written to establish the Leigh marine reserve, and while there have been a number of legislative changes, the re-write or rebuild is long overdue to bring it up to ‘best practices’” (G:13).

Still, others suggested that these deficiencies, while real, were not major or significant and could be worked around, as one government interviewee put it:

“It doesn’t need to have an act, to address the Auckland Island issues; I think you can just come up with a Code of Practice that is something that people can agree with... there was a genuine willingness to look at issues, and the Code of Practice is the thing that will address the concerns that the people down there had, the users...” (G:30-31).

But members of the environment sector greet the suggestion of a voluntary code of practice with suspicion, if not open hostility:

“We are always concerned that there is scope for illegal behaviour and violating the reserve and we know that the fishing industry itself has not taken on board the rationale for marine reserves and as therefore not committed an intrinsic sense to compliance” (E:20).

So even if a code of practice meets the needs of stakeholders, it does not satisfy concerns of the environmental community. As of December 2006, no code of practice had been developed or adopted, the effort having been postponed to be included in a broader package under development for protection of all five subantarctic island groups as a subsequent program (G:29; DoC 2006b). Members of the stakeholder sector expressed concern over this lack and the lack of communication or debate on the decision to shelve the code of practice:

“DoC said that we could discuss our issues and submit on the application, but after the closure of the submittal period there was no feedback – a vacuum – other than just moving on, not even a ‘thank you’” (S:17).

Once again, stakeholders express dissatisfaction with what they perceive to be the autocratic attitude of DoC.

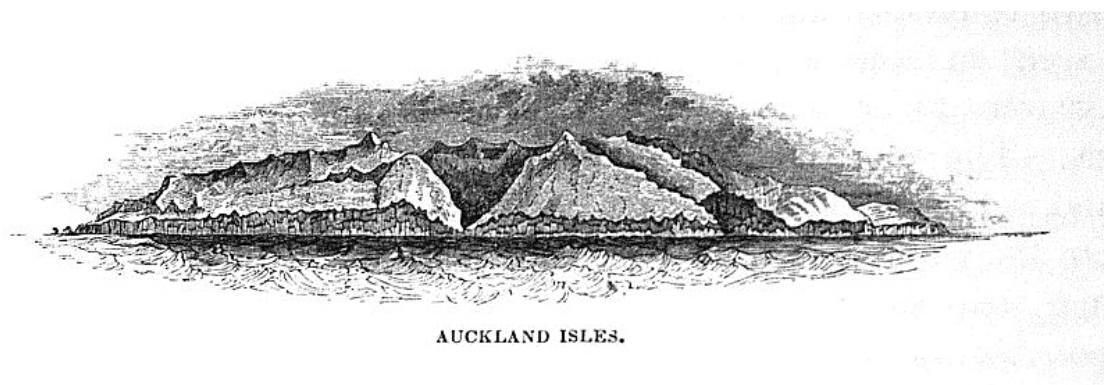
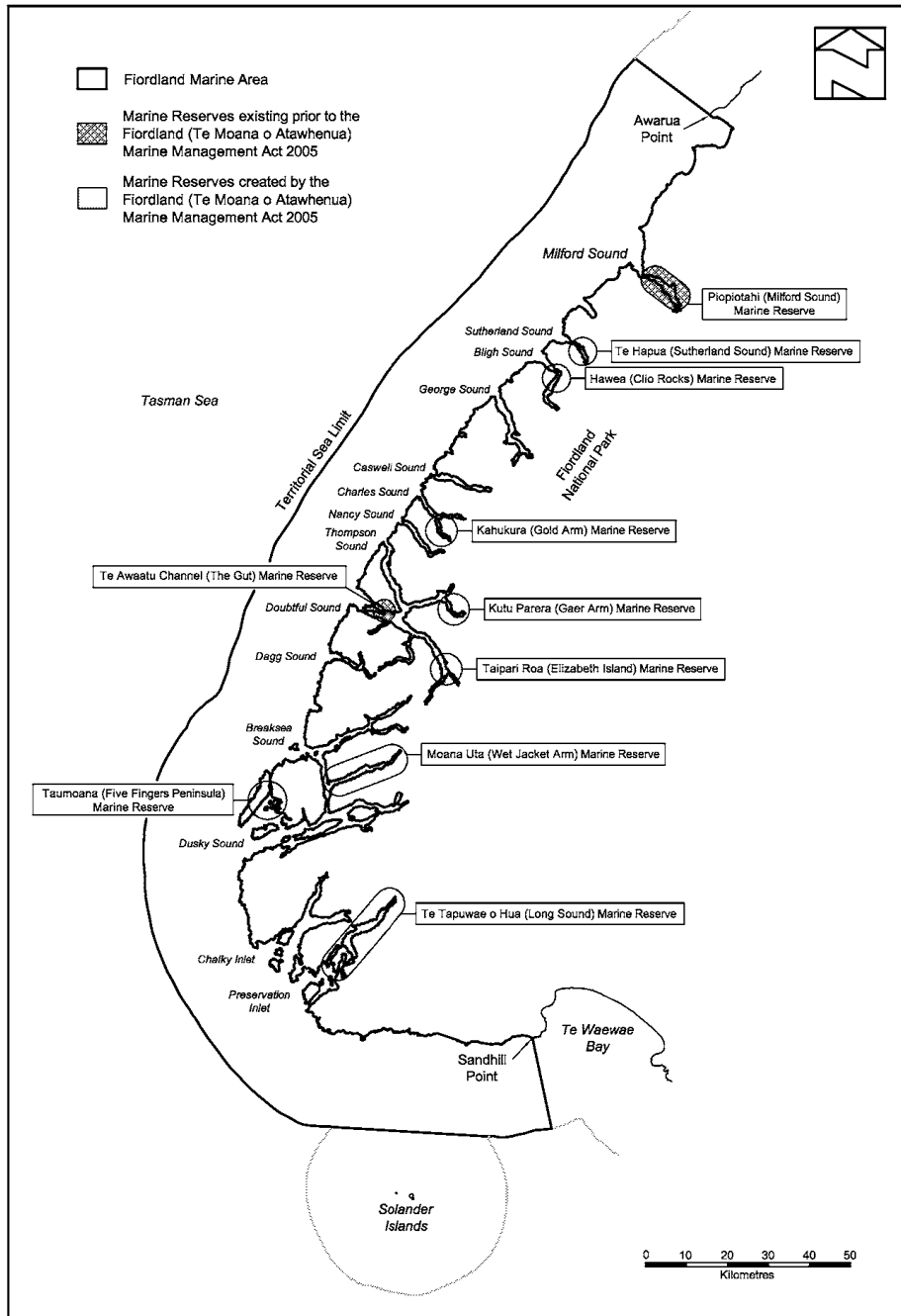


Figure 20 - Auckland Islands

From: Charles Wilkes, Narrative of the United States Exploring Expedition during the years 1838, 1839, 1840, 1841, 1842. Volume 5, 1845 (courtesy Smithsonian Institution, http://www.sil.si.edu/ImageGalaxy/imagegalaxy_imageDetail.cfm?id_image=4573)

B. The Fiordland Marine Management Act

Figure 21 – Indicative Map Portraying Fiordland Marine Area
(from FMMA: Schedule 1)



1. Fiordland – Overview

Fiordland, in the southwest corner of New Zealand, stands apart from the rest of the country as high mountains and expanses of open seas make access difficult. The area is verdant, rainfall commonly falls as much as six metres annually (DoC

2005). The land facing the Tasman Sea is rugged; deep and narrow fiords cut into the coastline, bounded by steep mountains and cliff faces moulded by prehistoric glacial activity (Peat and Patrick 1996:75). Most of these fiords are incredibly deep, with shallower sills near the open coast from where the glaciers' terminal moraines (Id.:76).

This combination of natural features results in a unique marine environment. The freshwater runoff from the high rainfall pours into the fiords, stained with tannins, humic acid, and dissolved organic substances from interior forests (Id.:77). The underwater sills prevent the mixing and turbulence of the outer coasts, and the tea-coloured freshwater forms a low salinity layer floating on the top of the seawater below (Id.). This layer of dark water reduces light, as do the high walls of the fiords, encouraging deepwater species to grow nearer the surface (Id.). As a result, dark-species adapted to living in the dark of the deep sea, such as sea pens, corals, and sponges typically found in the open ocean at depths between 100 and 200 metres, can be found in the fiords shallower than 30 metres (Id.).

Much of this marine life occurs near the surface of the water within a narrow band of rock wall coral communities on the edges of the deep fiords. Of the coral species, brachiopods (lamp shells), antipatharians (black corals), and gorgonians (horny corals, including sea fans and red coral) dominate (DoC 2005; Mize and Irving 2006). This rich assemblage makes the area popular with divers – both recreational and research – which would otherwise not be able to see such life due to excessive depth. A thriving tourism industry depends on this attraction, as well as the attraction of sightseers to Fiordland's above-water features, and several charter operations and tour boats ply Fiordland's waters.

Species of commercial and recreational interest also abound. Rock lobster, blue cod, paua (abalone) and Jock Stewarts are plentiful in the fiords, making the area a productive haven for both recreational and commercial fishers that are able to fish in its protected waters (Id.). The area accounts for approximately 20% of New Zealand's commercial rock lobster harvest, and 12% of the paua fishery (GOFF 1999:6). Recreational fishing has grown with the fiords being attractive to small boats that appreciate the sheltered waters of the fiords (Id.:30).

Māori have a long connection with the area, as well, predating European visitation and use (Id.:11-15). The fiords have been a vital source of *kaimoana* (seafood) for customary use. Some fiords also provide a source of the native greenstone, or *pounamou*, which serves as an integral part of Māori cultural practices and trade. However, given the ruggedness of the area, Māori use has traditionally

been transitory, while the Māori have strong cultural ties to the area they do not have large settlements or habitation (Id.; Mize 2006b)

Marine mammals and seabirds also make the fiords their home, but the marine area does not have the same concentration of endemic species as in the Auckland Islands (Peat and Patrick 1996:80-82). Also unlike the Auckland Islands, human activities have limited impact on marine mammals or seabirds. Rather, concern for protection of the marine environment in Fiordland stems more from an effort to protect the unique ecosystem and the coral species. As one stakeholder expressed it:

“These things are so special, they need this protection – they’re fragile, they’re made up of animals and plants that live for over a hundred years. Black corals were there when Captain James Cook came to New Zealand – in the same place, looking the same as they do now – 400 years old some of these things. We’ve got to look after them in a special way”
(S:10).

Thus, calls for protection of the marine area follow a tradition of protection of special species, as in the Auckland Islands.

2. Protection initiatives

The rugged landscape and unique ecosystems in Fiordland have inspired calls for its protection for over one hundred years (Roberts 2001:649). A land area of 940,000 hectares was set aside for protection in 1904, and in 1952, the Fiordland National Park was established (*National Parks Act* 1952; DoC 2006a:8). However, the Fiordland National Park only comprises land; its current boundaries stop at mean high-water and thus do not extend to the foreshore, seabed, or marine area (Fiordland National Park Order 1978 [SR 1978/333] 1978; *National Parks Act* 1980).

As in the subantarctic islands, the special character of the place led to Fiordland’s nomination as a World Heritage Site. In 1990, the World Heritage Commission inscribed the area on the World Heritage List, with the name “Te Wāhipounamu/South West New Zealand” and incorporating the 1986 inscription of the national parks within its boundaries (UNESCO 1986). The designation applies to terrestrial features only, stopping at mean high-water as do the limits of the national park, despite expressed interest in extending the designation seaward:

“The Committee noted the importance of including the waters of the fiords as an integral part of this national park and ... welcomed the initiatives of the New Zealand authorities to bring the waters of the fiords under the control of the park” (Id.:5-6)

The Fiordland area subsequently became subject to increased research and conservation interest (RSNZ 2001), but risks to the marine ecosystem increased with its recognised standing as well, as visitors became increasingly attracted to the area as a destination (GOFF 1999:30). Corals faced damage from vessels anchoring and careless or wanton diving practices (Miller, Chadderton, and Mundy 2001). Extractive uses such as commercial and recreational fishing (including sport divers' take of lobsters) contributed to declines of the stocks of target species (Starr and Breen 2001). Bioinvasive species, such as *undaria pinnatifida* which populates new areas from hull fouling of visiting boats, posed an additional and growing threat to the ecosystem (DoC 1994b).

3. Fiordland marine reserves under the MRA71

In the early 1990's, the New Zealand Federation of Commercial Fishermen proposed two marine reserves in the Fiordland area, submitting applications under the MRA71 for the Piopiotahi (Milford Sound) Marine Reserve and the Te Awaatu Channel (The Gut) Marine Reserve (DoC 2007). Commentators are divided on what is perceived as the original intent of filing the applications. According to some, fishers recognized the value of the areas proposed through deeper engagement with the scientific community. More commonly, observers suggest that the application was a pre-emptive move on the part of the fishing industry. As one government interviewee related:

“The Federation of Commercial Fishermen – they proposed two minuscule marine reserves – what could the environmentalists say? I mean, are they gonna say no? Of course they said yes! And they went through with basically no opposition. The Federation ... smart, and they were buying themselves some time...” (G:1)

Nor was this view an isolated opinion. More than one stakeholder admitted off-record that these reserve locations were chosen because they were areas that commercial fishermen could live with, and it was felt better to bring marine reserves upon

themselves than to have others propose them in areas that would conflict with their fisheries.

By 1995, fishers in the area noted conditions in the fiords deteriorating, and resolved to do something about it at the local level (GFFME 2003:20). Impacts on the area had increased as access to the fiords improved, both from land with improved roads to both Milford and Doubtful Sound, and from the sea as better boats and marine navigational equipment made fiords away from road access more accessible (GOFF 1999:29). At the same time, increased attention to the area by scientific researchers drew the interest of conservation groups; both the New Zealand Marine Sciences Society and the Royal New Zealand Forest and Bird Society called for expansive marine protection (McCrone and Challis 2005:2). This conservation interest captured the attention of local resource users, as one government observer noted:

“The conservation, or, the environmental front - as we say in New Zealand, ‘the greenies’ – the greenies were keen on bringing the Fiordland National Park boundaries and extending them from the high water mark down to the sea and maybe up to the fiord entrances. There had been different views expressed by a wide range of people, some of them in DoC, others in Forest and Bird and other organizations, to turn it into one big World Heritage Site. Fiordland is a part of a World Heritage site, but it doesn’t incorporate the sea. I suppose like a lot of things, you start out asking for something a bit bigger than you might actually end up getting, but it probably scared the hell out of the commercial fishermen that they would be denied the right to commercially fish the fiord entrances and that sort of thing...” (G:24-25).

Anticipating further conflict, members of the fishing industry again considered pre-emptive action.

4. Paterson Inlet - a model for integrated management?

Southland area residents had just witnessed a similar conflict, when conservation interests and fishing interests disputed the proper way to manage marine resources around Paterson Inlet, on Stewart Island. In that case, a marine reserve application submitted in 1994 threatened recreational, commercial and Māori fishing interests, and galvanized the community to form a committee to respond to the application. The Ministry of Fisheries, Southern Regional Office (“MFish South”)

assisted in setting up the Paterson Inlet Fisheries Working Group. The group included representatives of Ngāi Tahu, recreational and commercial fishers, charter boat operators, aquaculture, and conservation interests. The working group developed a fisheries plan for the inlet, which included a voluntary ban on commercial fishing in the inlet, a code of practice for recreational and charter boats, and details for monitoring and outreach programs (eventually, this process resulted in a *mataitai* and a marine reserve being established in 2004) (Player 2004:11).

In Fiordland, no marine reserve application had been made. But rather than wait for one, members of the fishing community sought to be proactive. Fisheries representatives approached MFish South to see if a liaison programme similar to the Paterson Inlet group could be put together for the Fiordland area.

The MFish South regional manager who facilitated the Paterson Inlet Fisheries Working Group, Laurel Teirney, helped coordinate a similar working group process for Fiordland. The group officially launched as the Guardians of Fiordland's Fisheries with its inaugural meeting of December 1995 (GFFME 2003:19). Original members of the nascent fisheries liaison committee included representatives of commercial fisheries organisations (including rock lobster, wet fish, and paua fisheries), recreational fishing organisations, charter boat operators, and Ngāi Tahu (Id.).

While maintaining representation of nominating sectors, the members adopted a suite of ground rules required by the group's facilitator. Representatives were to be selected based on their willingness and ability to share knowledge, listen to others, discuss issues rather than positions, be committed to sustainability of the resource, be ready to cooperate, and devote sufficient time to the process (Player 2004:12). As members joined the group, the facilitator challenged them to define their vision of what they would like Fiordland to be like in twenty years (Carey 2004:73). The members, initially suspicious of each other due to historic competition between sectors, were surprised to learn how similar their individual visions were (Id.). As the chairman of the Guardians, John Steffens, put it:

"We realized we were after the same stuff; it had people looking at each other in quite a different light, they weren't such bad buggers after all" (Id.).

The group unified behind a common vision as their collective purpose:

“That the current quality of Fiordland’s marine environment and fishery, including the wider fishery experience, be maintained for future generations to use and enjoy” (GOFF 1999:7).

This vision became the guiding principle of the group that held the process together.

5. The primacy of information

At the outset, the Guardians set a process for identifying issues, prioritizing between them, and corralling the information necessary to adequately respond to them. In keeping with the group’s strong focus on fisheries, the Guardians first published a voluntary code of responsible fishing practice, published and distributed among the fishing fleet as *“Beneath the Reflections: Caring For Fiordland’s Fisheries”* (GOFF 1996). However, the Guardians soon learned that information available was insufficient for their needs for addressing issues beyond that:

“When first discussing the issues confronting Fiordland, the Guardians discovered that although there was a great deal of information about Fiordland, the available information was dispersed and incomplete” (GOFF 1999:9).

To correct this situation, members of the group assembled information from their respective groups. One technique employed by the facilitator in the early stages was to have each of the Guardians mark their group’s fishing activities on a large chart using colour-coded dots (Teirney 2006:2). This served two purposes: first, it aggregated the more than 250 years of experience at the table in a graphic fashion, revealing common trends and information gaps. Second, and perhaps more importantly, the exercise prompted the Guardians to let down their guard:

“Even if they had decided not to share information, they simply couldn’t help themselves when dots were being placed on ‘their patch.’ The map was soon surrounded by the group all talking places, experiences and observations – a wonderful way of building relationships” (Id.).

Consistent with stereotypes of fishermen everywhere – fishermen love to keep their fishing holes secret, but they also love to boast. Additionally, the Guardians tasked each other with soliciting information from their respective constituents, by interviewing the ‘old codgers’ and surveying current fishery participants to gather historical

anecdote and community knowledge to address information shortfalls. One government observer noted the ethos of shared endeavour this approach created among the Guardians' members:

"The Guardians approach used a shared information system to withstand scrutiny. If you were to continually push a given view or bias, then it may be unsustainable to stay within the group" (G:26-27).

The process of collecting relevant data also greatly enhanced the group's credibility among managers in the government. One of the items identified using the map were areas of high biodiversity with fragile species, places the Guardians recognized as being vulnerable to damage from anchoring, careless diving, or gear impacts. As one government interviewee reflected upon the evocative term used to describe these special areas:

"They had that lovely phrase which they called the 'china shop,' which I just loved! ... fascinating, it just demonstrated to me that they knew this area absolutely so much better than having somebody in Wellington do it ... it was just superb, it was total ownership and knowledge" (G:20).

Data gaps existed in central government as well; showing Wellington where to find these special places credited the Guardians' diligence in seeking to protect Fiordland. Still, not all information collected was shared, as several participants acknowledged the creation of a secret file of china shops:

"Some of them were so delicate that we really didn't want anyone to know where they were – immediately [when] it goes in a marine reserve, it becomes public knowledge that its there, and of course everyone wants to go see them, and when they do they knock them around" (S:2).

Thus, one favoured protective measure was simply to keep mum on where the special places may be hidden.

The group bolstered its own knowledge by inviting several scientists to collaborate with the production of a comprehensive survey of Fiordland's resources. Subsequently, MFish published the compendium as "A Characterisation of Fiordland's Fisheries: Beneath the Reflections" (GOFF 1999). This was followed by a comprehensive listing of research publications available to describe the nature of the

fisheries within the fiords, *“Beneath the Reflections: Fiordland’s Fisheries and the Marine Environment, a Bibliography,”* published by DoC (GOFF 2001).

6. Assistance from government

With information needs satisfied, the Guardians could focus on discussing what actions could be taken to improve the management of the marine area. The organizational design embraced by the Guardians included a core contingent of representative stakeholder that engaged in discussions and negotiations on behalf of their constituencies. Surrounding these decision makers were several supporters, including the facilitator, Laurel Teirney, an independent scientific assessor, and representatives from MFish, DoC, Environment Southland (the local government authority under the RMA), and Ngāi Tahu. While the decisions were kept with local residents and user groups, participants expressed gratitude for the additional expertise brought to bear:

“They [central government] were very integral in the whole thing, because when you would have a problem like ‘Well, how do we stop recreational fishermen taking all these fish in the bay?’ ... the MFish guy would say, ‘Well you can use this tool, or you can use that tool,’ so they were able to come at it with a lot of solutions for our problems.” (S:3)

However, MFish support soon waned as MFish focused more on market-based instruments as a policy of managing fisheries, rather than the sort of community planning model that the Guardians embraced (G:5). The Guardians continued, with the support of Laurel Teirney who left MFish South to work as an independent consultant. At this point, the group’s focus expanded to include the marine environment beyond just managing fisheries. Ostensibly, this was in recognition of the broader concerns beyond fisheries; cynically, however, at least one interviewee has suggested it was to create a ‘hook’ by which to obtain funding from the Ministry for the Environment (“MfE”) (S:14).

Some observers question why the group solicited support from MfE rather than from DoC, since not only did DoC have a strong interest in conservation, it also already had a strong presence in Fiordland due to its management of the Fiordland National Park. A short response to the question is merely that MfE had an available budget that could be applied for with its Sustainable Management Fund. More

considered responses suggest that the selection was deliberate and in keeping with the ethos of the Guardians' process:

"MfE has not got an army of people working out in the provinces, as a policy. If its going to get anything done it has to partner with people, so MfE tends to work with people a whole helluva lot more than DoC, which tends to make people work for them ... working with actually achieves the outcome that will last" (G:21).

And:

"Conservation is keeping the good things good, Environment is cleaning up, and setting the rules for the future – Fiordland is about setting the rules for the future, but instead of it being top-down setting of rules, we tried another method" (G:19).

Less charitable observers suggest that the Guardians may harbour mistrust for the DoC bureaucracy. However, stakeholder interviewees were quick to point out that there is a distinction between the local DoC employees and those in central government:

"Where we ran into problems is when it then got to a level of sophistication that it went to Wellington and central government, and had an involvement with people who were more bound up with policy, more bound up with transboundary relationships between agencies – 'How's this going to affect my job, how's this going to affect my patch?' – rather than what's the best thing for Fiordland. On the local level, the agencies were terrific and the people were terrific; when it got to Wellington it got a bit messy and we needed the intervention from the relative ministers of those departments to get them to cooperate, so there was a battle at that level" (S:3).

The approach taken by the Guardians in working with government agencies was to start with the focus on what was perceived to be the best action for Fiordland and the group's vision, rather than starting with the statutory authorities of the given agencies first to see what could be done (Teirney 2006:3). Thus, the Guardians often challenged members of the government sector beyond their usual roles (Id.).

7. Building the strategy

Once information needs were satisfied and support networks established between government and the Guardians, the group conjured up a list of 45 issues affecting Fiordland's fisheries and marine environment. Using a graphic network mapping exercise, the group was able to cluster these issues into four groups of impacts, which "formed the backbone of the strategy" (Id.). The four components of the strategy included provisions to address fisheries management, commitments to protect "values of special significance," identification of potential risks and measures to respond to them, and expression of *kaitiakitanga* in keeping with Māori tradition and ties to the area (Id.:4-5).

Developing a strategy that would address the concerns identified required concessions on the part of those groups that rely upon Fiordland's resources. In order to preserve the cohesion of the group in what could otherwise be a contentious negotiation, the facilitator applied another ground rule, that of the "balance of gifts and gains" (Id.:3-4). Under this approach, before asking for concessions, a representative would first offer a concession for the good of Fiordland consistent with the vision adopted by the Guardians in the first meeting. If this concession benefited another group as well, principles of fairness required reciprocation, thus escalating the "gifts" committed to the strategy (Id.:4). Several stakeholders expressed that this was the key to achieving a negotiated package:

"Basically everyone bent to help the rest. Overall, I believe that when you first read the whole [strategy], it looks totally complicated; but as you go through the whole process it looks very good because it wasn't based on what people should have, its based on the environment and what it would support" (S:12).

As an example, early in negotiations commercial fishing interests volunteered to stop fishing in the fiords altogether and restrict their fishing to the outer coast as their gift; in return, recreational fishers volunteered to drastically reduce their take (Teirney 2006:4). The philosophy for allocation between users became "Everyone gives a bit – everyone gains a bit" (Id.).

Several observers in government commented on this approach. Some saw the "gifts and gains" philosophy as pivotal in making the process work by underscoring the vision:

"[There was a] level of a willingness to compromise for the greater good, that is 'this is good for Fiordland, therefore I'm willing to lose out a bit individually because I believe in this' rather than 'I'm only interested in my commercial fishing,' or 'I'm only interested in something else...'" (G:4).

But not everyone was convinced. Some interview participants suggested that while it sounded good as described, the concessions offered in some cases did not always add up to much:

"There really was no commercial fishing in the inner fiords left anyway, so they haven't really given that terribly much up. Each of them says that they've given up lots, but again, it's not that much that's really been 'gifted.' Still, it's a good start and a good model to look at how you might have least effect or impact on other people, so ... giving up a little bit, but not huge amounts..." (G:10).

Members of the environmental community, too, expressed reservations:

"I was pretty concerned about the type of approach that they had used it was fairly inward looking; there wasn't a lot of consultation amongst interested parties. Several of us were a bit concerned about this sort of method of approach -- it was more or less telling the public what they thought was good for the public to know, rather than bringing the public into their confidence" (E:37).

Members of the environmental community also noted that the process failed to address marine reserve designation; marine reserves were simply not on the agenda:

"[The Guardians believed] fisheries conservation was achieved with quota management, and marine reserves were superfluous to the needs for marine conservation, and I must say that line was pretty well the line of those around the table" (E:38).

Nonetheless, the Guardians negotiated a draft integrated management strategy that they believed would respond to the problems they saw occurring in the fiords (GFFME 2002).

8. Consultation and the addition of the conservation viewpoint

With a tentative deal the Guardians could agree upon, but no clear vehicle to implement it, the Guardians sought support from central government. Presenting the package to the Ministers for Fisheries and the Environment as a Draft Strategy, they were advised to improve upon the environmental aspects of the package. As one government interviewee remembers:

“They were missing a few things, they forgot marine mammals, and they forgot to put in the marine conservation side of their equation early on. They came up with a strategy and brought it to government we told them to go away and please add on your green side. And that’s when they ...actually included [University of Otago Botanist and Forest and Bird Officer] Alan Mark from the environmental side of things, and [Otago University Marine Biologist] Steve Wing came on board and actually put some science in, and I think that really boosted their understanding of the whole area and allowed a little more argy-bargy about where they might put reserves aside. There was not an agreement about what those areas might be, but they recognized that they might want some reservation of the environment, and through Steve Wing could put some really good understanding on getting good coverage geographically” (G:8).

Both observers and participants in the Guardians’ process alike noted the initial exclusion of representatives of the environmental community. Some in the environmental community took umbrage with the process:

“We appreciate the idea of getting people together, but when people get together and actively exclude some stakeholders, we think it is a seriously flawed process” (E:13).

Members of the stakeholder community defended the action as necessary to support cooperation in the early discussions. Rather than excluding participants based on ideology as members of the conservation community suggest, stakeholder interviewees claim the basis for exclusion to be predicated on perceived extremist biases – both for conservation and for extractive use – that would prevent operation of the ground rules established by the facilitator:

“What we did strategically was keep the radical views from both the utilization side – the guys who said ‘I want to get in there and catch as many fish as I want to catch and you have no right to stop me’ and they were entrenched in that view – we also kept the radical green element out of the process – those that said “No, we want to lock the whole thing out, and kick all the fishermen out, they’re all animals and bad bastards, you know we don’t want them in Fiordland, this is our place.’ So we kept those two views from the table, ... and that doesn’t actually surface again until the public consultation round, which enabled them – the moderate people, those that could work together to form a consensus together – enabled them to work together and screw the consensus” (S:5).

This view put the process first; rather than have complete representation, the Guardians chose selective representation of parties deemed willing to support the process. Some interviewees in the government sector agreed with the interpretation that initially selective membership prevented costly delay in what was already a lengthy process:

I think, again this is a personal view, if you put in your Conservation people, put in your environmental Forest and Bird or whatever-type people in that group in the early days, you probably would have possibly had a longer process trying to get people to work together. It would’ve been a harder challenge. I’ve seen a lot of other groups where it’s very difficult to actually get commercial fishermen and recreational fishermen to sing off the same song sheet; they often come from different views” (G:26).

In response to the government’s concern over the lack of representation of any of the national conservation groups, the Guardians included Alan Mark, an alpine botanist from the University of Otago who was also a member of the New Zealand Royal Forest and Bird Society and had previously held high positions in the organization. Not all members of the environmental community were happy with this appointment:

“Fiordland ... has been quite different [from MRA71 designations] in that the groups there actively excluded the national environmental groups. [...] Forest and Bird was excluded initially and eventually managed to get someone in, but they did not allow in their marine people. They only

allowed in a terrestrial botanist who wasn't a specialist, knew nothing of marine reserves, and had to be briefed by the marine people. So, in terms of process we regard the Fiordland one as good in some measures, but absolutely abysmal in terms of the exclusion of very significant stakeholders." (E:12)

Given the hostility towards marine reserves among the Guardians, the lack of marine reserve expertise probably contributed to their acceptance of Dr. Mark, as did his residence. Critically important for the group's "locals only" ethos, Dr. Mark was a Southlander first and foremost. As Dr. Mark put it:

"Forest and Bird would rather have had one of their staff on it than me," Mark explains. "But I was marginally acceptable to Forest and Bird, and marginally acceptable to the Guardians" (Carey 2004:75).

But the nature of his environmental background provided a strong preparation for work as a Guardian. In the 1970s, Mark was active in the "Save Manapouri!" campaign, in which one outcome was the establishment of a local stakeholder advisory group which he sat on, the "Guardians of Lake Manapouri," to assist in the management of hydropower facilities in Fiordland National Park in such a way as to minimize adverse environmental impacts (Mark, Turner, and West 2001:8-9). He further burnished his Fiordland credentials with the publication of a survey of ecological research used as the basis of the Fiordland World Heritage Area (Mark 1998).

The Guardians may themselves have become more representative through the addition of new members, but by then the draft strategy had been largely worked out and was ready for public comment. The Guardians published the package of measures in September 2002 as the *Draft Integrated Management Strategy for Fiordland's Fisheries and Marine Environment* (2002), and began a series of public meetings to solicit public comments. Some interviewees suggest this step was more for show than to integrate suggestions into the plan:

"I have to say that – and it was probably predictable – there was very little change despite the submissions that came in, between the competition of the strategy and what was finally the approved document; so to that extent I think the consultation process was a bit of a charade. Because there were quite a spectrum of views that came in on the submissions, but in the event, very little was changed" (E:38).

The final strategy adopted by the Guardians underscores this statement. Unlike in the application for the Auckland Islands Marine Reserve, the Guardians' final strategy makes no mention of public submissions on its Draft Strategy, or any incorporation of public testimony (GFFME 2003).

9. *The Fiordland Conservation Management Strategy*

In September 2003, the Guardians released the finalised version of their preferred package of management tools as the *Fiordland Marine Conservation Strategy: Te Kaupapa Atawhai o Te Moana Atawhenua* (GFFME 2003). The final strategy included concessions from every sector to promote the vision. Commercial fishers agreed to withdraw their fishing effort to outside the habitat lines altogether, only using the fiords for storage of unbaited rock lobster pots and live storage cages (Id.:46-48). Recreational fishers agreed to severely reduced bag limits, for example slashing the daily take of blue cod from thirty fish to only three (Id.). The recreational interests, both recreational fishing groups and charter boat operators, also agreed to disallow accumulation of daily bag limits (Id.:45). Rather than fishing for a week to fill a freezer, the rule would be to 'fish for a feed' (Id.). Recreational fishers also agreed to a two-year closure on fishing for blue cod in Doubtful and Milford Sounds, with an additional two-years if deemed necessary for rebuilding of depleted stocks (Id.:46).

The Guardians also committed to protecting "values of special significance," identifying several locations at high risk to disruption of the biodiversity there, the "china shops," which would be subject to various restrictions depending on their characteristics, such as anchoring prohibitions, fishing closures, and code of practice to prevent divers' disturbances (Id.:49-57). The Guardians also designated areas significant for their representativeness, which would be off-limits for fishing for all sectors, including recreational and customary fishing as well as commercial fishing (Id.:50,58-61). The Guardians did not commit these areas to be marine reserves, but acknowledged that such a tool "may be appropriate" for the protection desired.

Out of the information sharing, and discussion, the Guardians also developed a list of potential risks to protect against. At the top of the list was the threat of bioinvasion, and the Guardians recommended a code of practice to minimize the threat and monitoring and response programs in the event of an incursion (Id.:65-69). Additional threats include pollution threats, physical damage (such as from structures, anchoring, ship's wakes, and land slips), altered flow due to hydropower in Doubtful Sound, and the impact of increasing numbers of visitors on wilderness values and

visitor expectations (Id.:69-73). The Guardians stressed the importance of collaborative efforts between local constituents and government agencies working in an integrated manner to best respond to these threats (Id.).

Assuring proper stewardship of the area was also important to the Guardians, who sought to express *kaitiakitanga* through their efforts. Ngāi Tahu has long had ties to the Fiordland area as formally recognised by the New Zealand government (*Ngāi Tahu Claims Settlement Act* 1998: Schedule 102). Any management package would need to respect that association (GFFME 2003:76).

Early in the process, the Guardians thought provisions in the Fisheries Act 1996 allowing integrated management of a marine area under fisheries plans or *taiāpure*¹² would allow implementation of the strategy (Id.:77-78; *Fisheries Act* 1996). However, legal review of the statute revealed that it did not authorize the range of measures being considered by the Guardians to control impacts beyond just fishing such as anchoring and diving restrictions and management of adjacent land activities (GFFME 2003:78,82). Nonetheless, several of the fishery management provisions recommended by the Guardians are consistent with traditional customary fishery management measures, for instance, the closure of Doubtful and Milford Sounds to blue cod fishing follow provisions in the Fisheries Act 1996 that give statutory authority to traditional Māori *rahui*, or reserves (*Fisheries Act* 1996). By adopting customary fishery management principles and providing for an ongoing consultative role for the Guardians, including Ngāi Tahu, *kaitiakitanga* was expressed (GFFME 2003:14).

10. Legislative enactment

Once the carefully balanced integrated management strategy was prepared, the Guardians were unsure how best to give effect to its provisions. *Taiāpure* had already been ruled out as legally insufficient for the broad measures recommended (Id.:78. Between all of the agencies, however, the different aspects of the package

¹² The word *taiāpure* is defined as “a stretch of coast, reef or fishing ground set aside as a reserve for inland tribes to gather shellfish or to fish.” *Te Aka Māori-English, English-Māori Dictionary* - Online Version, available at <http://www.maoridictionary.co.nz/> (last visited October 1, 2007). However, the word has curious origins:

“[A] provision in the Act establishes the Crown’s authority to declare a coastal or estuarine area as a “*taiāpure*-local fishery;” *taiāpure* is a legal term coined for this management tool combining *tai* (sea) and *āpure* (patch) to describe its territorial nature. *Taiāpure* are declared upon consideration of a proposal stating why the area ... has customarily been of significance to *iwi* [tribe] or *hapu* [sub-tribe] either...[a]s a source of food; or ... [f]or spiritual or cultural reasons.” A committee appointed from nomination of representatives of the Māori community manage the *taiāpure*-local fishery (the appointees themselves need not be Māori)”

(Mize 2006b)(footnotes omitted).

could be implemented (Teirney 2006:5). But depending on existing authorities meant relying on various statutory requirements not well coordinated with each other, threatening to upset the delicate compromise (Id.). In the Guardians' view, the importance of keeping the balance of 'gifts and gains' intact justified the adoption of special legislation that would be flexible enough to incorporate its terms (GFFME 2003:82).

The Guardians released the finalised strategy during a formal ceremony at Te Anau on 6 September 2003, with the Ministers for the Environment and Fisheries both in attendance (MfE 2004:2). At that meeting, the ministers committed the government to implementing the strategy by September 2005 (Id.). Given the time required for the passage of legislation in New Zealand (witness the stalled Marine Reserves Bill, for instance), many thought this timeframe was optimistic – a “seemingly impossible task” (Teirney 2006:5).

Within the two year timeframe, however, parliament enacted the Fiordland (Te Moana o Atawhenua) Marine Management Act 2005, codifying most of the strategy into law (*Fiordland (Te Moana o Atawhenua) Marine Management Act 2005*) (hereinafter “FMMA”). Other parts of the strategy were coordinated with the FMMA, such as amended fisheries regulations under the Fisheries Act 1996 as well as non-statutory provisions, such as the development of code of practice (Teirney 2006:5; FMMA: Preamble [6]). A key provision in the FMMA established an ongoing role for the statutorily created “*Fiordland Marine Guardians*.” The Fiordland Marine Guardians were to be comprised of eight representatives of various stakeholder interests, predominately Southlanders, to be appointed by the Minister for the Environment, with one representative assured to Ngāi Tahu (FMMA: Sections 12, 15). The new Guardians, as government appointees rather than the previous incorporated organization that developed the strategy, would serve as an advisory body to assist in the management of marine resources within the Fiordland Marine Area, designed largely to mirror the efforts of the former group (FMMA: Preamble [7], Section 26).

One thing notably different between the strategy developed by the Guardians and the FMMA was the inclusion of marine reserves. The FMMA created eight new marine reserves to protect the identified representative areas (FMMA: Section 7). The FMMA specified that the specified reserves were “deemed to be marine reserves declared under section 4(1) of the [MRA71]”, incorporating offence, enforcement and penalty provisions of the MRA71 (FMMA: Section 8). However, the FMMA established reserves according to schedules to the Act, which included provisions not otherwise allowable under the MRA71. For example, provisions include the preservation of

customary rights of Ngāi Tahu to collect *pounamou* and parts of stranded marine mammals, and also allow rock lobster fishermen to store pots and live lobsters in cages in some of the marine reserves, both activities which would not be allowed in marine reserves established under the MRA71 (FMMA: Schedules 3, 5, 6, 10, 11).

As a trade-off for the establishment of eight marine reserves in one fell swoop, the FMMA also included a moratorium on new marine reserve applications for a period of up to seven years, or upon completion of a ministerial review of the FMMA five years after its passage, whichever comes first (FMMA: Section 10). As one government interviewee observed:

“You already had agreement among the major likely protagonists that: A) protection was necessary, B) the places the protection would occur, plus or minus a little bit, and C) that having agreed to this level of protection they were happy for that to occur but they didn’t want it to become what they called ‘creeping green’ they wanted to be able to say ‘We’ll give you this much, now you promise not to change the rules for say, five to seven years,’ and that was an important deal.” (G:15)

Thus, as in the case of the two prior Fiordland marine reserves, it appears to be a trade of reserve protection in return for certainty to industry.

Interviews conducted for this thesis did not overtly reveal opinions about the adoption of marine reserves as a tool to protect the representative areas. A common response from stakeholders suggests that marine reserves were accepted due to resignation to the designations as a political deal to get the entire FMMA passed. As one stakeholder put it:

“We initiated the process of better management of the marine environment, and that process eventuated in marine reserves. We didn’t set out to create marine reserves as such; we set out to get in place a management structure of the fisheries and marine environment of Fiordland that would safeguard it for future generations. An outlier of that, an outfall of that, was the creation of marine reserves later in the process” (S:1).

In the government sector, interviewees acknowledged the process as one way to achieve marine reserve designations. One interviewee, while observing that the

Guardians' process was not originally intended to be a marine reserve designation process, gleefully remarked:

"But doesn't it work well! (laughter)" (G:20).

Other government interviewees were more tempered in their responses. One government interviewee defended the implementation as pragmatic, and vehemently denied any expectation of getting marine reserves through the Guardians' process:

"[Consider] the hidden agenda thing – in the meetings I went to there wasn't any talk of 'We're going to get marine reserves.' It was about making sure people were involved" (G:32).

More commonly, government interviewees stressed that marine reserves were just one part of a broad and multi-faceted approach to marine conservation that the Guardians were able to employ:

"Think more widely than marine reserves – think marine protection. Marine reserves are only one select, discrete tool, the Guardians process has got quite good overview of looking at different tools to provide marine protection. Marine reserves are just one tool for the concept of marine protection" (G:23).

"They weren't talking about marine reserves, they were only talking about areas that were going to be set aside for biodiversity protection, about representativeness, they actually didn't want marine reserves because they saw marine reserves as being the wrong tool – they were talking about a number of different mechanisms . . . with protections" (G:13).

And:

"But if you were to say that what is currently in marine reserves is all that will be protected and you can trash the rest, then it is woefully inadequate... How much you have in marine reserves is highly dependent on what other forms of management you have all the way from simple controls on the fishing to virtual marine reserves because you've restricted almost everything" (G:7).

And:

“One of the really the good sides of [the Guardians’] process was that they actually attempted to include everything in their discussion, so they were looking at things like biosecurity and other issues, it was planning on a broader scale. Prior to that, all New Zealand reserves were ‘first-in, first-served,’ everyone that wants one near their patch says ‘let’s think about it and go through that statutory process’ which puts the pressure on for a race for space – mataitai, taiāpure, aquaculture – all rushing in at the same time, and not in a cohesive way” (G:7-8).

Thus, interviewees from both stakeholder and government groups acknowledge the marine reserves in the FMMA as being a part of the whole, that the process itself was more about integrated management than designating marine reserves.

Interviewees in the environment sector were less inclined to consider the integrated management aspects of the FMMA as a positive, focusing their comments instead upon the inadequacy of the marine reserves:

“When you sit back and think about ... the nature of the biodiversity involved there ... the targets were far too low ... the level the marine reserves that were finally designated were in fact pitiful in terms of actual percentage and significance of biodiversity in the area” (E:13).

And:

“We had hoped with Fiordland that the area of actual marine reserves would be bigger. We think that it makes sense to have a sort of mosaic of protection. For instance, the percentage of marine reserves within the fiord itself was pretty small and there nothing out from the mouth into the waters. The areas of marine reserve are like tiny dots - they are not in any kind of coherent system. From that point of view we felt that the targets for reserves should have been much bigger” (E:17).

However, many of these concerns for the level of protection appeared to stem directly from the concern over the Guardians’ exclusion of the environmental community in the early days. As one interviewee noted:

“It was from our point of view very unsatisfactory to only be able to make submissions when a deal had already been done ... We were not able to influence the degree of protection inside the deal and then they were totally reluctant at that late stage to then entertain any of the suggestions that we made for how it could be changed” (E:17).

Government interviewees acknowledged this lack of appreciation by the environmental community, but defended the outcome as being positive for conservation:

“I think it’s a stepwise thing – I think a lot of conservationists might say that it wasn’t enough, and there isn’t the full representation, for instance, the open coast isn’t represented in the suite of measures. But, there is five-year monitoring in place and I don’t think you need to go for everything in one hit, a stepwise process is alright, and there’s a HUGE amount of conservation benefits from it, 13% of the inner waters is protected ... HEAPS of conservation benefits” (G:30).

And as a stepwise process, the Guardians still have their work cut out for them in managing the suite of measures into the future.

11. The Fiordland Marine Guardians – an ongoing role

In the meetings of the Fiordland Marine Guardians observed over the latter half of 2006, it became apparent that the forum enjoyed deference of government agencies, despite its nominal advisory role. This was not always appreciated by central government officials, who appeared unaccustomed to deferring to authority outside Wellington. As an example, the Guardians recognized an increased risk of bioinvasion by the invasive seaweed *undaria pinnatifida* after the central government halted the funding of control measures in 2004 (Fiordland Marine Guardians 2006:13). The formal advisory capacity of the Guardians gave the locals more standing to challenge the central government’s decision than would have been the case in the absence of that statutory authority. Likewise, user groups outside Fiordland cooperated with the Guardians. For instance, the Deepwater Stakeholder Group (a national fishing industry organization) proposed benthic protection areas (“BPAs”), or no-trawling zones, in the EEZ that as originally proposed would have encroached upon the Fiordland Marine Area (Id.:11). Upon learning of the Guardians’ authority, the

group adjusted the proposed BPAs to stay beyond the territorial sea limits of Fiordland (Id.).

But fishers may say one thing in public arenas such as at meetings, yet tell entirely different tales in more informal settings like on the boats, or in the pub. During visits to Fiordland as part of the blue cod assessment charter, this researcher had an opportunity to hear various stakeholders and views about the suitability of different aspects of the protective regime adopted in the FMMA (**see figures 21 and 22**). From this admittedly limited experience, it was clear that not all affected stakeholders agree that all measures adopted are necessarily the most appropriate, especially, for instance, catch restrictions and exclusions such as those from the establishment of marine reserves. Nonetheless, there appeared grudging satisfaction that such measures were home-grown solutions rather than imported from Wellington or beyond.

Figure 22 – Blue Cod Monitoring Survey, November 2006



The monitoring program established to determine the efficacy of the moratorium on recreational harvest of blue cod in Milford and Doubtful Sounds required data collection to mimic prior years' recreational logbook data as much as possible for comparison purposes. Note that while the boat was less than 20 metres offshore at this station in Milford Sound, the depth was in excess of 100 metres. The ubiquitous presence of waterfalls due to the steep cliff faces and high rainfall in the area meant that even on a sunny calm day the crew would get drenched.

Figure 23 – Measuring and Tagging Blue Cod before Release



The crew measured and returned to the sea all fish caught during the blue cod monitoring survey; blue cod were tagged before release with condition noted in the logbooks.

12. Reactions to the FMMA approach

The New Zealand parliament unanimously passed the Act, leading several observers to wonder whether with such broad political support a similar approach might work in their own area. As a result, the process followed by the Guardians has attracted several studies and reviews to try to tease out lessons for application elsewhere.

Central government studies, such as those commissioned by DoC or MfE, have focused on attempts to generalize lessons or principles out of the Guardians' process in order to apply it as a model in other places (Player 2004:36, McCrone and Challis 2005:9, Mize and Irving 2006). For instance, one report distils a brief list of ingredients it deems necessary for a process like this to work, including a shared vision, a common data set, committed representation from constituent groups, government support, time and trust, and strong political champions (Mize and Irving 2006). At least one other *ex post* analysis has highlighted this last point, that of political championship, using a public choice theory framework to characterise the Guardians as "political entrepreneurs" able to mobilize collective action among their

constituencies and thus to achieve the legitimacy necessary to support enshrining their goals in legislation (Cameron 2006:267).

But what do the interviewees say? Some interviewees in the government sector support the view of local Fiordland user groups uniting to act as political entrepreneurs, saying (for instance):

“What you had were some smart stakeholders – this was a group of people that figured that the government processes were not serving them very well – they wanted some stuff, primarily what they wanted was certainty, and a lot of this was driven from the commercial industry, but everyone else too was involved, but they wanted certainty and they couldn’t get it from the government ... it seems to me that what the various groups have said is ‘If we rely on the government, A) it will take a long time, and B) we don’t know what we will get. We want to be more in charge of this; we want to have greater control over our destiny.’” (G:1-2).

However, more often, interviewees adopted the approach of those in central government, considering practical aspects of the Guardians’ process that contributed to the outcome of marine reserve designations. These attributes generally focused on the people involved and the place being protected, and the two are closely intertwined.

The chief characteristic noted about the Guardians and the people they represented was the particular sense of community found in Fiordland. One contributing factor is the remoteness of the area and sparse population:

The numbers of people that go into Fiordland are actually quite few – if you discount the tourists that go in there just for a day – the actual number of people that live and work in there are very few, so whatever we come up with it wasn’t going to affect too many – like the Huaraki Gulf would be the converse of that because you’re interfacing there with a million people, you know, you have a million different ideas about how the environment should be run – in Fiordland you have very few people actually live and work there, that made it relatively easy” (S:2-3).

This low population affects the way in which people interact with each other, affecting the process, and its replicability in areas without similar traits. As one government interviewee noted:

“You can’t just cookie-cutter this thing across the country because it was dependent on ... a particular type of people ... who identified closely. You might get something similar at the Chatham Islands, for instance” (G:3).

This factor was consistently observed among the various groups. In the words of an environment interviewee, when considering whether a Guardians-type process might work in the Caitlins region of New Zealand’s South Island:

“The South Coast does not aspire to the level of Fiordland, the interests have more people involved, and divisions are deeper – while some people view Fiordland as a sort of model to use throughout the rest of the country, I think it would be very difficult to repeat the Fiordland experience with the level of success that its enjoyed there in other parts of the country” (E:40).

At least one stakeholder agrees that along the South Coast people did not share the same common purpose as exhibited in the Fiordland process:

“Everyone was looking to push their own barrows” (S:8).

So it is not just the people of Southland, but also the place – Fiordland – within which they relate that makes the difference.

What is it about Fiordland that inspires such passionate identification that people set aside self-interested barrow-pushing for the sake of the area? Several interviewees referred to the area as “*iconic*,” and it was this iconic standing that factored the most. As one stakeholder puts it:

“I’ve always thought that it was relatively easy to do for Fiordland, the reason being that the environment of Fiordland speaks for itself, and so nobody from any faction was going to deliberately stuff up that environment. Everybody – no matter how you used it or how you thought about it – was going to look after it. And so the environment set the agenda, if you like, rather than the people; whereas if you go to some other area and you might try to do the same from a community-based, bottom-up type management strategy, I’m not sure whether the environment is the thing that holds everybody together in quite the same way” (S:9).

This recognition of the iconic environment obscures the ruggedness of the environment:

“People often mistake that part of New Zealand, it looks so scenic and beautiful and all that, they don’t realize how tough it is – and it is truly tough” (G:20).

This toughness shapes the people in return:

“There’s nothing fancy about them, they say things as they are, and that allowed for the lack of game playing. They knew what their beliefs, their belief systems were, and what they needed to survive” (G:20).

So it is not so much just an identification with place, as it is a sort of mutual symbiosis between the people and the place that gives rise to the level of commitment that allowed the Guardians process to succeed. One stakeholder notes this relationship with the place as the key to the process:

“Key to me is that it is a special place in New Zealand that I have had a lot of experiences in, and I didn’t want to see it taken off the people of New Zealand and the everyday person that makes the effort of going there, whether it be for fishing, kayaking, or otherwise... I think what the Fiordland Marine Guardians managed to do is to bring each of those groups close together and understand what the importance of each others views in using, and not abusing the area” (S:13).

And in the words of another stakeholder:

“I think first thing, the people who were on the ground cared a lot, and if there’s an opportunity for them to actually do something which is going to actually improve things the way they want them to be improved, then they’re going to be in there boots’n’all and they’re going to have a huge amount of commitment. And that’s happened with all those groups, they have actually been the people of the area... and they don’t want any of the people from outside the area that don’t know a blind thing about the area to come in and dictate to them” (S:15).

V. Discussion

Managers charged with designating marine reserves are faced with a choice of how best to go about the designation. The IUCN *Guidelines* suggests that it is best to favour “bottom-up” processes as much as possible, but without guidance as to when it may be possible, this advice does not go very far. Recognizing that management agencies are often caught between the demands of local, resource-dependent communities on the one hand and distant conservation interests on the other, this thesis looks to the two selected case studies to see if any guidance may be found.

A. Auckland Islands

In the Auckland Islands marine reserve designation process, the forum for consultation was already established by the authorizing legislation, the MRA71. Despite this, DoC went further in its own process of developing a robust pre-statutory consultation period. Some may question how robust this preliminary consultation actually is, without the statutorily required framework it may result in an ad hoc application. That the agency does not disclose who it initially consulted with, nor does it specify who was sent copies of the discussion document, it is not clear whether all stakeholders were identified or not. As such, DoC’s approach in the Auckland Islands Marine Reserve is “top down” approach.

Though no interviewees expressed specific knowledge of this, it seems plausible that DoC assessed the primary stakeholders, and found that there were no significant stakeholders in the area. Commercial fishers were not dependent on the resource due to their exclusion under the Marine Mammal Protection Act. Recreational fishers were non-existent in the Auckland Islands because of the remoteness of the area. Māori interests were not involved due to the non-inhabited nature of the islands and lack of customary use of the marine area. Nor are individuals not directly dependent on the resource live nearby, and those few that do so in a transitory nature – visiting the islands as members of industry not directly dependent on the extraction of marine life (i.e. ecotourism operators, transiting vessels, marine salvours) or belonging to the scientific research community.

DoC serves as the government agency responsible for the designation, and the managing entity that must weigh conflicting priorities between stakeholders and environmental interests, however DoC has its own conservation aims and is not a dispassionate manager. Other local governments are not affected because there is no local government at the Auckland Islands, and in fact, the RMA assigns DoC the authority of a local government over the subantarctic islands. Indeed, DoC's authority under the RMA makes it the most notable member of Shepherd's classification of secondary stakeholders. Under Shepherd's typology, DoC also fits in the category of "tertiary stakeholder" – "national level government officials and international conservation organizations" – giving it even greater relevance in decision-making within the Auckland Islands area. For the purpose of the modified typology embraced by this thesis, despite its managerial role, DoC best fits within the category of environmental interests (as opposed to resource-dependent stakeholder).

In contrast to the low level of engagement in the area by primary stakeholders, the Auckland Islands enjoy considerable attention from other tertiary stakeholders, including international conservation organizations such as the World Conservation Union and the New Zealand Forest and Bird Society. Striking in the responses to the proposed designation are comments submitted by individuals not of the area and with little connection to the area other than a strong belief in the importance of protection of the subantarctic islands. Not clearly members of "international conservation organizations," these individual commentators appear highly disorganised, offering comments on their own volition. Nonetheless, under the modified typology embraced in this thesis, such diffuse interests that do not depend on the resources being reserved belong in the "tertiary stakeholder" classification. In the Auckland Islands Marine Reserve designation process, then, tertiary stakeholders ("*environment*") appear to greatly outnumber primary stakeholders ("*stakeholders*").

Looking at these groups through the lens of Mitchell et al's stakeholder salience model reveals further insights. While fishing groups have legitimate interests in the marine space, the low numbers of fishers active in the area reduce the power associated with this group. Likewise, since already excluded from fishing in the area proposed to be designated as a reserve, and since concerns over restrictions on anchoring are not due to any imminent threats, their plight could hardly be deemed urgent. Other groups, such as recreational charter tourist operators, also have legitimate claims but through lack of collective action, insignificant power and diminished urgency.

The environmental interests, however, are well represented. Their claims for conservation are legitimate, as described in the rationale for designation. The sympathies of Ministers intent on honouring commitments under the CBD lent power to the group. The push for protection from the World Heritage Commission as well as national-level politicians gave a sense of urgency to this group's claims. Applying Mitchell et al's descriptive framework, the environmental interests were the definitive stakeholder in the process.

B. Fiordland

A stakeholder assessment in the Fiordland area reveals dramatically relations between various interests. Primary stakeholders abound in Fiordland. Commercial fishers depend on the fiords for their catch and for storage of gear and product, in addition to transit and shelter. Recreational fishers and charter boats similarly use the fiords. Ngāi Tahu also depend on the fiords for customary fishing and collection of *pounamou*. Primary stakeholders do not only consist of extractive users, however, non-extractive uses also depend directly on the marine life, as (for instance) dive charters depend on the corals and other marine life as an attraction for paying visitors. So too do the tourism industry and support industries around it greatly care about the health and welfare of the resource-dependent community that either form or attract their customer base. Others who live near Fiordland may care just because of the importance to them of having such an iconic landscape in their own backyard, whether or not they stand to achieve any tangential economic gain or not. The Guardians grew out of this complex stakeholder landscape, asserting concerns of primary stakeholders first and foremost.

The environmental interests are well represented in Fiordland as well. National and international conservation organizations have considerable concern for preserving the iconic standing of the unique marine environment, with groups such as the New Zealand Marine Sciences Society and the Royal Forest and Bird Society of New Zealand advocating for increased protection, as well as interest from the World Heritage Commission. The iconic standing of Fiordland keeps the area's importance high in the minds of members of the environmental community.

Applying the salience model to the Fiordland area shows strikingly different balance of interests than that presented at the Auckland Islands. Commercial and recreational fishers started with legitimate claims, and when threatened by calls from national and international interests advocating protections that would deprive them of

their way of life, they obtained a sense of urgency, making these groups dependent stakeholders. In response to the perceived threat, the fishers gathered allies from among secondary stakeholders (using Shepherd's typology), themselves being discretionary stakeholders under Mitchell's salience model, in order to form the Guardians. The Guardians worked together to develop a coordinated approach and collected relevant data, obtaining power through both its coalitions and information, transforming the group into a definitive stakeholder.

Similar to the stakeholder group, conservation interests enjoyed power, legitimacy, and a sense of urgency. Like in the Auckland Islands, urgency was established by calls from the World Heritage Commission's calls for further protection of the Fiordland marine area, as well as pressure from the domestic conservation community. The unique marine environment and increasing impacts to it as documented by the Guardians demonstrate the legitimacy of the conservation community's claims, even though the two groups differed on the extent of protection needed. However, while the conservation community enjoyed some power through alignment with agencies such as DoC, they lacked the coordination that the Guardians were able to achieve, and the lack of integration between agencies somewhat diminished their power.

It is interesting to note that of the interviews conducted for this investigation, those involved with the Fiordland process were the individuals that most defied prior categorization. While the researcher targeted interviewees based on a preconception of involvement in one of three sectors (stakeholder, government, environment), many of those active in the respective sectors self-identified as belonging to another. While this divergence occurred in each group, it was most notable in the stakeholder group where several stakeholders considered themselves members of the environmental sector. At first, this researcher considered that perhaps the interview subjects were less than forthright in response to the interviews, but the content of the conversations belies this suspicion. More plausibly, it appears the process itself changed individuals' views. By seeking to elevate their power and building coalitions, stakeholders became environmentalists themselves and environmentalists asserted their dependence on the resource. Unlike the Auckland Islands process, the Fiordland process provided an integrated strategy that not only integrated various aspects of managing the ecosystem, but also integrated divergent views, not only between competing stakeholder groups, but also between rivals in the environmental and stakeholder communities.

C. Comparison

These assessments of the respective interests' legitimacy, power, and urgency may be expressed numerically, in a tabular view for comparison (*see table 4*).

Table 4 - Comparative Salience between Stakeholder and Environment Interests

Stakeholder Interest					Environment Interest				
	Legitimacy	Power	Urgency	Total Score		Legitimacy	Power	Urgency	Total Score
Auckland Islands Marine Reserve	1.00	0.00	0.00	1.00	Auckland Islands Marine Reserve	1.00	1.00	1.00	3.00
Fiordland Marine Reserves 2005	1.00	1.00	1.00	3.00	Fiordland Marine Reserves 2005	1.00	1.00	1.00	3.00

Comparative Salience		
	Stakeholder Interest	Environment Interest
Auckland Islands Marine Reserve	1.00	3.00
Fiordland Marine Reserves 2005	3.00	3.00

This exercise uses whole integers to express whether the potential stakeholder has the respective attribute (legitimacy, power, urgency) or not; in practice managers would apply their own best judgment of the relative weighting of the presence of one of the attributes. For instance, it would be misleading to consider that in Fiordland stakeholders and environment interests have the same levels of power, or of the other two attributes for that matter. In practice, managers may assign a percentage rather than a whole number (e.g. by way of example only, stakeholder power = .95; environment power = .80). While the assignment of relative weights to the three dimensions of salience introduces subjectivity to the assessment, the use of the structural framework to assign values helps to reduce that subjectivity.

To apply this approach as a decision-making tool, managers should first identify both local interests in the area proposed for designation and interests in the broader conservation community. Once identified, managers should assess the relative characteristics of these potential stakeholders weighted according to the

salience model. Once the two groups have been assessed and weighted with an assigned numerical value, the values should be input into the following formula:

$$\frac{(Stakeholder)+1}{(Environment)+1} \Rightarrow ManagementChoice$$

Where:

If (ManagementChoice) < 1, then "top down;"

And:

If (ManagementChoice) ≥ 1, then "bottom-up."

This formula can also be viewed in a tabular format (**see table 5**).

Table 5 – Management Choice Matrix for Selecting Designation Approach

Salience of potential stakeholders and choice of "top-down" or "bottom-up" designation model			Stakeholder Interest			
			<i>non-stakeholder</i>	<i>latent stakeholder</i>	<i>expectant stakeholder</i>	<i>definitive stakeholder</i>
			1	2	3	4
Environment Interest	<i>non-stakeholder</i>	1	1	2	3	4
	<i>latent stakeholder</i>	2	0.5	1	1.5	2
	<i>expectant stakeholder</i>	3	0.333333	0.666667	1	1.333333
	<i>definitive stakeholder</i>	4	0.25	0.5	0.75	1



= Use "bottom-up" approach



= Use "top-down" approach

This formula relies upon the classifications of potential stakeholders used by the researcher in this thesis - "*stakeholder*" and "*environment*" - to describe those members of the local community dependent on the resource and members of the broader environmental community. Generalizing this approach, a manager may apply the formula to the classifications relevant to the MPA under consideration, so long as

the categories differ in dependency on and proximity to the resource, two essential characteristics of the “stakeholder” classification used here, as with Shepherd’s primary stakeholder. Note that in cases where the competing groups have equal salience, this model advises to favour a “bottom-up” approach. This is in deference to the advice offered in the *Guidelines* to err on the side of cooperative management approaches in order to maximize the success of the proposed MPA (Kelleher 1999:31).

D. Recommendations for further work

This heuristic model may provide managers some guidance, but is subject to further refinement. Drawing from only two case studies it is not apparent whether the model applies consistently elsewhere. Further, it appears that an oversimplification of interests into a dualism of “stakeholder vs. environment” or “local vs. distant” does not adequately capture complex interactions and the basic equation may be improved upon. Still, as mentioned before this framework provides managers a more systematic method of weighing various interests rather than an ad hoc approach, and thus may have some value for managers faced with difficult planning choices when seeking to designate marine reserves.

While the *Guidelines* suggests favouring “bottom-up” processes as much as possible, that does not always mean that “bottom-up” is preferable or would be in the best interests of the agency seeking the designation. The experience of designating the Auckland Islands reserve suggests that in some cases, a “top-down” approach may be effective. If the stakeholders affected by the designation have low salience compared to proponents in the environmental and conservation community, it may be best to push the designation through with a top-down model. However, managers must establish at the outset whether the area being considered for a marine reserve has salient stakeholder interests or not, before setting out with a top-down approach in order to prevent blowback from stakeholders that refuse to support the designation.

VI. Conclusion

From the beginning of this study, people have questioned why I would select more than one marine reserve to study, and why I would choose the ones that I have. “Neither is typical!” would be the refrain. When I would explain the intent of examining two ends of the spectrum between “top-down” and “bottom-up” approaches, the next question would invariably be “Which is better?” Without fail, people would want to believe that the “bottom-up” approach is best, that there was something pejorative about a “top-down” approach to designating reserves.

Why people feel this way is beyond the scope of this investigation. Perhaps it has something to do with sympathies for participatory democracy and concerns for equity. Perhaps it is nothing so sophisticated, but merely a popular fad or meme that perpetuates among policy analysts and resource managers. A sociologist could have a field day with this question.

Nevertheless, this attitude has implications for the future success of marine reserve designations. If managers feel that “bottom-up” approaches are good, they may try to force “bottom-up” designations even where the community will not support it. If they feel that “top-down” approaches are bad, they may avoid the low-hanging fruit of opportunities to designate marine reserves using “top-down” approaches where no community would object.

Among the questions asked of interview subjects, one question stood out. Interviewees were asked what question should have been asked, and what the answer to that question should be. One stakeholder’s response resonates with this investigation; when asked what question he would ask, he replies:

“‘How do you get another one?’ There is a huge backlash against marine reserves from some sectors of the community which are quite vocal. From my point of view I think it’s quite nice to have marine reserves – that’s nice being a ‘feel-good’ nice, nothing more. From my personal point of view, they are useful for control areas for some sort of experimentation ... food web effects, that sort of thing. But they do take people’s rights (or perceived rights) away, and I think how we actually

ever get another straight marine reserve in New Zealand is a question I think I would ask – and I don't know the answer, but I think it'd be interesting to hear people's answer..."(S:10-11).

This thesis suggests that the answer to the question varies. One approach is not better than another, but rather each approach has its place and should be used appropriately. Managers should not shy away from "top-down" approaches in areas where there are few resource-dependent stakeholders with low salience any more than they should ignore "bottom-up" approaches in areas where stakeholder salience is high. By considering multiple approaches for designating marine reserves and selecting the approach best suited to the characteristics of the affected potential stakeholder groups, managers can improve their hopes for designating more marine reserves successfully.

VII. Annexes

Annex A. – VUW HEC Application for Approval for Research Projects (as approved)

Annex B. – Participant Information Sheet for Semi-Structured Interviews

Annex C. – Te Reo: Glossary of Māori terms used

Annex D. – Sources Cited

A. VUW HEC Application for Approval for Research Projects (as approved)

VICTORIA UNIVERSITY OF WELLINGTON
Te Whare Wananga o te Upoko o te Ika a Maui



HUMAN ETHICS COMMITTEE Application for Approval of Research Projects

Please write legibly or type if possible. Applications must be signed by supervisor (for student projects) and Head of School

Note: The Human Ethics Committee attempts to have all applications approved within three weeks but a longer period may be necessary if applications require substantial revision.

1 NATURE OF PROPOSED RESEARCH:

(a) ~~XXXXXXX~~ Student Research (delete one)

(b) If Student Research Degree M.Dev.St. Course Code DEVE 589

(c) Project Title: Study of Developing Marine Reserves in New Zealand

2 INVESTIGATORS:

(a) Principal Investigator

Name Capt. James M. Mize

e-mail address james.mize@vuw.ac.nz

School/Dept/Group School of Geography, Environment, and Earth Sciences

(b) Other Researchers Name Position
N/A

(c) Supervisor (in the case of student research projects)
Dr. Vijay Naidu

3 DURATION OF RESEARCH

(a) Proposed starting date for data collection 1 November 2006
(Note: that NO part of the research requiring ethical approval may commence prior to approval being given)

(b) Proposed date of completion of project as a whole 28 February 2007

4 PROPOSED SOURCE/S OF FUNDING AND OTHER ETHICAL CONSIDERATIONS

(a) Sources of funding for the project Faculty of Science Small Grants Program applied for, otherwise from the principal researcher's funds. MDS tuition & fees and modest living stipend (not research costs) paid by Fulbright New Zealand (US Graduate Student Award).

Please indicate any ethical issues or conflicts of interest that may arise because of sources of funding e.g. restrictions on publication of results

None.

(b) Is any professional code of ethics to be followed
If yes, name

xxx ~~Y~~ N

N/A

(c) Is ethical approval required from any other body
If yes, name and indicate when/if approval will be given

xxx ~~Y~~ N

N/A

5 DETAILS OF PROJECT

Briefly Outline:

(a) The objectives of the project

To identify community and location characteristics that contribute to efficacy of marine reserve designation processes as informed by opinions of individuals involved in designations of thesis case study reserves.

(b) Method of data collection

Personal interviews.

(c) The benefits and scientific value of the project

Findings are anticipated to be useful in assisting policy decisions in other jurisdictions with similar characteristics (notably Alaska).

(d) Characteristics of the participants

Members of community and stakeholder constituent groups, mid-level central government agency officials, environmental advocates

(e) Method of recruitment

Selection from publicly available lists of participants in designation Processes, direct request for interviews (in-person or phone call).

(f) Payments that are to be made/expenses to be reimbursed to participants
None.

(g) Other assistance (e.g. meals, transport) that is to be given to participants
None.

(h) Any special hazards and/or inconvenience (including deception) that participants will encounter
None.

(i) State whether consent is for (delete where not applicable):

- (i) the collection of data
- (ii) ~~attribution of opinions or information~~
- (iii) ~~release of data to others~~
- (iv) use for a conference report or a publication
- (v) ~~use for some particular purpose (specify)~~

Attach a copy of any questionnaire or interview schedule to the application

(j) How is informed consent to be obtained (see sections 4.1, 4.5(d) and 4.8(g) of the Human Ethics Policy)

- (i) the research is strictly anonymous, an information sheet is supplied and informed consent is implied by voluntary participation in filling out a questionnaire for example (include a copy of the information sheet)

XXX N

- (ii) the research is not anonymous but is confidential and informed consent will be obtained through a signed consent form (include a copy of the consent form and information sheet)

Y XXX

- (iii) the research is neither anonymous or confidential and informed consent will be obtained through a signed consent form (include a copy of the consent form and information sheet)

XXX N

- (iv) informed consent will be obtained by some other method (please specify and provide details)

Y XXX

In the event that an individual declines the signed consent but assents to continue the interview, verbal assent will be obtained and recorded.

With the exception of anonymous research as in (i), if it is proposed that written consent will not be obtained, please explain why

Some participants may not want to be identified even in a consent form, or some may be restricted by policy (e.g. government officials). If so, verbal assent confirming acceptance of the terms of the written information sheet will be recorded. If a participant declines verbal assent, the interview will be confined to non-sensitive factual information and will not solicit personal opinions or comment (Human Ethics Policy 4.8a).

(k) If the research will not be conducted on a strictly anonymous basis state how issues of confidentiality of participants are to be ensured if this is intended. (See section 4.1(e) of the Human Ethics Policy). (e.g. who will listen to tapes, see questionnaires or have access to data). Please ensure that you distinguish clearly between anonymity and confidentiality. Indicate which of these are applicable.

- (i) access to the research data will be restricted to the investigator ~~XXX~~ N
- (ii) access to the research data will be restricted to the investigator and their supervisor (student research) Y ~~XXX~~
- (iii) all opinions and data will be reported in aggregated form in such a way that individual persons or organisations are not identifiable Y ~~XXX~~
- (iv) Other (please specify)

(l) Procedure for the storage of, access to and disposal of data, both during and at the conclusion of the research. (see section 4.12 of the Human Ethics Policy). Indicate which are applicable:

- (i) all written material (questionnaires, interview notes, etc) will be kept in a locked file and access is restricted to the investigator Y ~~XXX~~
- (ii) all electronic information will be kept in a password-protected file and access will be restricted to the investigator Y ~~XXX~~
- (iii) all questionnaires, interview notes and similar materials will be destroyed:
 - (a) at the conclusion of the research ~~XXX~~ N
 - or (b) Two years after the conclusion of the research Y ~~XXX~~
- (iv) any audio or video recordings will be returned to participants and/or electronically wiped ~~XXX~~ N
- (v) other procedures (please specify):

Electronic information will be restricted to the investigator and supervisor, in password-protected files.

If data and material are not to be destroyed please indicate why and the procedures envisaged for ongoing storage and security
N/A (data to be destroyed)

(m) Feedback procedures (See section 7 of Appendix 1 of the Human Ethics Policy). You should indicate whether feedback will be provided to participants and in what form. If feedback will not be given, indicate the reasons why.

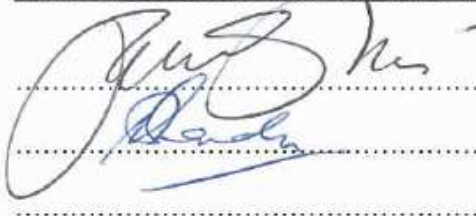
1-page summary of views will be provided prior to thesis completion for review.
Electronic copies of thesis submission will be made available upon request post-assessment.

(n) Reporting and publication of results. Please indicate which of the following are appropriate. The proposed form of publications should be indicated on the information sheet and/or consent form.

- | | |
|--|-----------------|
| (i) publication in academic or professional journals | Y XX |
| (ii) dissemination at academic or professional conferences | Y XX |
| (iii) deposit of the research paper or thesis in the University Library (student research) | Y XX |
| (iv) other (please specify) | |

Signature of investigators as listed on page 1 (including supervisors) and Head of School.

NB: All investigators and the Head of School must sign before an application is submitted for approval



Date 25 Aug 2006

Date 25 Aug 2006

Date

Head of School:


M. J. O'HANNAH

Date 28/8/06

B. Participant Information Sheet for Semi-Structured Interviews



Participant Information Sheet for Semi-Structured Interviews

Researcher: Capt. James M. Mize
School of Geography, Environment, and Earth Sciences
Victoria University of Wellington

I am a postgraduate student enrolled in the Master of Development Studies under the sponsorship of a U.S. Fulbright Graduate Student scholarship. As part of this degree and in satisfaction of the terms of the Fulbright award, I am investigating different approaches to implementing marine reserves in New Zealand. The University requires that ethics approval be obtained for research involving human participants.

My background is as a commercial fisherman in Alaska fisheries, and I recently entered law school at UCLA where I studied marine reserve designation processes in California. My research in New Zealand builds upon this as a comparative study between the two jurisdictions. I aim to learn what characteristics contribute to the efficacy of different processes of marine reserve designation, with the hope that lessons learned may be useful in developing designation processes in Alaska waters.

For my thesis investigation, I have selected the Auckland Islands Marine Reserve and reserves designated under the Fiordland Marine Management Act of 2005 as case studies to illustrate potential designation processes. Most of the research for this investigation will consist of official records and other publicly available sources, however, to make my findings more robust I also seek personal opinions and comment from individuals who participated in or are connected with the designation process in either case.

Participants will be asked to respond to a short series of questions asking about personal reflections and opinions of the designation process. Questions will likely be able to be comfortably answered within a half-hour, and no further participation would be required. There is no obligation to participate, and any individual can withdraw without question at any time before the data is analyzed and incorporated in the final thesis submission (anticipated February 2007).

Comments will not be attributed to any individual. Where comments reflect a participants' affiliation with a particular sector I will

SCHOOL OF EARTH SCIENCES Te Kura Tātai Aro Whenua

PO Box 600, Wellington, New Zealand

Phone +64-4-463 5337 Fax +64-4-463 5186 Website www.geo.vuw.ac.nz

Participant Information Sheet for Semi-Structured Interviews
Researcher: Capt. James M. Mize
School of Geography, Environment, and Earth Sciences
Victoria University of Wellington

Page 2

refer to aggregate group of stakeholder, government, or environmental to reference the perspective. All material kept will be confidential.

Interviews will be recorded electronically and/or by note taking. Only I and my supervisor (Dr. Vijay Naidu) will have access to the interview recordings and notes. All original recorded material will be kept in locked files with me. Copies will be retained by the thesis supervisor in locked files for the duration of the thesis' evaluation, for the purpose of academic verification and review, to be destroyed upon final assessment of the thesis. Original recordings and notes will be retained by myself in locked files and will be physically destroyed (shredded) two years after the completion of the project unless subsequent written consent is obtained.

Interview responses will be incorporated into the findings of my thesis, to be submitted for marking to the School of Geography, Environment, and Earth Sciences and deposited in the University Library. In addition, I intend to submit one or more articles for publication in scholarly journals.

If you have any questions, please feel free to contact me at 10C Clinton Way, Kingston, Wellington, phone (04) 389-8687, email james.mize@vuw.ac.nz; or contact my supervisor, Dr. Vijay Naidu at the School of Geography, Environment, and Earth Sciences, Victoria University of Wellington, PO Box 600, Wellington, phone (04) 463-5281, email vijay.naidu@vuw.ac.nz.

Best,

James Mize

VICTORIA UNIVERSITY OF WELLINGTON
CONSENT TO PARTICIPATION IN PRIMARY RESEARCH INTERVIEWS

Title of Project: Study of Developing Marine Reserves in New Zealand

I acknowledge that I have been given and have understood an explanation of this research project. I have had an opportunity to ask questions and have them answered to my satisfaction. I understand that I may withdraw either myself or any information I have provided from this project before the analysis of interviews is complete without having to give reasons.

I understand that any information I provide will be kept confidential to the researcher and the supervisor. I understand that published and/or presented results will not use my name, and that no opinions will be attributed in any way that will identify me. I understand that the recordings of interviews will be physically destroyed at the end of the project. I understand that the data I provide will not be used for any other purpose or released to others without my written consent.

I understand that upon request I may be provided a summary of the results of this research when it is completed and/or an electronic copy (via email) of any publication arising from this research (tick below to request either option).

I agree to participate in this research.

Signed: _____ Date: _____

Printed name: _____

☐ I would like a summary of research upon completion

☐ Via email: _____

☐ Or via post: _____

☐ I would like electronic copies of publications from this research

Via email only: _____

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PO Box 600, Wellington, New Zealand

Phone +64-4-463 5337 Fax +64-4-463 5186 Website www.geo.vuw.ac.nz

INTERVIEW CHECKLIST – MARINE RESERVE DESIGNATIONS

1. What involvement did you have with the designation process for the marine reserve(s), and what group – stakeholder, environmental, or government - do you feel best describes your role?
2. What are your general impressions of the effectiveness of the designation process used in this case?
3. What do you consider to be the key characteristics contributing to the successful designation using this process?
4. Do you feel:
 - a. [stakeholder] that socioeconomic concerns were fairly considered and addressed in the marine reserve designation process?
 - b. [environmental] that conservation concerns were fairly considered and addressed in the marine reserve designation process?
 - c. [government] that management concerns were fairly considered and addressed in the marine reserve designation process?
5. What were your expectations for the designation process, and how does this compare to what happened in actual practice?
6. What are your expectations for the marine reserve(s) and its management in the future?
7. What question do you think should have been asked regarding the marine reserve designation process, and how would you answer that question?

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C. Te Reo: Glossary of Māori terms used

āpure	patch
hapu	sub-tribe
iwi	tribe
kaimoana	seafood
kaitiakitanga	stewardship or guardianship
katiaki	guardians
marae	meeting house
mātaitai	Māori customary fishing areas
Motu Maha	Auckland Islands (“islands of plenty”)
pounamou	greenstone
rahui	forbidden, sanctuary
tai	sea
taiāpure	local fishery management area (“sea patch”) (Fisheries Act 1996)
tangata whenua	people of the land
tapu	holy, inviolate, sacred, sacrosanct
Te Moana o Atawhenua	Fiordland Marine Area (“the sea of the shadowlands”)
Te Wāhipounamou	Fiordland (“place of greenstone”)

D. Annex D. – Sources Cited

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