Stakeholder views about the marine environment and its protection

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ABSTRACT

This report presents the findings of some explorative research carried out by the Centre for Research, Evaluation and Social Assessment (CRESA), to support the implementation of the Department of Conservation's (DOC's) 'Building Community Support for Marine Protection' strategy. The research investigated aspects of public understanding of, support for, and involvement in the marine environment and marine protection issues. Fourteen focus-group meetings were held with a range of stakeholders in Whangarei, Auckland and Nelson, New Zealand. The research describes focus-group meeting participants' marine experiences, their perspectives on marine health and observed changes to the marine environment, and their aspirations for the future. It also describes their views about the value of, and threats to, a healthy marine environment, as well as current and possible future protection strategies and mechanisms. We discuss how these results, and participants' views about effective approaches to education and advocacy, have implications for DOC's implementation of the strategy.

Keywords: public understanding, marine environment, protection strategies and mechanisms

1. Introduction

1.1 PURPOSE OF THE RESEARCH

The Centre for Research, Evaluation and Social Assessment (CRESA) was commissioned by the Department of Conservation (DOC) to investigate aspects of public understanding of, support for, and involvement in the marine environment and marine protection issues. This report documents the findings from a series of 14 focus-group meetings held with a range of stakeholders in Whangarei, Auckland and Nelson, New Zealand.

This research has been designed to support the implementation of DOC's 'Building Community Support for Marine Protection' strategy, which was published in June 2002 (DOC 2002a). Specifically, the research supports priority action 12 of the strategy: 'commission social, economic and cultural research to evaluate attitudinal / behavioural change to marine protection'. The 'Building Community Support for Marine Protection' strategy provides direction for DOC's work in increasing awareness of marine conservation and working with others to achieve protection for New Zealand's marine biodiversity. The purpose of the strategy is to support DOC's marine protection policies, outcomes and operations—specifically its work in building broad-based support for a comprehensive network of marine protected areas. Recent research has shown that there is public concern about the current state of the marine environment and the way it is managed, both in New Zealand (Hughey et al. 2002) and in overseas jurisdictions such as Scotland and the United States (Cobham Resource Consultants 1996; Belden et al. 1999).

DOC has set out several goals for engaging the community in marine protection in its 'Building Community Support for Marine Protection' strategy. These goals are to:

- Increase understanding of the coastal and marine environment and the effects of our activities
- Develop the motivation and desire to protect this environment
- Promote and encourage individual and community initiatives to protect, maintain and restore habitats and ecosystems important for marine biodiversity

The main users of this evaluation will be DOC staff involved in marine conservation, such as the Marine Conservation Unit. It will also be of interest to those staff at Head, Conservancy, and Area Office levels.

This report presents the main themes emerging from the individual and collective experiences of, and understandings about, the marine environment for a range of stakeholder groups. The report is divided into seven parts:

- Sections 1 and 2 provide an introduction to the research and the research methodology.

- Section 3 describes focus-group meeting participants' marine experiences, their perspectives on marine health and changes to the marine environment, and their aspirations for the future.

- Section 4 describes stakeholder groups' views about the value of a healthy marine environment.

- Section 5 describes threats to the marine environment, as perceived by stakeholder groups.

- Section 6 covers marine protection strategies and mechanisms, including stakeholder groups' understanding of what is happening currently and their views about future protection options.

- Section 7 summarises participants' suggested approaches to education and advocacy.

- In Section 8, the key findings are summarised and their implications for the implementation of the 'Building Community Support for Marine Protection' strategy are discussed.

2.   Methodology

Public experiences and views were canvased through semi-structured focus-group meetings, guided by a focus-group topic guide (Appendix 1). This approach was selected because focus groups provide an effective means to carry out exploratory research. They provide a useful platform to explore ideas and issues among groups of people who share common experiences, and are ideal for drawing out and developing people's ideas and exploring sensitive issues. They also enable participants to collectively develop their thinking and ideas. People are often more comfortable articulating their views when in the company of people with whom they have something in common.

The topic guide for the focus groups was developed in consultation with DOC operational and policy personnel with particular responsibilities in public awareness and marine protection. The guide was also informed by a previous report (Arnold 2004) that canvased the current understanding of public attitudes and behaviours toward marine issues in New Zealand and overseas, and identified key questions for future research.

Fieldwork for the research was conducted in March, April and May 2004.

Stakeholder groups were selected in consultation with DOC staff at national and conservancy (Northland, Auckland and Nelson) levels. Considerable effort was

taken to invite people to participate in this research. In some cases, DOC provided the research team with contact details of people who had previously engaged with DOC (most often by writing submissions in support or opposition to a policy, document or activity). In addition, the research team 'cold-called' organisations that were likely to include, have contact with or represent groups including senior citizens, parents, residents of particular communities, young people, recreational and commercial fishers, yachties and boaties, and political representatives. These organisations included residents' groups, community groups, recreational and other clubs, support groups, and schools; they provided details about prospective participants or provided the means for the research team to invite people to participate. Those who agreed to participate were phoned, sent letters describing the research and contacted a few days prior to the agreed focus-group meeting time to remind them of the occasion.

Approximately 100 individuals participated in 14 focus-group meetings held in Whangarei, Nelson and Auckland. Stakeholder groups included:

- Commercial fishers
- Recreational fishers
- Conservationists
- Boaties and yachties
- Parents
- Senior citizens
- Young people
- Local and regional councillors
- Secondary school teachers
- Members of local coastal communities (Waiheke Island, Richmond)

The focus groups were relatively varied in their composition. However, there were some demographic patterns worth noting: the commercial and recreational stakeholder groups were entirely male in composition; the parents included male and female parents of primary school-age children; the conservationists were an older group; and the young people included three co-ed classes (Years 10–12). Focus groups were predominantly Pakeha.

As this research was not sufficiently resourced to adequately include Māori stakeholders, further research is required to canvas the views of hapū, iwi and other Māori organisations in the three conservancies.

Research findings are presented on a thematic basis, describing any similarities or differences in the views within or across focus groups.

3. Interaction with the marine environment

Focus groups' views about the marine environment, including what they considered to be a healthy marine environment, and the threats to that health, tended to reflect the types of interaction participants typically have with the coastal area. Participants were asked to think of a marine environment that they hold as special or that they are particularly familiar with when responding to focus-group questions and discussion topics. The places listed in Appendix 2 provide a flavour of the range of places they identified. This section of the report describes focus groups':

- Definitions of the marine environment
- Early marine experiences
- Various marine-related activities
- Views about what constitutes a healthy marine environment
- Observations of change that has occurred in the marine environment with which they are most familiar
- Aspirations about how they would like the marine environment to be in the future

3.1 WHAT IS THE MARINE ENVIRONMENT?

At one level, people's perceptions of what constitutes the 'marine environment' varied considerably from 'the wet stuff' to 'all things on earth—given the interaction between land, sea and air'. However, with a bit of probing, it became obvious that, when they thought of the marine environment, most people thought of the sea, usually as far as they could see, and the coastal area. One of the most common definitions put forward was 'from high tide to the 200-mile limit [200 nautical mile Exclusive Economic Zone (EEZ)]'. Others put more emphasis on the coastal zone, for instance talking about pōhutukawa (*Metrosideros excelsa*) along Northland's coastal areas, or land and beach settlements adjacent to the coast. A number of people made specific reference to wider catchment areas, noting the interconnectedness of a diverse range of marine and other habitats, including freshwater lakes, rivers and streams (including riparian areas) and farming areas.

In addition to a spatially-based definition, most groups talked about the biotic qualities of the marine environment as being integral to their definition. Although they referred to fish and marine mammals most frequently, some also talked about marine flora, although usually in general terms.

In general, any differences in the groups' perceptions of what constitutes the marine environment could not be attributed to their stakeholder affiliation. The only exception was the boaties and yachties group, the members of which tended to describe the marine environment as 'the wet stuff'. They talked less

about sea life under the water and more about the water as a medium for their boats. Nevertheless, they were aware of the potentially negative effect of irresponsible boating activity on marine flora and fauna, for instance through defouling, effluent dumping and bilge-water dumping.

The following quotes give an indication of groups' views about what constitutes the marine environment:

- *It goes beyond the sea* (recreational fisher)
- *It's a mix of habitats* (recreational fisher)
- *The sea, harbours, the coast and the creatures in them* (conservationist)
- *The beach* (student)
- *What I can see when I'm approaching the beach, from the shore to under the water* (coastal community)
- *It's bigger than anyone realises* (coastal community)
- *Estuaries, wetlands, sand-dunes, mangroves* (boatie / yachtie)
- *The land and sea environments are interrelated* (recreational fisher)
- *Not the fresh water* (commercial fisher)
- *Includes the coastal environment including coastal trees* (commercial fisher)
- *Includes the whole catchment area—the source of water and pollutants* (recreational fisher)
- *Somewhere clean, recreational, harvestable; somewhere I can take my grandkids* (coastal community)

Some groups found it difficult to separate concepts of what the marine environment is from what it means to them. So, they responded to questions about what constitutes the marine environment with discussions about its qualities and importance on a personal level. Some of their comments were:

- *It's a part of my personal identity* (parent)
- *It has aesthetic appeal* (councillor)
- *It's the total enjoyment package* (commercial fisher)
- *A place to go for fun* (recreational fisher)
- *Peace of mind* (coastal community)
- *Where I go for sanity* (commercial fisher)
- *I go there for a suntan* (student)

3.2 EARLY MARINE EXPERIENCES

When asked, all focus-group participants were able to discuss some defining experiences that shaped their current views about the marine environment. These experiences ranged from participants' childhood and family experiences, overseas and local recreational, commercial and naval experiences, and their

work, through to watching 'Coastwatch' on television. Some examples of these defining experiences include:

- *I'm a 4th generation yachtie* (boatie / yachtie)
- *Boating and travelling around the world* (conservationist)
- *Having a family member involved in marine biology* (conservationist)
- *Being a marine researcher* (recreational fisher)
- *Diving—seeing what's beneath the sea* (commercial fisher)
- *Seeing fisheries damage change the marine life* (senior)
- *Experiencing climate change and the effects on marine life* (commercial fisher)
- *Oil discharges along the coastline* (conservationist)
- *'Coastwatch' (the television programme)* (student)
- *Observing behaviour of 'black market operators'* (commercial fisher)
- *Sunny days sitting under a pōhutukawa tree with a glass of wine* (boatie / yachtie)
- *Becoming a councillor* (councillor)
- *Joining an environmental group* (recreational fisher)
- *Losing access to my favourite water front area* (coastal community)

3.3 WHAT PEOPLE DO IN THE MARINE ENVIRONMENT

It was rare for people participating in the focus groups to describe their marine-related activities in the singular. Almost invariably they reported using the marine environment in a variety of ways. All participants, including those with commercial interests in the marine environment, enjoyed a range of recreational activities as varied as fishing, swimming, yachting and / or boating, diving, snorkelling, kayaking, surfing, walking the dog, four-wheel driving, barbequing, picnicking and other social activities. For instance, one recreational fisher dived, swam, boated and carried out research in the marine environment. Across the stakeholder groups, people talked about the marine environment as part of their survival strategy. They variously described it as the total enjoyment package, and a place to go for fun, peace of mind, family values, sanity and suntans.

For some it is a food basket, while for others it provides the basis for their main income-earning activities, as commercial fishers, a tourism operator (running a kayak business), a retailer (selling clothing and equipment for marine-related recreation), a diving instructor, and a marine biologist (providing research and advice). One or two also talked about their conservation activities, including beach clean-ups and planting programmes.

3.4 WHAT IS A HEALTHY MARINE ENVIRONMENT?

When asked to describe a healthy marine environment, most groups focused on the physical properties of the marine environment and tended to respond in one or more of the following ways. Sometimes, they described a healthy marine environment as one that is 'naturally occurring'; that is, it contains the naturally occurring diversity of flora and fauna (although most attention was given to fauna). For them, diversity encapsulates the ranges of species, sizes and ages. Sometimes, they described health in terms of whether today's water purity or clarity was consistent with conditions in the past, including freedom from pollutants. Some could describe health only in terms of threats to the environment (i.e. health was the absence of threats).

As well as these physical qualities, a number of participants—particularly residents groups, young people, councillors, and boaties and yachties—linked social qualities to marine health. They considered a healthy marine environment to be one that is not over-crowded with human activity.

The views expressed above were generally not linked to particular groups other than when specified. The following comments, which provide an insight into groups' views about what constitutes a healthy marine environment, include both references to the qualities of a healthy environment and indicators of health or lack of health:

- *Where there is biodiversity* (recreational fisher)
- *The full range of naturally occurring marine species and the full range of sizes and ages* (commercial fisher)
- *A proliferation of fish, lots of shellfish* (conservationist)
- *Comparatively low levels of recreational and commercial activity* (boatie / yachtie)
- *One that's accessible* (councillor)
- *Clean sand* (student)
- *An environment where you have confidence that you can eat everything you catch* (boatie / yachtie)
- *All of the marine life* (coastal community)
- *No rubbish* (parent)
- *Unchanged from the past* (recreational fisher)
- *Freedom from pollutants* (student)
- *Lack of algal blooms* (conservationist)
- *Clean water—water consistent with past conditions* (recreational fisher)
- *Something you can swim in* (boatie / yachtie)
- *Clean and pure* (senior)
- *Less mangroves* (recreational fisher)
- *That it can clean itself and regenerate* (coastal community)

3.5 HOW HAS THE MARINE ENVIRONMENT CHANGED OVER TIME?

All focus groups indicated that the particular marine environments with which they were most familiar had changed over time. The most common changes noticed were diminishing water quality and increasing levels of pollutants. The changes identified by groups echoed the indicators of a healthy marine environment previously identified. A number of people commented about changes in sea life, for instance:

- *In the past we used to see acres of 'school' fish* (recreational fisher)
- *Fish now found further away from shore* (commercial fisher)
- *Less diversity and smaller numbers and sizes of fish* (recreational fisher)
- *I have to work harder to find (and catch) what I found years ago* (commercial fisher)
- *Unusual behaviour of sea life affected by pollution—for instance, I've seen a sea lion rubbing its eyes after swimming in the local stream full of pollution* (coastal community)

Groups also described changes in water quality and conditions and in the coastal area:

- *Diminished water quality or clarity*[1] (recreational fisher)
- *Warmer water, and changing weather patterns as an outcome of climate change* (commercial fisher)
- *A lack of calm water, given increased commercial and recreational activity* (boatie / yachtie)
- *More siltation* (coastal community)
- *Damage from wakes* (parent)
- *More pollution from a mix of recreational and commercial boating (bilge water, sewage and oil spills), farming and coastal development (chemical runoff), and industry (industrial waste)* (recreational fisher)

Groups lamented the increasing intensification of coastal development. They identified aesthetic, environmental and social changes as consequences of the transformation of natural coastlines into built-up areas. Here are some of their specific comments:

- *Access to lots of beaches is more difficult with coastal development* (coastal community)
- *It seems that new people coming to coastal areas have less of a relationship with the coast; they don't share the same attitudes towards it as people who had been there for a long period of time* (student)
- *You can see the siltation and erosion from coastal development* (commercial fisher)

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[1]   This comment generated debate in one focus group: others argued that a lack of water clarity does not necessarily indicate diminished water quality; it depends on the ambient conditions.

Many groups noted an increase in the amount of recreational and commercial activity in and on the water and on beaches. They considered these increases to be diminishing both the recreational and commercial values of areas. For commercial and recreational fishers, this increase has led to an increase in competition. For others, the increase in activity coupled with increased coastal land development has further undermined access to the marine environment and their enjoyment of it. This was summed up by one beach user's comment: 'A crowding of people in the water and on the beach has stopped me taking my children to our favourite spot'. Typical comments included:

- *The size of boats has increased, as has the speed and distance they can travel* (boatie / yachtie)
- *Growth of man-made obstacles like fish farms and boat moorings affects the way I can use the area* (senior)
- *I feel like the environment is more controlled these days* (parent)

Climate change was another feature of environmental change commonly identified by participants. In one instance, a commercial fisherman suggested that the increasingly variable weather had led to an increase in water temperature in his fishing spot. He reported that the warmer water had made the crabs he fished for move elsewhere, thus affecting the size of his catch.

3.6 A DESIRED FUTURE FOR THE MARINE ENVIRONMENT

For one group, the most commonly desired change to the marine environment was for it to return to its 'naturally occurring state'. Many groups wanted the diversity and volume of marine life to increase to levels seen in the past. For example, fishers related this increase to their desire to have more fishing opportunities. Others related the change to their desire for their children and grandchildren to have the same experiences of the marine environment that they had. For some, a return to the naturally occurring state meant stopping the proliferation of exotic marine species, especially Pacific oysters (*Crassostrea gigas*), and the colonisation of new areas by indigenous species. Concerns about the proliferation of mangroves were expressed by Auckland and Whangarei groups.

While, in an ideal world, they would like the marine environment to return to its past state, most focus groups recognised the difficulties this would entail. Instead, they described a more modest aspiration: that the marine environment of the future would not get any worse. This is typified by one comment: 'Push the stop button, stop it from getting worse' (recreational fisher).

All groups agreed that some sort of marine management was needed to avoid further deterioration. They believed that the marine environment of the future should be better managed, with more consistent monitoring, policing and use of penalties than occurs currently. Some indicated that they would like to see this achieved through improved coordination and cooperation between the agencies involved in marine management and protection.

There were considerable differences of view amongst focus groups regarding any future increase in the use of one marine protection mechanism, protected marine areas. The majority of groups indicated a desire to see a larger network of areas that are protected from commercial and recreational activity (especially fishing) in the future. A recreational fishing group was opposed to any increased network of areas where such activities would be restricted.

Some groups, for instance fishers, councillors and teachers, hoped that the future would see better management of land use, so that siltation, erosion, pollution and other land-based impacts on the marine environment would be reduced.

One group of parents made an interesting observation: people would have a different view of marine protection if they lived for 300 years; as it is, they won't live to see the impacts of their behaviour on the environment in their lifetimes. This was highlighted by one senior's comment 'I have the impression that we live in a fortunate age; I would not like to live in the future'.

The following quotes give an indication of participants' wish lists:

- *Biodiversity (like 25 years ago)* (recreational fisher)
- *More fishing opportunity* (commercial fisher)
- *Children and grandchildren having the same opportunities and experiences as we had* (coastal community)
- *More enforcement and penalties as well as extended monitoring of existing activities* (boatie / yachtie)
- *Mangrove levels to be the same as in the past (smaller)* (councillor)
- *Well-managed fisheries* (commercial fisher)
- *Increased community partnerships with agencies and clubs* (boatie / yachtie)
- *More areas of non-commercial activity* (conservationist)
- *Things to stop now and not get any worse* (recreational fisher)
- *Better management of land development* (commercial fisher)

4. The value of a healthy marine environment

In their consideration of the value of a healthy marine environment to New Zealand, focus groups described its contribution to:

- Our individual, cultural and national identities
- The economy
- Recreation and health
- Physical sustenance
- Education

They also considered the costs of any loss in the health of the marine environment and the comparative importance of marine conservation compared with other conservation needs.

4.1   INDIVIDUAL AND NATIONAL IDENTITY

Discussion around the importance and value of a healthy marine environment generated the most passion amongst focus groups. There was more or less universal agreement across the 14 focus groups that the marine environment is intrinsic to New Zealanders' sense of themselves, both as a nation and as individuals. Typical statements included:

- *We are island people* (parent)
- *It is part of our sense of ourselves* (coastal community)
- *The sea is part of our mana* (coastal community)
- *New Zealand is defined by its marine environment* (parent)
- *It is an important part of New Zealand's national identity / tradition* (boatie / yachtie)
- *Culturally and spiritually the sea is part of our individual and family identity* (recreational fisher)

4.2   ECONOMIC VALUE

Most groups also stressed the economic importance of the marine environment, usually focusing on commercial fishing and tourism. The importance of the marine environment to New Zealand's branding overseas was also raised by most focus groups. Participants felt that a number of export industries benefit from New Zealand's 'clean, green' image, which is as dependent on the marine environment as the land. They felt that images of New Zealand's coastlines, beaches and sparkling water were core to our branding for all primary production, as well as tourism, film and other industries dependent on our natural resources.

In at least half of the focus groups' discussions, one or more participants noted that New Zealand's 'clean, green' image is fragile, as it is based on having a small population rather than having innovative environmental policies and practices. The importance of this brand image to New Zealand export industries makes conservation of our environmental and ecological values, including those of the marine environment, an imperative.

A small number of groups, especially fishers and seaside residents, emphasised the economic importance of New Zealand's recreational activities to the economy as a whole; for example, they noted the business and employment generated around production and retailing of specialised equipment and clothing. A couple of participants in Auckland focus groups noted the importance of New Zealand's boat-building industry, and attributed our good reputation overseas to both our sporting enthusiasm and success, and design and production skills.

4.3   RECREATIONAL VALUE

Most groups recognised the recreational value of the marine environment above all others, identifying a wide range of recreational opportunities (reflected in the activities they engage in, as listed in Section 3). Many participants across the range of focus groups found it difficult to separate these opportunities from their spiritual well-being. Access to marine-related recreational opportunities was perceived as an intrinsic part of being a New Zealander. The current accessibility of the sea and coast, given its importance to groups, was identified as an integral part of its recreational value. A few participants, especially from one group of parents, also linked recreational opportunities to their physical health, for instance through fitness. The following quotes sum up the themes outlined above:

- *It's like a fun park that's free to enter* (coastal community)
- *It's our rest and recreation* (recreational fisher)

4.4   SOURCE OF FOOD

Groups identified three different dimensions of the food-source value of the marine environment. First, through commercial fishing, it makes a significant contribution to the diet both of New Zealanders and of those to whom we export fish and other marine products. Second, through recreational fishing, it is an important part of the diet of recreational fishers and their friends and family. Third, the marine environment is an essential part of the diet of communities that use their natural environment as a food basket. Focus-group participants referred to communities such as those on Great Barrier Island as well as iwi and hapū in coastal areas. The extent to which stakeholders valued the marine environment as a food basket somewhat depended on their relationship with the sea. For instance, commercial and recreational fishers were more likely to note the importance of the sea as a source of food. Only a few groups, mainly in the North Island, noted the cultural value, as well as subsistence value, of the marine environment as a food basket.

4.5   EDUCATIONAL VALUE

Discussion of the educational value of the marine environment centred around three main themes. First, a range of focus groups stressed the importance of a healthy marine environment for providing people with the experience of nature in its most pristine state. While they acknowledged that the marine environment has undergone significant transformation, they felt that this was to a lesser extent than the transformation of land-based environments. Second, recreational fishers and others talked about the marine environment providing the context for passing on skills (e.g. fishing) and values (e.g. conservation and family values) to younger family members. Third, the marine environment is an important part of research and education of a more formal kind.

4.6   COSTS OF NOT HAVING A HEALTHY MARINE ENVIRONMENT

Discussions about the costs of not having a healthy marine environment tended to be short. Most focus groups simply reiterated the benefits and, in the event of marine degradation, the loss. As well as economic and recreational costs, and the loss of an important food source, they pointed out the incalculable cost to New Zealanders' national and individual identities. The quotes below illustrate the types of comments groups made:

- *We would suffer from withdrawal* (boatie / yachtie)
- *An important aspect of our lives would disappear* (boatie / yachtie)
- *Future generations won't have the enjoyment of what is truly natural* (senior)
- *We will have lost an educational resource to teach people about the sea and its importance* (teacher)

Some groups suggested that such costs are not necessarily dependent on only the current health of the marine environment; they are also dependent on others' perceptions of marine health. Thus, they anticipated enormous economic costs if our trading partners ceased to believe in a 'clean and green' New Zealand. These groups pointed out current problems in marine conservation, such as diminishing fisheries, degrading water quality and eroding coastlines, and suggested that current health is a product of small population size rather than sensible conservation strategies.

4.7 BALANCING MARINE VALUES WITH OTHER ENVIRONMENTAL VALUES

Focus groups were specifically asked about the value of the marine environment compared with other environmental issues. Overall, they argued that the health of the marine environment was at least as important as other environmental issues on land. A couple of groups suggested that the marine environment was the 'number one' priority.

Most groups argued that the importance of the marine environment is underrated and needs more exposure. They felt that the marine environment is fragile and the impacts and damage to it are less visible than is often the case in the terrestrial environment; therefore, it needs extra protection.

Most groups recognised the interconnected nature of the land and sea environments. They argued that, because the health of the land and sea, and their respective flora and fauna, are inextricably combined, a holistic approach to environmental issues is required.

Groups stressed the importance of a healthy marine environment in linking past, present and future generations. For them, preserving the things that were important in the past and the experiences that were part of their childhood is a valuable part of New Zealand heritage and their sense of self.

The following stakeholder comments were typical:

- *The importance of marine protection is underrated—it needs more exposure* (commercial fisher)
- *The sea is a more fragile environment and the impacts and damage are less visible—therefore it needs extra protection* (recreational fisher)
- *Very important because it is so accessible* (recreational fisher)
- *Marine protection needs a holistic approach due to the inter-relationship of the land and sea* (commercial fisher)
- *It (the marine environment) is of major concern* (senior)
- *The sea is the largest part of our environment* (student)
- *Marine protection is number one* (coastal community)
- *Land and sea are as important as each other for protection* (student)

5. Identified threats to the marine environment

Almost all of the focus groups talked about threats to the marine environment, these threats potentially undermining:

- Its physical and biological quality
- Recreational opportunities
- Aesthetic appeal
- Economic values

Indeed, in many cases groups could talk of the value of the marine environment only in terms of the current and potential negative impacts of a variety of land- and water-based activities.

In general, groups were aware of the complexity of the inter-relationships and conflicts between land- and water-based activities. While the level of understanding varied within groups, these variations could not be attributed to stakeholder affiliation, age or other identifiable characteristics of individual group participants. Instead, it was often the case that one or two people in each focus group demonstrated a more detailed knowledge and understanding of the issues.

One common theme, however, was stakeholders blaming others for current and potential threats to the environment. These others could be other stakeholder groups (for instance fishers), poachers (one of the most commonly identified threats) or organisations. Groups pointed to the seeming failure of relevant agencies to provide sufficient resources, including education, information provision and policing, to ensure compliance with regulations and other mechanisms.

In broad terms, the identified threats to the marine environment can be grouped as arising from:

- Land management and farming / forestry
- Coastal development / management
- Aqua-farming
- Fishing (including recreational, commercial and other)
- Increasing water-based activity
- Regulation and compliance issues
- Industry
- Households and individual behaviour

5.1 LAND MANAGEMENT AND FARMING AND FORESTRY

Groups across the range of stakeholders attributed many of the problems they identified to land-management practices, particularly farming and forestry. In all three conservancies, siltation of the harbours and estuaries, with related siltation of adjacent streams and other waterways, was identified as problematic. Some of the identified impacts of siltation included:

- Expansion of mangrove areas, including their migration into previously clear waterways.

- Smothering of species, especially shellfish. The destruction of scallop beds was attributed to a mix of siltation and dredging as well as fishing techniques that dredged the seabed (often through the use of twin boats).

- Destruction of habitats particularly through smothering of flora such as seagrass, which leads to the destruction or displacement of diverse flora.

- Replacement of naturally occurring species such as scallops with exotic species, particularly Pacific Oysters.

- Diminishing water clarity, further exacerbated by the decline in water movement caused by siltation.

- Decline in fisheries, given destruction of land-based spawning areas. Dairying was most often identified as the culprit, due to a perceived lack of control over cattle in stream areas.

5.2 COASTAL DEVELOPMENT

Groups who lived near, frequently visited or enjoyed the views of coastal areas were invariably concerned about coastal development. Their concerns were multi-faceted. First, they were concerned about the aesthetic impact of large houses and housing development on the coastal areas, especially when they replaced natural bush or open areas including view shafts. Second, they were concerned about the impact these developments have on access to coastal areas, the shore line and the sea. Third, they were concerned about the impacts of coastal development on the physical qualities of the marine environment.

At least half of the groups lamented the destruction, as they saw it, of the natural beauty of coastal areas with increasing housing development. The development was often viewed as unsympathetic to the natural features and out of scale with the land forms. One of the most commonly identified impacts of such development was the destruction or degradation of coastal bush, including pōhutukawa.

A number of participants in different groups talked about areas they have traditionally visited that are now inaccessible, except by boat, as a result of coastal development. Their perception was that previously public spaces are increasingly becoming privatised with the expansion of coastal development.

Development-related matters, such as septic tanks, runoff from building sites and increasing amounts of pollutants added to stormwater systems, were collectively blamed for currently observable problems in each of the three conservancies.

5.3 AQUA-FARMING

Issues around current and proposed aqua-farming were attracting much media and other attention in all three conservancies in which this research was conducted. Although most groups appreciated the economic benefits of aqua-farming, they were concerned about the size and location of farms and their impact on marine recreation and the marine environment. As with other issues, concern was expressed across the range of the groups. Their concerns included:

• The aesthetic impact on otherwise 'pristine' environments.

• The safety of poorly lit farms, which are often very large and difficult to see by marine users (recreational and non-recreational) during the hours of darkness or in conditions of poor visibility.

• The impact of aqua-farms on marine biodiversity. Groups described the displacement of 'naturally' occurring species by the farmed species (they were usually referring to mussels or salmon) both at surface level and on the seabed below the farm. They described these seabeds as often being barren other than escapees from the farm.

• The vulnerability of single species aqua-farming, which potentially has similar risks to other single-species primary production such as forestry. Some groups referred to the risks of disease or pests to our forestry industry, given the dominance of *Pinus radiata*.

• The effects of the escaped nutrients from non-consumed feed used in aqua-farming on water quality clarity and on marine flora and fauna.

• The potential effects of genetically modified 'mutant' farmed species on the natural fauna.

• The perception that breeding stations intended to improve fish stocks could also increase the risk of disease.

The recent development of very extensive aqua-farms further from the shore (more than 3 miles out) allayed the fears of some but not all groups. While some saw this displacement of aqua-farms to open sea as positive, others anticipated the problems of in-shore farms being displaced to these outer areas.

5.4 FISHING

A number of focus groups spent time discussing the impact of fishing on the marine environment, specifically on a perceived decline of a wide range of fish species. As discussed in Section 3.5, most participants had memories of previous fishing, when fish, shellfish and crayfish were more plentiful and larger. Some people talked about seeing acres of 'school fish' such as kahawai (*Arripis trutta*) and frequent sightings of mammals such as dolphins. Most people attributed the diminishing stocks to over-fishing.

In focus-group discussion, commercial fishers initially blamed recreational fishers, and recreational fishers initially blamed commercial fishers, for over-fishing. Others variously blamed commercial and recreational fishers, as well as

the impacts of pollution and other biological and physical changes to the marine environment. On further reflection, however, most of those attributing blame to fishing shifted their attention to 'poaching' or people's disregard of quotas, bag limits, shellfish and crayfish size limits, customary harvesting protocols and other mechanisms designed to protect fish stocks. While most groups tended to be quick to blame new immigrants and other particular groups for this behaviour, they agreed that the problem was wide-spread and under-policed.

Commercial fishing, *per se*, was not necessarily identified as the cause of over-fishing. Instead, groups were concerned about some commercial fishing methods, which they likened to 'clear felling' of forestry areas. Fishing methods such as trawl netting, long lining, purse seining (a method for catching surface fish with two boats), drag netting and dredging (including two boats working together), and the targeting of particular species, were criticised because of their perceived indiscriminate capturing of fish, regardless of species and size, and their capacity to 'clean out' habitats. Dredging was frequently identified as causing the decline or destruction of scallop beds, the destruction of the seafloor (making it 'like a ploughed field'), including the natural range of marine flora and fauna, and the colonisation of areas by Pacific oysters. People described seeing evidence of such indiscriminate fishing methods, including discarded by-product of quota fishing (i.e. dead fish on the sea surface) and the disappearance of particular species from previously abundant fishing sites.

5.5 INCREASING INTENSITY OF WATER-BASED ACTIVITY

Groups, especially in Auckland, were concerned about the impacts from the increasing intensity of use of marine environments. Increasing activity on the Hauraki Gulf attracted most concern. Auckland groups referred to the increasing number of Aucklanders who own boats. Groups described a mix of recreational activities such as: boating (including waterskiing); fishing, diving, wind surfing and swimming; and commercial activity, including ferries, tourism operations, shipping and fishing.

Impacts identified by groups included decreasing recreational values as a result of crowding, increasing conflicts between users (e.g. between boaties, jet skiers and swimmers) and increasing safety issues.

The major conflicts between users of marine activities identified by participants included:

- Residents versus marine farming, with residents particularly interested in protecting their aesthetic values and fishing opportunities.

- Tourism versus marine farming, with tourism operators concerned about loss of aesthetic values, diminishing access to marine environments, safety issues and fishing opportunities.

- Commercial fishers versus recreational fishers, with each group accusing the other of transgression of limits and blaming it for the decline of fish stocks.

- Particular fish species versus fishers, with fish species paying the cost (i.e. decline, destruction) of providing for the needs of people (another species). Any natural equilibrium between these species and humans has been destroyed.

- Industry versus recreational users, with recreational opportunities diminished through industrial pollution.

- All users conflict with other users, as the intensity of use increases and crowding becomes more problematic.

Other impacts, such as the size and number of wakes from ferries and other large boats, are by-products of an increased intensity of use. These are perceived as undermining the recreational values of places like the Hauraki Gulf. Other existing and potential impacts of increasing use were identified as: oil-spills; the introduction of exotic and / or invasive species from boat hulls and in ships' ballast water; water quality degradation from effluent disposal from boats; and noise pollution, especially from jet skis.

Stakeholders also anticipated increasing constraints on their marine-related activities as authorities, especially DOC, Ministry of Fisheries (MOF), Maritime Safety Authority (MSA) and regional councils, attempt to manage user conflicts, to ensure safety, protect fisheries and prevent degradation of the environment. Two major issues were discussed in terms of these constraints, including various safety and conservation regulations, and fisheries protection mechanisms. One was the potential constraints placed on people's recreational activities. In general, focus groups reported that there are few constraints on what they currently do, and often any constraints are self-imposed; for instance, recreational fishers talked about taking fish for their own use only while, in the past, they were likely to bring in enough for friends and neighbours. The second issue related to compliance with regulation and other management mechanisms. Stakeholders considered that one of the greatest problems with current and possibly increased future regulations was a lack of policing capacity by the relevant agencies and, therefore, the limited or 'patchy' effectiveness of these regulations.

6. Marine protection strategies and mechanisms

In addition to their views about whether marine protection is required, focus groups were asked to comment on:

- Their knowledge of current marine protection approaches and mechanisms
- The adequacy of current approaches and mechanisms
- Current individual actions
- Future requirements, including community and individual involvement

6.1 NEED FOR MARINE PROTECTION

More or less without exception, focus groups believed that the marine environment requires protection. However, as the discussion below shows, their views about what that protection should entail varied.

6.2 HOW MUCH TO PROTECT

A question posed to focus groups about an ideal percentage of the New Zealand coastline to place under protection generated a range of responses. These ranged from derision at such a question, to support for 100% protection of some sort or another, to suggestions for specific percentages of the coastline to be established as marine protected areas (usually assumed to be 'no-take' reserves). These suggestions ranged from 10% to 50%. The following comments illustrate the range of responses:

- *If all the direct and indirect mechanisms (e.g. fibre optic cable and anchoring limits) that effectively limit access and activities were taken into account, then a large percentage of the marine environment is already under protection* (commercial fisher)
- *Current protection is insufficient* (coastal community)
- *20% like Bill Ballantyne recommends* (conservationist)
- *Can't put a percentage on it* (recreational fisher)
- *Education is more important than an arbitrary percentage* (teacher)
- *We need a full range of protection—from full protection through to partial—over all the marine environment, but with a more targeted mix* (conservationist)
- *100% management in some form* (recreational fisher)
- *Rather than talk about percentages we need to create an enforcement infrastructure* (senior)
- *There will always be some opposition to an arbitrary percentage whatever it is set at* (teacher)

- *There definitely is a place for strictly controlled reserves* (teacher)
- *Protect a range of targeted habitats with mechanisms tailored to the area* (recreational fisher)
- *I do not believe partial protection works* (conservationist)

6.3 KNOWLEDGE OF CURRENT MECHANISMS AND THEIR PERCEIVED EFFICACY

Overall, groups' knowledge of the range of mechanisms currently applied to marine protection was relatively comprehensive. However, most of their focus was on direct marine-focused mechanisms rather than mechanisms for managing impacts that have their origins in land-based activities. They described mechanisms to protect fisheries, such as fishing quota systems (with commercial fishers having the most comprehensive knowledge), bag and size limits, and voluntary codes (for instance, catch-and-release codes of individuals and clubs). Groups also noted the importance of other mechanisms to directly address marine protection, and to safely include MSA and other shipping regulations and DOC-administered marine protected areas.

Some focus groups noted the importance of cultural values, unwritten rules and protocols, and voluntary codes to current marine protection. These may range from culturally-based kaupapa about appropriate harvesting to the protocols of particular recreational activities or clubs, for instance catch-and-release policies of some clubs or fishing events.

While most groups agreed with the objectives of marine management mechanisms, they were extremely concerned about their implementation. First, they considered that a lack of compliance undermined their effectiveness. They attributed this to poor management, resourcing and enforcement by agencies such as MOF and DOC. Second, they argued that the poor implementation of many of these mechanisms meant that their potential effectiveness could not be properly evaluated.

Given their concerns about the impacts of land-based activities on the marine environment, many groups referred to land-management mechanisms. Specific mechanisms included the Resource Management Act (specifically in managing subdivisions, farming activity and stormwater systems), public awareness campaigns and pest control (for example, some groups included possum control as a marine protection mechanism given the integral part that pōhutukawa play in the coastal area and the importance of healthy forest cover to prevent erosion).

Some groups noted the contribution that research could make to current management approaches. They also noted the limitations of current knowledge about fisheries management and the impacts of mechanisms ranging from quotas to reserves on the health of particular fisheries and habitats. They stressed the need for more robust research that provides a stronger evidence base for designing targeted management and conservation approaches and mechanisms. Suggestions are listed below:

- *Need research to identify environments* [for protection] *on a needs basis* (parent)
- *More research needed to identify the benefits of marine reserves* (conservationist)
- *Want to see evidence-based information* (boatie / yachtie)
- *Use overseas research* (recreational fisher)

In general, groups that knew something of the range of mechanisms applied in New Zealand believed that those directed at managing the impacts of land use were ineffective at protecting the marine environment. Identified evidence of their ineffectiveness included continuing erosion, insufficient control over runoff from development projects, stormwater systems that deposited pollutants into the sea, and continuing degradation of pōhutukawa by possums. Groups' most vociferous criticism was directed at inadequate control over farming activities, especially dairying; for instance, they noted runoff from fertilisers and a lack of control over cattle as both destroying riparian strips and polluting freshwater ways leading to the coast. Another mechanism that attracted criticism was stormwater management: most focus groups noted the general public's lack of awareness of the effects on the marine environment of everyday activities such as car-cleaning, water-blasting houses, and tipping paint, cleaning fluids and other pollutants down drains. A few groups referred to the effectiveness of a recent television advertisement that traced the journey of a bottle to the sea in educating people about how their activities affect the marine environment.

6.4 CURRENT INDIVIDUAL ACTIONS

Most groups felt that they had some kind of control over threats to the marine environment, and some described their current responses:

- Recreational fishers described incentives to promote 'catch-and-release' recreational fishing adopted by some fishing clubs in their competitions.
- Recreational fishers talked about reducing their catches to meet immediate family needs only, and throwing fish back if their size was sufficiently marginal to require measurement.
- Participants across a number of stakeholder groups described their involvement in individual and organised rubbish removal and other voluntary conservation activities in coastal areas.
- Commercial and recreational fishers, councillors and coastal communities mentioned policies to report any observed transgressions by others, for instance if they exceed allowable takes. However, one commercial fisher pointed out that such reporting raises a dilemma, given that his individual safety (for instance, if his engine fails) often depends upon the collective resources of fishers and others out in boats. Thus, there may be personal costs associated with alienating colleagues. Others talked about their frustrations at the often delayed responses of relevant agencies to their reporting.

- Individuals across different focus groups (e.g. fishers, members of conservation groups, parents, researchers, young people and councillors) talked about their education and advocacy activities to encourage environmentally responsible behaviour. They described teaching children and grandchildren about marine protection, explaining the reasons for conservation mechanisms to a variety of people (including those observed transgressing), and joining advocacy and lobbying groups. Two elected officers (at community board and regional council levels) attributed their political roles to a desire to have more influence over decision-making around marine protection. This group also stressed the importance of ensuring that these activities went in tandem with responsible personal environmental practice.

- One participant described his contribution to increasing our understanding of the threats and required responses through research on marine species and other aspects of marine ecology.

6.5   MARINE PROTECTION FOR THE FUTURE

One of the most common themes emerging from discussions around a future approach to marine protection was the need to move on from the current ad hoc and uncoordinated approach to a more integrated approach to management. Those arguing for such an approach felt that the complexity of causes of marine damage needed an equally holistic, research-based response. This response would need to account for both land- and water-based activities that contribute to marine degradation. Thus, multi-agency collaboration would be necessary, with some extension and refocusing of roles by the likes of DOC, MOF, the Ministry of Agriculture and Forestry, the Ministry of Economic Development, local and regional government, MSA and communities. Some suggested initiatives to effect such change included:

- *DOC taking a leadership role* (coastal community).

- *Maybe separating DOC's conservation and enforcement roles so that, for instance, officers could provide advice and information to people in certain situations without having to play a 'police' role* (conservationist).

- *A review of DOC priorities so that more resources could be given to marine issues* (conservationist).

- *Better legislation enabling the prosecution of offenders* (recreational fisher).

- *Clarification of the roles of the different organisations so that they carry out their roles properly without unnecessary overlapping. At the moment, for instance, we have regulators who do not police through to those who lock the marine environment up and effectively police it* (recreational fisher).

- *Better inter-agency coordination* (parent).

- *There is a need for an agency that coordinates community groups. That might avoid things like the city council ripping up coastal replanting by community groups to lay a pipe* (parent).

- *Increased investment in science and research* (recreational fisher).

- *Don't want to see mechanisms such as marine reserves used for different motives or for the wrong reasons; for instance, part of the reasons that the marine reserve is being promoted is to halt port development* (senior).

- *The effects of marine protection need to be understood properly; for instance, the costs of education and advocacy in the short term needs to be weighed up against the long term economic benefits of marine protection* (commercial fisher).

Participants stressed that any holistic approach to marine management would need to include a mix of the current tools including:

- *Marine protected areas (ranging from partial to full protection)* (coastal community)

- *Continuation of the quota system, but with a better research base and monitoring* (boatie / yachtie)

- *Bag limits* (commercial fisher)

- *MSA regulations* (senior)

- *Shipping regulations* (senior)

- *Application of the Resource Management Act for better land management* (councillor)

- *More research underpinning all mechanisms* (recreational fisher)

- *Continued limitation on fishing, land-based activities and recreation, shaped by cultural values, unwritten rules and voluntary codes* (coastal community)

6.6 INDIVIDUAL AND COMMUNITY RESPONSIBILITY AND ACTION

Groups could see a place for continued and extended individual and community involvement in marine protection, although in the context of coordinated policies and practices across the range of relevant agencies. One recreational fisher's comment, that 'it's part of a community's responsibilities', echoed others' views. However, groups also noted the need for agencies to coordinate their activities, work on their public relations (especially DOC), develop more sophisticated public awareness approaches and create plenty of opportunities for community involvement.

Groups identified the following ways that communities could be further involved in marine protection in the future:

- *Monitoring* (recreational fisher)

- *Policing* (boatie / yachtie)

- *Education and awareness raising* (commercial fisher)

- *Self-management* (recreational fisher)

- *Encouraging environmental awareness activities in schools* (parent)

- *Encouraging or lobbying local agencies to develop community facilities that reflect conservation values and give the message that it is important to protect the environment; one example is composting public toilets* (parent)
- *Consultation, so that communities have a say in the siting and planning of marine protected areas* (conservationist)

When asked, individual participants in focus groups also expressed a willingness to give up some things to protect the marine environment; they were willing to accommodate costs and sacrifices so long as they felt that these would make a difference. As one parent said: 'If there was a demonstration or example that would convince me that making a sacrifice works, then I would be a lot more willing to make it'. Compliance would be more likely if individuals were convinced that other people would also be facing the same costs. As one coastal community member said, personal behaviour changes are necessary because 'the man on the street who is causing the problem can also be the solution'. A few answered facetiously, for instance suggesting that they would stop eating fish. More serious suggestions included:

- *Paying extra development costs to reduce erosion* (commercial fisher)
- *Reduction in quotas* (commercial fisher)
- *Changing to more environmentally friendly products* (coastal community)
- *Paying more rates* (boatie / yachtie)
- *Promoting catch-and-release* (recreational fisher)
- *Catching less* (commercial fisher)
- *Giving up some free time to do things such as participate in research* (recreational fisher)
- *Honouring a 'no take' from particular protected areas* (commercial fisher)
- *I would be prepared to give up my vehicle* (coastal community)
- *Accept greater costs for cleaning the bottom of my boat* (boatie / yachtie).

6.7 THE VALUE OF MARINE PROTECTED AREAS (MPA)

Focus groups were asked about the potential issues arising from the establishment of a marine protected area in the marine environment with which they were most familiar. Most considered marine protection necessary in some places and some argued that the whole marine environment needs protection in some form. However, views about marine reserves varied significantly. Some focus groups, particularly those involving seaside community members, young people and parents, were in favour of marine reserves and, in some cases, argued for 40% or more of the coastline to be managed in such a way. Some were more moderate in their support, arguing for 10–20% protection. Reasons given for support centred on recovery of fisheries and fisheries' habitats. Groups cited Leigh and the Poor Knights Islands as places that they valued and wanted emulated in other places.

Some focus groups were more sceptical about marine reserves, with some participants passionately opposed to any mechanism that would limit their activities in marine areas, particularly recreational fishing. A recreational fishing group was highly critical of what they saw as ad hoc establishment of marine reserves without due consideration of what needs to be protected, the best approach to such protection and the effectiveness of various management options. The group considered a percentage-based approach to the establishment of marine reserves (including Government's stated 10% goal) as manifestly 'ad hoc'.

6.8 AN INTEGRATED APPROACH TO MARINE PROTECTION

A more measured and evidence-based approach was recommended by some focus groups, particularly those with participants who were highly critical of the current mix of protection mechanisms. Such an approach would have the following components:

- An environmental scan or stocktake of the marine areas / coastline of New Zealand or region by region[2] to identify, document and prioritise the various, and overlapping, values that need to be protected including:
  — Ecological
  — Recreational
  — Cultural / economical
  — Social / aesthetic
- Development of management objectives / outcomes for particular marine environments where particular values are identified as requiring protection
- Identification of the agencies (and others) responsible for (or interested in) protecting the identified values
- Identification of the range of management tools / mechanisms available and best suited to achieve the identified objectives / outcomes in particular marine areas
- Implementation of the mechanisms / tools by the agencies / others identified (both individually and under collaborative arrangements)
- Evaluation of the mechanisms / tools implemented, to consider their feasibility and effectiveness (within appropriate timeframes)
- Review and improvement of the tools and mechanisms adopted, informed by the evaluation evidence

Supporters of such a 'holistic' approach to marine protection stressed the need for evidence-based decision making, including research on the benefits of marine reserves and other management mechanisms. They also stressed the need for more collaborative approaches to management amongst the agencies involved, and between the agencies and adjacent communities and stakeholder groups.

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[2] Presumably, this would need to be an inter-agency exercise because of the various responsibilities of different agencies, and it would need to be a consultative process.

7. Education and advocacy approaches

In its 2004–2007 Statement of Intent (SOI), DOC outlines the importance of building public support for conservation. Two key strategies to increase such support are building public awareness and understanding of conservation issues, and providing help and opportunities for people to be involved in DOC's work or to lead their own conservation initiatives.

7.1 INFORMATION NEEDS

The types of information needs that stakeholder groups identified for themselves or others can be broadly divided into three areas. First, they identified information needs that generally reflect their relationship with the marine environment. Thus, recreational fishers focused on information about allowable catches and fishing mechanisms, especially for groups that they identified as knowingly or unknowingly flouting the law. Boaties and yachties identified information such as how to defoul boat hulls appropriately and boat safety.

Second, stakeholder groups described their need or desire for information about current conservation activities. They want information about DOC's marine conservation priorities and activities, especially at the local and regional levels, and information about the respective roles and responsibilities of others involved in marine protection, such as local and regional government, MOF and MSA. Stakeholders were also interested in information about DOC's current working partnerships, especially at local and regional levels, such as marine protection initiatives involving local recreational, community or conservation groups.

Stakeholder groups also want evidence-based or scientific information, both about marine ecology generally (for instance, about the health of particular fisheries, or the impacts of particular activities) and the rationale for DOC's and other agencies' adoption of particular marine conservation mechanisms. For instance, one group, which was vociferously opposed to current marine reserves initiatives, wanted access to research that showed both where best to locate such reserves and how they enhance marine ecological values. As well as wanting transparency in decisions regarding the establishment of marine protection areas, two groups considered that a research base is needed to set clear objectives for marine protection areas and to monitor and evaluate their effectiveness.

7.2 INFORMATION DISSEMINATION

Despite research participants' varied backgrounds, demographic characteristics, and relationships with, and activities in, the marine environment, they had remarkably similar views about how DOC and others could best present and package information relating to marine protection, and how they could best get desired messages to the right individuals and groups. In general, they rejected unsolicited and widely focused material in favour of the development of targeted information, with the content, format and distribution mechanisms matched to the characteristics and behaviours of the intended recipients. One example of targeted information is educational messages placed where possible problem-behaviour is likely to occur. For instance, information about catch and size limits could be usefully placed at boat ramps, on beaches and at fishing clubrooms.

Suggested formats and distribution mechanisms were as varied as the suggested content and recipients. However, groups did agree that DOC and others need to be sophisticated in their design of material and be prepared to learn from advertisers and other successful messengers. Some individuals within groups suggested using media such as television, the internet and cinema advertising. Groups' familiarity with items in the reality television show 'Coastwatch' indicates both the level of penetration of television in New Zealand homes and the potential interest in marine-related stories. However, the negative responses of some groups to the rural road-safety campaign on television highlight the dangers of messages that are too obviously didactic. Other suggested innovative mechanisms for information distribution included:

- *Use travelling road shows, take it to where it matters* (conservationist)
- *Environmental / conservation articles on 'Flipside' (young people's television programme)* (student)

Secondary school groups came up with unique information dissemination ideas. While one student's idea of dropping flyers out of planes may not be practical, other students highlighted the need for short and simple messages using a range of techniques. One group compared two posters on their classroom wall to illustrate their point: one DOC information poster about marine mammals was perceived as too wordy and boring, while a simple and catchy poster encouraging people to take a taxi home rather than drink and drive was perceived as more effective. Other ideas were centred on current trends, such as text messaging, or having a 'silly' jingle or tune that had a marine conservation message.

The following suggestions, illustrating the themes described above, were typical of focus group discussions:

- *Information needs to be simple and brief* (student)
- *'Coastwatch' is very powerful, so think about similar programmes about other marine issues* (recreational fisher)
- *Educational messages are needed at boat ramps* (boatie / yachtie)
- *Establish and promote easy to remember contact numbers where people can report good and bad behaviour, and get information about catch limits, size, and so on* (recreational fisher)

- *Put up information signs in places where we go* (student)
- *Promote catch-and-release for recreational fishers* (recreational fisher)
- *Build on people's existing goodwill* (recreational fisher)
- *Design stickers that people can use in their cars, boats, etc.* (boatie / yachtie)
- *Drop flyers out of planes* (student)
- *Have a silly song* (student)

7.3 PUBLIC AWARENESS AND SUPPORT THROUGH CONSERVATION ACTIVITY

As described in the 2004–2007 SOI, people's awareness of conservation issues and support for conservation activities will be enhanced if they are given opportunities to be involved in conservation work. Such potential from enabling public involvement in conservation activities was not lost on some focus groups. Educators reported the positive conservation outcomes that they observed when students had the opportunity to carry out activities such as tree planting, beach clean-ups, species counts and similar hands-on activities. One teacher described such activities as 'dirty fingernails' conservation. Thus, the effectiveness of conservation awareness strategies can be enhanced when there are opportunities for people to have active experiences of conservation. Conversely, they can be damaged if DOC's activities are perceived by communities and groups as discouraging their involvement in conservation initiatives. Some specific suggestions were:

- *Extend existing infrastructure and community groups to assist in marine protection* (conservationist)
- *Have incentives for successful community groups, good PR stuff* (conservationist)
- *Build on the pride of communities: we've got the cleanest beach* (coastal community)
- *Fund community groups to do clean-ups* (young person)
- *Have awards for jobs well done* (young person)
- *DOC should not discourage community involvement just because it is easier from a management perspective—people are losing their responsible attitudes through a lack of connection* (teacher)
- *Students will take ownership (of conservation issues) if they are able to participate* (teacher)
- *Young people will become the caretakers if they can connect with their environment* (teacher)

8. Summary and conclusions

This research was intended to provide DOC with some understanding of stakeholders' views about the marine environment and marine protection. Information was collected from nine different stakeholder groups, through 14 focus-group meetings held in Whangarei, Auckland and Nelson. Participants included commercial and recreational fishers, conservationists, boaties and yachties, parents, senior citizens, young people, local and regional councillors, secondary school teachers and members of coastal communities. The semi-structured focus-group discussions, guided by a topic guide, sought information about: stakeholder groups' marine experiences; their understandings of marine health, its value and the threats it faces; their knowledge of, and views about, current and required marine protection; and their ideas about effective education and advocacy. The research will support the implementation of DOC's 'Building Community Support for Marine Protection' strategy.

8.1   STAKEHOLDERS' UNDERSTANDING AND VIEWS

Almost without exception, focus groups described the marine environment as an integral part of their lives from childhood (exceptions included those born overseas), as a place of recreation and family time. While the intensity of stakeholders' relationships with the marine environment and the frequency of visits varied (some boaties, fishers and coastal community members were daily users, while some other stakeholders were summer visitors), their use was typically broad ranging. Participants, including those for whom the sea provided a living, usually enjoyed a range of recreational activities, from active pursuits to picnicking and sunbathing. For a few, their interaction was mainly visual.

In general, focus groups understood the concept of biodiversity as an indicator of marine health, and the contribution that a mix of land- and sea-based activities makes to marine degradation. However, they did not necessarily consider marine health only in terms of physical qualities. Groups, especially in the Auckland area, were equally concerned about access to marine areas and the intensity of use in their explanation of what constitutes a healthy environment. Thus, an unhealthy marine environment could be crowded, noisy, inaccessible, have an over-developed coastal area, lack the necessary amenities and facilities, lack the range of indigenous species, have an over-abundance of exotic species, have poor water quality, lack coastal bush cover, and so on.

The extensive range of benefits of a healthy marine environment identified by focus groups included its contribution to our individual, cultural and national identities, the economy, recreation, health, education and physical sustenance. While most groups initially focused on the economic benefits (particularly through tourism and fishing), focus groups often moved on to talking about the more intangible benefits, such as those relating to identity.

The threats to the marine environment identified by focus groups were related to its physical and biological qualities, the recreational opportunities it provides, its aesthetic appeal and its economic values. In broad terms, the identified threats resulted from: land management and farming and forestry; coastal development and management; aqua–farming; fishing (including recreational, commercial and illegal); regulation and compliance issues; industrial activity; increasing commercial and recreational water-based activity; and household and individual behaviour.

While there was general recognition amongst all focus groups of the need for marine protection, there was variation in to whom they attributed that responsibility and the likely effectiveness of different protection mechanisms. Some groups, particularly the fishers, councillors and conservationists, recognised that DOC, MOF, local and regional government and others all have marine protection responsibilities. Other groups tended to focus on DOC, until individuals started to talk about other agencies' responsibilities. Groups expressed both surprise and frustration at the lack of cooperation between these agencies and their general lack of support for individual and community conservation and policing initiatives.

Marine reserves attracted much debate. While some groups (for instance, parents, the coastal community, young people and conservationists) supported and promoted the establishment of marine reserves, others vociferously expressed opposition. Recreational fishers were most vocal in their opposition. Their principal concern related to the process of establishing reserves in the context of, they argued, insufficient evidence to identify their best location and their effectiveness.

Differences within and between groups' understandings, views and experiences could not be easily attributed to identifying characteristics, such as affiliation with particular stakeholder groups or age. However, there are some general observations that can be made:

- Commercial and recreational fishers tended to initially blame each other for perceived over-fishing and diminishing fish stocks. However, on further reflection, both groups of stakeholders concluded that poaching and other illegal activities are the cause of many of the problems. Most were quick to point the finger at groups that they thought were largely responsible for these transgressions, and considered that responses needed to include mechanisms to ensure compliance (policing and fines, confiscations and / or prison) and education.

- Young people argued for sustainable use of the marine environment, consistently supported marine protection areas and recognised the role that they could play in raising the awareness of their parents and other family members about marine issues. They also recognised their responsibility as the future caretakers of the marine environment, and were therefore keen to suggest ways to effectively target information to their generation.

- Older people were in the best position to observe the considerable change for the worse that marine areas have experienced. Mindful of this loss, they were also the group most likely to note the importance of putting a stop to such degradation so that their children and, more especially, grandchildren could have the opportunity to experience, as much as possible, the marine environment that they had experienced.

- Teachers were the most vocal about the benefits of practical experience in raising awareness of, and support for, conservation. In their view, the benefits of providing students with the opportunity to be involved in monitoring and other hands-on conservation activities is twofold: firstly, students can make a useful contribution to marine protection, including monitoring and other research-related activities; secondly, and more importantly, they are more likely to make a life-long commitment to conservation.

- Boaties and yachties were the most likely to be concerned about increasing activity in marine areas, conflicts between different types of users and the potential safety issues posed by the increase in aqua-farming. They were least likely to refer to marine life as an indicator of marine health—they tended to think of the marine environment as the sea.

- Councillors were particularly concerned about access issues, both because of the level of development around coastal areas and because of the intensity of use of some marine areas. They were also particularly concerned about conflicts between users.

- Parents, young people and conservationists were the most supportive of marine reserves, although support was not limited to these groups. They were most likely to suggest considerable percentages of the coastal area (sometimes extending out to the 200-mile zone [200 nautical mile EEZ]) to be 'no take' areas.

8.2 STAKEHOLDER ENGAGEMENT IN MARINE ISSUES

People's interest in participating in the focus groups that underpinned this research varied. Some were extremely interested in participating and some were less keen. None were indifferent to marine issues. However, some focus groups were considerably smaller than anticipated. The disappointing turnout in some of the focus groups, despite people's initial agreement to attend and the receipt of reminders in the preceding week, raises questions about the interest of the general public in marine issues. While turnout was generally good in groups with specific commercial or recreational interest in the marine environment, it was lower amongst groups with a more general interest, such as senior citizens and coastal communities. There may be several explanations for the variable interest, each of which has implications for DOC's design and delivery of marine-related public-awareness programmes:

- People may not be as interested in, or concerned about, marine issues as expected. If DOC's intentions are to raise awareness, such apparent lack of interest needs to be taken into account in the design and dissemination of material.

- People may have been too busy to attend, given factors such as increasing levels of employment and, for the minority who get involved in community and other voluntary activities, increasing and competing demands on their time. DOC needs to ensure that awareness programmes and material are targeted, to avoid wasting people's time and, therefore, increasing their frustration or 'turning them off' an issue.

- People may have been wary of marine issues, given ongoing debate and a contentious Government response to the 'foreshore and seabed' issue. Organisation of similar focus groups at another time may have attracted, or could attract, higher levels of attendance.

- Stakeholders may have been less motivated to participate in discussions about the marine environment generally compared with discussions about specific marine issues such as marine reserves or poaching.

8.3 IMPLICATIONS OF RESEARCH FINDINGS FOR 'BUILDING COMMUNITY SUPPORT FOR MARINE PROTECTION' STRATEGY

As set out in the Introduction, this research is intended to support the implementation of DOC's 'Building Community Support for Marine Protection' strategy. This strategy aims to engage the community in marine protection through:

- Increasing understanding of the coastal and marine environment and the effects of our activities

- Developing the motivation and desire to protect this environment

- Promoting and encouraging individual and community initiatives to protect, maintain and restore habitats and ecosystems important for marine biodiversity

The research findings indicate some key considerations for DOC in its implementation of the strategy:

- Given their conservation ethic, young people can play an important role in furthering the goals of the strategy. They can act as ambassadors for marine protection as well as messengers of key information, particularly in their home environments. Thus, there is likely to be some value in DOC working with schools. Because young people's interest in, and knowledge of, marine conservation is an outcome of both formal teaching programmes and experiential learning, DOC's activities could include both encouraging, supporting and resourcing teachers, and providing opportunities for young people to get involved in conservation activities.

- The impact of the television programme 'Coastwatch' on focus-group participants' awareness of border control, poaching and related issues demonstrates the potential power of the television medium, particularly reality television and documentaries, in getting messages across to a wide cross-section of the community. The recently aired television series 'Park Rangers', which had a more specific DOC focus, attracted a similarly wide audience. DOC could further explore the potential effectiveness of such documentary programmes to increase community understanding of the coastal and marine environment and the effects of their activities.

- At least one participant in each of the focus groups talked about their individual contributions to marine protection, for instance through informing users of the impacts of their activities or of regulations, reporting transgressions, active involvement in planting, and other restoration activities or changes to their individual behaviour. DOC could further encourage such individual and group initiatives through: providing resources to community groups (e.g. information, technical advice, plants); providing opportunities for communities to become actively involved in conservation activities (e.g. monitoring, restoration); and ensuring prompt responses to individual and community policing activities. Conversely, DOC needs to avoid activities that could be perceived by communities and groups as discouraging their involvement in conservation initiatives.

- One of the consistent messages of focus groups was the need for key information about fishing limits, boating-related regulations and other aspects of coastal and marine protection to be placed where relevant users are most likely to see them. DOC is already putting considerable resources into improving interpretation at key sites. It may be appropriate for DOC to also work with other agencies responsible for marine protection, including MOF and territorial authorities, to develop integrated interpretation at some key sites.

- DOC's conservation initiatives are likely to be supported at community, stakeholder group and individual levels if they are clearly evidence based. To encourage community engagement in such conservation initiatives, DOC could ensure that research findings are presented in clear and concise formats and made easily accessible.

8.4 NEXT STEPS

As discussed in the Introduction, this research did not canvas the views of hapū and iwi as separate stakeholders. Also, Māori participation in the focus groups was low. Further research is required to explore the views of hapū, iwi and other Māori organisations in the three conservancies. The current research findings, coupled with the recommended new research, would then provide DOC with the basis to carry out some more quantitative research, if desired.

9. Acknowledgements

10. References

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Appendix 1

FOCUS GROUP TOPIC GUIDE

A1.1 Introductory discussion topics

- What do you mean when you think or talk about 'marine environments'?
- Tell us about particular marine environments you visit / have an interest in
- Tell us about your interest in / use of the marine environment
  - — Recreational (e.g. diving or snorkelling)
  - — Commercial / work related
  - — Food collection
  - — Protection / conservation interests / activities.

Discussion: Tell us what you think a healthy marine environment is.

- What might be some signs / indicators of a healthy or unhealthy marine environment?
- How has the marine environment changed over time?
- Was it different before? If yes, when and how?
- What would you like it to be like in the future?
- How important to you is the health of the marine environment compared with other environmental issues?
  - — What issues are more or equally important?
- Are you able to do what you want to in the marine environment?
  - — If not, how / why not?
- Are there particular experiences that have shaped your current views about the marine environment?
- How do these views shape your activities in the marine environment?

A1.2 The value of a healthy marine environment

- What do you see as the value to / benefits of New Zealand having a healthy marine environment?
  - — Ecologically / environmentally
  - — Economically
  - — Culturally
  - — Spiritually
  - — As a source of food

- What do you see as the costs of New Zealand not having a healthy marine environment?
    - — Ecologically / environmentally
    - — Economically
    - — Culturally
    - — Spiritually
    - — As a source of food
- Tell us what you see as the main threats to the health of the marine environment
    - — Generally
    - — In special areas
- Do you think that you have any control over these threats?
    - — Can you or do you do anything to mitigate these threats?
    - — Can you or do you do anything that makes them worse?
- Tell us about any conflicts you are aware of around the use of particular marine environments

A1.3   Protecting the marine environment

- Do you think we need to protect the marine environment generally?
    - — Why?
    - — Why not?
- What do you know about marine protection in New Zealand?
    - — In general
    - — With reference to marine reserves, marine parks, marine protected areas and marine mammal sanctuaries
- What percentage of New Zealand waters do you think are / should be protected?
    - — Protect from what activities?
- Do you think we have it about right in New Zealand currently (both the amount and the form of protection)?
    - — Please explain
- What sort of overall management is required?
    - — What sort of interventions?
    - — Who should be responsible?
    - — Are there opportunities for partnerships—between whom?

- Is there a role for the community to be involved in managing New Zealand's marine environment? If so, what is that role?
- Do you feel personally responsible for assisting in this protection process?
- Do you do anything currently to assist? If so, what?
- Do you do anything currently to harm the marine environment? If so, what?
- What would you personally be willing to give up to improve the health of the marine environment?
- What would be the issues for you if a marine protected environment was established in the particular marine environment we discussed earlier (i.e. introductory questions)?
- How do you think agencies such as DOC, local government, etc. could encourage community involvement in the management of marine protected areas?

A1.4   General

- What information on marine issues do you want / expect?
- Where do you go to obtain information on marine issues?
- Where would you like to be able to get this information?
- In what form would you like to receive the information?
- Where do you think other people get their information?
- What would be the best way to distribute information on marine issues?
- Do you have any other issues regarding the marine environment in New Zealand?

Appendix 2

Some examples of the particular marine environments participants identified as special to them include:

- Whangarei Harbour
- Hen and Chicken Islands
- Three Kings Islands
- Poor Knights Islands
- Ruakaka beach
- Whale Bay
- Tutukaka
- Manapori
- Hauraki Gulf and islands
- Auckland Harbour
- Waitemata Harbour
- Leigh Reef
- Coromandel Peninsular
- West Coast (Auckland's)
- Waiheke Island
- Great Barrier Island
- Pakari Beach
- Islands in the Hauraki Gulf
- 90 Mile Beach
- Enclosure Bay
- Richmond, Stoke and Nelson coastline
- Waimea Inlet
- Tahunanui Beach
- Marlborough Sounds
- Golden Bay
- Able Tasman National Park