

A review of public attitudes towards marine issues within and beyond New Zealand

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Allison Arnold

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Allison Arnold

WWF-New Zealand, The Treehouse, Botanic Garden, Glenmore St,
P O Box 6237, Wellington, New Zealand
Email: Allison.arnold@wwf.org.nz

ABSTRACT

This paper reviews current research on public attitudes towards marine issues and considers the New Zealand Department of Conservation's future research priorities in this area. The paper is based on a review of previous research undertaken by the Department and other local and central government agencies within and beyond New Zealand and discussions on research priorities with Department staff. For each study the key research findings and research methodologies are discussed. Possible research priorities for the Department and recommendations for further research on public attitudes towards marine issues are then outlined.

Keywords: Marine, public attitudes, research, New Zealand.

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1. Introduction

The Department of Conservation (DOC) plays an important role in New Zealand's marine management framework. The management responsibilities of the Department include marine protected areas, protected marine species, coastal management, and marine biosecurity. Public support is vital to the success of DOC's marine conservation work. The attitudes of New Zealanders and their behaviours toward the marine environment will influence the effectiveness of conservation programmes.

1.1 BACKGROUND AND PURPOSE

DOC has set several goals for engaging the community in marine protection, which are stated in the strategy, *Building Community Support for Marine Protection* (DOC 2002a). The goals include increasing public understanding of the coastal and marine environment and the effects of our activities, and developing the motivation and desire to protect the marine environment¹.

To address public perceptions and understanding of the marine environment DOC plans to run a public awareness campaign (Sea Our Future) in 2004–2005. Evaluation will be required to determine whether the campaign is delivering on its goals, which are yet to be determined. DOC's Science Planning Group has approved funding for a survey of the level of public awareness, support and involvement in 'marine issues' for 2003–2004. The results of the research will provide baseline data about public understanding and should indicate which groups and issues should be targets for DOC's marine awareness campaign.

The purpose of this document is to help define the scope of the research that DOC will conduct on New Zealanders' attitudes and behaviours toward the marine environment. This document addresses the scope of the proposed attitudinal research by:

- Identifying possible research aims.
- Summarising examples of attitudinal research on the marine environment conducted within and outside New Zealand and relating them to the design of DOC's research.
- Discussing factors that should be considered when designing the research project.
- Offering recommendations for progressing with the research, including recommendations on methodology.

¹ A third goal of the strategy is to 'promote and encourage individual and community initiatives to protect, maintain and restore habitats and ecosystems important for marine biodiversity' (DOC 2002a).

2. Methods

The aims provisionally identified in this report were informed by conversations with DOC staff who are involved in managing the marine environment through policy formulation, community relations, and co-ordination roles. Staff working in Wellington's Head Office, the Science & Research Unit, the Northern Regional Office and the Northland, and Auckland conservancies were consulted. Insights gained from reviewing other attitudinal studies on the marine environment also contributed to the proposed aims.

Examples of attitudinal research about marine issues were sought from library databases, particularly those that focus on social science research. The scant amount of material found seems to indicate that any research that has been conducted on public attitudes toward marine issues has not been widely published. The internet was instrumental for finding examples of relevant research, particularly international examples. For countries where examples were sought, but not found, government agencies with marine protection responsibilities were contacted via email.

New Zealand examples of attitudinal research on marine issues were found by contacting people in local and central government. Coastal planners for regional councils reported that they are consulting about particular activities with relation to the marine environment (particularly sewage disposal and aquaculture issues), but formal surveys or focus groups are not generally part of their approach. An exception is the Wellington Regional Council (WRC) whose research is described in section 4.1.2. Ministry for the Environment staff, especially those working in the Oceans Policy Secretariat, were asked about public surveys of marine issues. Non-government NGOs including, Environmental and Conservation Organisations of New Zealand (ECO), Greenpeace, and the World Wildlife Fund (WWF-New Zealand) were also contacted about their knowledge of such studies.

3. Proposed research aims

Discussions with DOC staff seemed to indicate a lack of clarity about what the aims should be for a study of public attitudes and behaviours toward the marine environment. DOC (2002a) provides a useful framework for collaborating with communities for marine protection. This document, however, is focused on marine protected areas, while the responsibilities of DOC, and marine issues affecting communities go beyond area protection. The current report will refrain from narrowing the scope of the proposed research until there is clearer indication of the Department's strategic direction for defining 'marine issues' and how they relate to community awareness. The Department's Draft Interim Marine Conservation Strategy (DOC 2002b) and the anticipated Marine

Protected Areas Strategy, prepared by DOC and the Ministry of Fisheries, may provide guidance in making this decision.

While the scope of the study has yet to be determined, this report offers the dimensions of public engagement with the marine environment that could be investigated through social research methods. The aims are directed at the more general 'marine issues' level, but could be modified to target a more specific marine issue such as marine protected areas.

In a review of previous surveys on the public's understanding of environmental issues, Bell (2001) observed that most surveys² lack an 'action element'. She defined this as an assessment of 'what people are prepared to do to act in an environmentally responsible manner and what barriers there are to caring for the environment' (Bell 2001, p. 2). Thus, the aims proposed in this report were constructed not only with a view toward revealing New Zealanders' attitudes, perceptions, values, and knowledge toward the marine environment, but also the potential for and barriers to responsible behaviour.

The proposed aims for DOC research on public attitudes and behaviours toward the marine environment are listed below:

To understand New Zealanders' attitudes, perceptions, and values toward marine issues and how they were formed.

- What experiences shaped current attitudes (e.g. What are New Zealanders' positive associations with the marine environment)?
- To what extent do people take individual responsibility for the state of the marine environment?
- How do New Zealanders feel about restrictions on their behaviour in the marine environment (i.e. Government regulations)?

To assess the level of public awareness and knowledge about different marine issues.

- How important is marine conservation compared with other environmental issues?
- What do people perceive as the main threats to the health of the marine environment?
- What do people know about marine protected areas and species (e.g. extent of areas protected)?
- Where do people obtain information on marine issues?
- What additional information would people like about marine issues and in what form?
- How do conservation awareness and expectations for the marine environment differ on the basis of age, geographic location, ethnicity, perception of DOC, etc.?
- To what extent would people support a campaign that addresses marine issues?

² The general conservation awareness survey conducted for DOC by UMR Research Ltd. polled New Zealanders about both their understanding of conservation issues and their level of involvement in conservation activities (UMR Research Ltd. 2002).

To reveal human behaviours that are detrimental and behaviours that are beneficial to the marine environment.

- How do people engage with the marine environment in positive ways (e.g. visiting marine reserves, serving as honorary rangers, writing to political leaders about marine protection, avoiding application of pesticides, consuming fish caught or farmed sustainably, taking care in disposing of waste, participating in beach clean-ups, coastal restoration work, educating others)?
- How do people engage with the marine environment in negative ways (e.g. exceeding recreational catch limits, collecting in no-take areas, dumping boat septic tanks near shore, anchoring in fragile areas, dumping harmful waste in storm drains)?
- What are people willing to do to conserve the marine environment?
- How long are people likely to sustain positive behaviour toward the marine environment?

To identify obstacles to behaviours that protect and benefit the marine environment.

- How do attitudes about the marine environment influence behaviour?
- How much does knowledge about the marine environment determine people's connection to it?
- How well do New Zealanders understand the link between individual actions and the health of the marine environment?
- How do New Zealanders' perceptions of DOC as an organisation influence their perceptions of the Department's marine conservation efforts (e.g. perceptions about DOC's 1080 policy)?

4. Research on public understanding of marine issues

This project uncovered a sample of studies that have been conducted on public attitudes towards and understanding of the marine environment. The search for examples focused on studies that have a survey component because DOC staff indicated an interest in generating quantitative research on communities and marine issues that can be measured over time. The methods and scale of the surveys reviewed are diverse. There are a few international examples of surveys about marine issues conducted at the national scale, but most surveys have been conducted at the regional level. Some of the examples employed questionnaires and focus groups to generate both quantitative and qualitative information about public perceptions of the marine environment. One study investigated public perceptions and stakeholder perceptions separately for comparison purposes. Some notable research from within and outside New Zealand is summarised below, but this report is not intended to be a comprehensive review of the literature on public attitudes toward marine issues.

4.1 ATTITUDINAL RESEARCH ON MARINE ISSUES CONDUCTED IN NEW ZEALAND

Few studies have been conducted in New Zealand on attitudes, awareness, and behaviour toward the marine environment. Bell's (2001) review identified 93 environmental surveys from New Zealand and 9 from abroad. None of the surveys mentioned in her review were targeted at the marine environment, although some specific marine issues have been researched in New Zealand, such as a region-wide survey on storm-water pollution in Auckland (Auckland Regional Council 2000, cited in Bell 2001)

Bell observed that New Zealanders identified water quality as an important environmental concern in general surveys of environmental issues. The public did not demonstrate the same concern for the marine environment and biodiversity, despite their being identified in the 1997 report on the state of New Zealand's environment (Ministry for Environment 1997) as amongst New Zealand's most pervasive environmental issues (Bell 2001).

DOC's general conservation awareness survey (UMR Research Ltd. 2002) has revealed some public perceptions on marine issues. According to the survey, protection of the marine environment is considered to be New Zealand's fourth most important conservation activity behind biosecurity, the protection of native bird and plants, and preservation of bird and plant habitats. However, when people think of the meaning of conservation, protecting fish and marine life do not come immediately to mind for most (UMR Research Ltd. 2002).

The following four 'surveys' from New Zealand were specifically targeted at marine issues and may be of interest to DOC when it designs its own study. The research discussed includes: a survey of the oceans policy submission process (Ministerial Advisory Committee on Oceans Policy 2001); A study, for the WRC, on Wellington residents' perspectives on their marine environment (Hastings & Yockney 2001); a WWF-New Zealand supporter survey questionnaire report, prepared for the Ministry of Fisheries (Corydon Consultants Ltd 2001); and a survey of New Zealanders' perceptions of the state of marine fisheries and their management (Hughey et al. 2002).

4.1.1 The Oceans Policy submission process

The Oceans Policy initiative (Ministerial Advisory Committee on Oceans Policy 2001) is aimed at integration of the current piecemeal framework that guides regulation of human activities in New Zealand's marine environment. It is a government-wide policy reform project administered by the Oceans Policy Secretariat, which is housed at the Ministry for the Environment. The Oceans Policy is being designed in three stages over several years. The stages are: define the vision and values, design the process to achieve the vision, and deliver the vision.

The first stage of the project, defining the vision and values, was accomplished through a nation-wide consultation process that invited New Zealanders to articulate their values about the marine environment. Qualitative feedback was collected from dozens of meetings and hui held throughout the country and from 1160 written submissions. A formal submission booklet asked seven

general questions of the public such as, 'What do you value most about our oceans?' In general, however, the consultation process was unstructured.

Stage 1 of the Oceans Policy process yielded broad perspectives on New Zealand's marine environment which are encapsulated in the report from the Ministerial Advisory Committee on Oceans Policy (2001). Several marine issues were discussed in the report including the need for an ecosystem-based approach to management, and concerns over water quality, biosecurity, over-fishing, access to the coast and sea, allocation of space and resources, and understanding of the oceans.

The input to the Oceans Policy may not represent the knowledge and aspirations of the average New Zealander because the process attracted many who already have an interest in the marine environment. However, a potentially valuable part of the Oceans Policy report for development of DOC's attitudinal research is the summary of submissions analysis (Appendix D of their report). This section of the report gives demographic information on submitters and lists themes, issues, and values raised during the consultation process. For example, of the 1160 submissions received, 718 submissions raised the issue of controls on over-fishing/resource depletion, 651 submissions mentioned control of sewage discharge/pesticide runoff, 74 submissions proposed limiting marine reserves, and 165 were in favour of more reserves. In the values category, 74% of the submissions mentioned the value of the marine environment for recreational purposes.

4.1.2 Our marine environment: residents' perspectives

The WRC commissioned research into public perspectives on the marine environment in 2001. The results of the research were intended to inform a council strategy for the marine environment. The aim of the research was to determine what the people of the Wellington region thought and felt about the marine environment including:

- General attitudes, including degree of connection with the sea.
- Satisfaction with the state of the marine environment and concerns held.
- Most valued aspects of the marine environment.
- Awareness of WRC's role in relation to the marine environment.

The research was carried out by A.C. Nielsen (Hastings & Yockney 2001) using six focus groups. The focus groups were structured to represent the different geographical areas of the council. There was also a young urban group of people under the age of 25 who were resident in more than one geographic area. The groups had a mix of males and females and had representatives of Maori and/or Pacific people.

The results of the research (summarised below) include information on the following issues:

Emotional connection that residents have with the sea

Residents' connections with the sea are as strong as their connection with the land except for Wairarapa residents.

Connotations of different words used to label the marine environment

People associate the word 'sea' with a familiar shoreline, whereas people have broader associations with the phrase 'marine environment', which includes the deeper sea, ecosystems, sea creatures, and human influences.

'Sea' is a more emotive word while 'marine environment' is more intellectually stimulating³.

Concerns about the region's marine environment

Issues raised included pollution, depletion of marine life and other natural resources, equal access to the shore and to fish, and development along the water line. Concerns were less deeply held in areas far from shore due to the limited interaction with and knowledge of the deeper sea.

Where responsibility for the marine environment lies

Residents identified a joint responsibility between the local community and society and government authorities, including DOC. Residents claimed responsibility for educating children, setting examples, and being conscientious. Authorities were deemed responsible for developing legislation, allocating financial resources, monitoring environmental quality, and policing human activity. Responsibility was also placed on commercial users and on environmental watchdog and lobby organisations.

Barriers to exercising responsibility for the marine environment

Residents expressed lack of knowledge about what the issues are and how significant the issues are relative to each other. There is also a perception that there are too many organisations involved in marine management, which are all under-resourced, lack accountability, and fail to co-ordinate their efforts. Residents were unsure of which authorities performed which duties.

Focus group participants were also asked a background question about what comes immediately to mind when they think of the WRC. The associations people mentioned varied depending on the area that the focus group represented, but included: 1080 poisoning, Transmission Gully, flooding, marine reserve and building permits. This type of question is important for understanding how public perceptions of marine issues may be influenced by their perception of the Council, based on its management of issues that may be unrelated to the marine environment. Similarly, public perceptions about DOC's management of marine issues are likely to be influenced by perceptions of the Department's handling of other issues.

4.1.3 WWF–New Zealand supporter survey questionnaire for the Ministry of Fisheries

In 2001, New Zealand's World Wide Fund for Nature commissioned a survey of the opinions of their supporters on a range of fisheries management-related issues in New Zealand (Corydon Consultants 2001). The results of the survey were submitted to the Ministry of Fisheries as part of WWF's participation in the development of the Ministry's Strategy for Managing the Environmental Impacts

³ Associations with the word 'ocean' were not investigated.

of Fishing (SMEEF). The survey involved telephone interviews with approximately 140 WWF-New Zealand supporters. Respondents' views on the following nine topics are summarised below:

Killing of non-target species as bycatch

The responses of 52.9% of WWF-New Zealand supporters indicated that 'some bycatch is acceptable provided the populations of non-target species are not threatened as a result', while 45.7% thought that 'no bycatch was acceptable'.

Impacts of fishing on marine habitats

Intervention to protect marine habitats through protection of habitats and ecosystems that have not been damaged was supported by 39.3% of respondents; 53.6% thought 'maximum protection is needed for all marine habitats'.

Appropriate trade-off between socio-economic and conservation issues

According to 77.9% of respondents, 'there should be an equal balance between conservation and the social and economic benefits' of fishing.

Importance of different fisheries-related issues

'The long-term health of the oceans' was rated by 82.1% of respondents as the most important fisheries issue when compared with 3 other issues including 'bycatch of non-target species', 'impacts of fishing methods on marine habitats', and 'lack of knowledge and awareness about the overall impacts of fishing'.

Level of caution that should be used in fisheries management

'Until there is proof that a fishing technique will cause no damage [to the marine environment] it should not be allowed to proceed' according to 50% of respondents; while 47.9% thought 'a balance is needed between the need for proof about fishing impacts and the need to catch fish'.

A vision for the future state of the marine environment

It was very important to know that there are healthy fish populations for 81.4% of respondents. The importance of 'buying affordable fish in the shops' (25.7%), catching plenty of fish recreationally (21.4%), employment in the fishing industry (17.9%), and fisheries export earnings (15.7%) were not ranked as very important by most respondents.

Other issues of concern

Issues included over-fishing and poaching; foreign fishing vessels operating in New Zealand waters; particular fishing practices; the need to protect whales, prohibit whaling and establish whale sanctuaries; the need for better research and information on the marine environment; and the need to establish more marine reserves.

Knowledge of fisheries management

Most respondents considered their knowledge of fisheries management, including the Quota Management System to be either limited (43%) or average (41%).

This survey identified salient issues relating to the impacts of fishing on the marine environment. It may serve as a resource to DOC if the Department opts to include fisheries management questions in its survey.

4.1.4 Perceptions of the state of marine fisheries and their management

As part of a biennial survey of New Zealanders' perceptions of the environment, Hughey et al. (2002) asked a number of questions about the state of marine fisheries and their management, including consideration of marine reserves. The survey was first administered in 2000 using a postal questionnaire and was repeated in 2002. The questionnaires were distributed to 2000 New Zealanders drawn from the electoral roll, and had a response rate of 45%.

Survey questions were developed according to the Pressure-State-Response (PSR) model, developed by the OECD and used by the NZ Ministry for the Environment for their state of the NZ environment reports (Ministry for the Environment 1997). The concept of causality underlies the PSR model. Accordingly, questions were asked to identify perceptions of the main anthropogenic damage to the environment, the state of the environment, and of the response by management. Perceptions of aspects of marine resource management were measured separately. Respondents were also asked how government funds should be allocated among conservation concerns. The results of the study are summarised and discussed below under topic headings.

State of the New Zealand environment

Perceptions of the state of the marine environment were generally adequate to good⁴. Respondents considered there to be a moderate to high quantity of marine fish stocks, but a moderate to low availability of marine reserves. In both the 2000 and 2002 surveys, respondents considered the state of marine fisheries had either not changed or had worsened over the last 5 years, whereas marine reserves were thought to have stayed the same or improved.

Management of the environment

While respondents considered marine fisheries to be poorly to adequately managed, marine reserves were considered to be adequately to well managed. Between surveys, quality is perceived to have improved for marine fisheries, but is consistent for marine reserves.

Main causes of damage to the environment

The main perceived causes of damage to marine fisheries were commercial fishing (60.1% in 2000 to 60.4% in 2002), sewage and storm water (decreased from 32.3% to 31.9%), recreational fishing (increased from 15.4% to 18.5%) and hazardous chemicals (decreased from 22.2% to 15%). The same leading causes of damage were identified for marine reserves: commercial fishing (30.3% in 2000 to 32.3% in 2002), sewage and storm water (29.3% to 28.7%), recreational fishing (17.3% to 21.4%) and hazardous chemicals (18.8% to 14.2%).

⁴ It is unclear whether Hughey et al. (2002) asked a question specifically about the state of the 'marine environment', or more specifically about 'marine fisheries'. The text and the table in their paper do not correspond.

Allocation of government spending

In 2002, respondents said they wanted more expenditure on marine fisheries (from 33.8% to 38.8%) and marine reserves (from 39% to 41%) than they did in 2000.

An interesting aspect of the analysis by Hughey et al. (2002) was the significant variance in many responses based on the ethnicity of respondents. People of ethnic groups other than NZ Europeans or Maori, including Pacific Islanders and those of Asian origins almost always had a more positive view about the state and management of marine fisheries and marine reserves. The authors conjectured that the relatively positive views held by these groups may reflect a different frame of reference, which may have developed in the context of depleted resources in their home countries.

Maori responses were often very mixed or highly negative. Hughey et al. (2002) reported that Maori judge marine fisheries and their management to be poorer than do New Zealand Europeans and 'other ethnicity' respondents. For example, 13% of 'others' and 16% of NZ Europeans believed that marine reserves were poorly managed, while 29% of Maori thought so.

Hughey et al. (2002) highlighted the importance of measuring public perceptions of the state of the environment in conjunction with the conventional biophysical indicators of environmental performance. They commented, 'there is frequently a dissonance between technical and perceptual measures of risk'. Their study also revealed that while many environmental professionals and fishing industry participants view New Zealand as a world leader in fisheries management, public perceptions of the state of New Zealand's marine fisheries are poor relative to the full set of natural resources examined in the 2002 survey.

4.2. PUBLIC ATTITUDE RESEARCH ON MARINE ISSUES CONDUCTED OUTSIDE NEW ZEALAND

The internet and various library databases yielded some international examples of public attitudinal surveys on marine issues. Surveys on marine issues conducted at the national scale were identified in Scotland, the United States, and Canada. Contacts involved in marine management in Australia were unaware of the existence of a national survey, but reported that issue-specific surveys have been conducted in some states. Marine management officials in South Africa also report the lack of nationally conducted attitudinal research on marine issues in their country. The highest profile, and most comprehensive attitudinal research, was that commissioned by the Ocean Project in the United States. Some research projects span national borders, as was the case with a poll conducted in the northeastern USA and Atlantic Canada (see section 4.2.2).

4.2.1 The United States

The Ocean Project

The Ocean Project is an initiative of the Wildlife Conservation Society and the New York Aquarium (Belden et al. 1999) that aims to create long-term, measurable, public awareness of the importance, intrinsic value, and

environmental sensitivity of the marine environment. The project stems from recognition that the greatest impediment to healthy and productive marine and coastal areas is the public's low level of ocean awareness. The project has undertaken comprehensive public polling studies to understand gaps in public awareness about the oceans.

Two public relations firms were commissioned to conduct the attitudinal research. Before embarking on the survey they conducted a review of existing public opinion data on oceans and interviewed six focus groups to inform the crafting of relevant questions for the poll. The national survey for the Ocean Project was conducted among 1500 adults in the continental United States through telephone interviews during 1999 (Belden et al. 1999). In a few cases, the attitudes expressed in the focus groups differed from those reflected in the survey.

The Ocean Project surveyed the following topics. Some of the responses are summarised below under the thematic headings used in the original report.

Awareness of ocean health and connection to oceans

Protecting the oceans is an important issue, but lacks urgency.

Pollution is perceived to be the most salient threat to ocean health, followed by development and destructive fishing practices.

Proximity to the oceans coincides with greater concern for damage to ocean beaches, but not for damage to coastal waters or deep oceans. 50% of respondents rated the health of coastal waters as fair or poor, but more than half of all respondents do not know about the health of the deep oceans.

Knowledge of ocean functions

Knowledge of ocean functions is superficial. While 75% of respondents agree that the health of the oceans is essential to human survival, respondents on average fail to answer three out of five questions on ocean health and functions correctly.

Barriers to increasing concern

Acceptance of general responsibility for ocean protection stems from the common belief that humans are damaging the oceans, but respondents are more likely to see industry rather than individuals as the culprit. (e.g. Most Americans underestimate the damage caused by runoff from yards and streets.)

Building commitment to ocean protection

An association with the oceans as important to emotional well-being is decisive in building concern for ocean protection. Knowledge of the oceans' functions and qualities is less predictive of concern unless linked to implications for humans and the wider ecosystem. University graduates and upper-income Americans are among those respondents with more knowledge of the oceans, but a lack of education and low income are the strongest predictors of placing personal importance on ocean protection.

Americans say they are willing to support actions to protect the oceans even when the trade-offs of higher seafood prices, fewer recreational choices, or more government spending are presented.

The idea that oceans are vital to the balance of nature (e.g. interconnectedness of all life) is the most compelling value underlying personal importance of protecting the oceans. Themes of human survival and responsibility to future generations were also important, but beauty was not.

Appeals to recreational value, personal responsibility, and future exploration and discovery were the most effective messages for persuading respondents about the need to protect oceans.

The study also organised respondents into five attitudinal groups using cluster analysis. Those with the strongest personal connection to the oceans and a personal concern for ocean health were 'young beachlovers'. Surprisingly, the Ocean Project recommended that an awareness campaign target this group more heavily than those who are 'unconnected and unconcerned'. Their rationale was that young beachlovers are the most receptive target for communications about ocean health and are most likely to carry on the messages of an awareness campaign. Paradoxically, the unconnected and unconcerned group were among the most likely to visit aquariums and science museums, but were not absorbing the message of ocean protection from those visits.

While the Ocean Project survey is likely to be broader than a DOC survey on public attitudes, the study yields some valuable insights into how to best appeal to people's inclinations toward marine protection. However, the degree to which the findings would translate to New Zealand's public is uncertain. The Ocean Project has expressed an intention to replicate their survey in other countries. Some of the strategies developed by the Ocean Project may of interest to DOC's Community Outreach Division as they design their own marine awareness campaign.

California survey on fully-protected ocean areas

In 2002, public opinion research about fully-protected ocean areas was carried out in California. SeaWeb, a non-profit organisation designed to raise awareness of the world ocean, commissioned Edge Research to conduct the survey among 1000 likely voters in the state (Edge Research 2002a).

Less than 1% of California waters are fully protected areas in which all extractive activities are prohibited, including oil drilling, mining, and commercial and recreational fishing. Some survey questions related to two ongoing processes that could establish fully-protected areas in California's ocean waters: implementation of the Marine Life Protection Act and the management plan review for the Channel Islands National Marine Sanctuary. The survey result are summarised below:

Respondents rate the health of their oceans negatively, 'with 64% saying the overall health of California's ocean is only fair-to-poor and 29% who say ocean health is good-to-excellent'.

'Californians believe that a far greater percentage of their ocean waters are fully protected from all human activities that could harm the ocean environment than is actually the case.' Respondents believe that 22% of the state's ocean waters are fully protected, which is the same statistic for Americans polled at the national level.

‘There is strong support for fully-protected areas in the ocean in which all extractive activities are prohibited.’ Some 71% of Californians support establishment of such areas, while only 15% are opposed. Support for fully-protected areas is strong in every region of the state.

‘Support for marine protected areas remains constant even when respondents are told they might lose personal access to parts of the ocean.’ Some 69% of Californians continue to support fully protected areas and only 16% are opposed.

‘Californians prefer a long-term approach regarding the economic trade-offs associated with protected areas. When asked which should be the priority consideration for restricting economic activities in the ocean, 65% of California voters say that the “long-term benefits of healthier and more abundant resources, increasing fish populations and increased tourism to restored ocean places” is more important than the “short-term costs in lost jobs, higher prices for goods and services and impacts on people whose incomes depend on ocean resources”. Only 14% feel that short-term costs should take precedence.’

‘Californians place a priority on the views of science and the public at large when it comes to establishing fully-protected areas in the Channel Islands National Marine Sanctuary.’ For 34% of respondents, the decision should be based ‘primarily on science because that is [sic] most objective,’ while 28% say it should be based ‘primarily on what the American public wants because these are National Sanctuaries and ocean resources are a public trust.’ ‘Only 14% think that creating fully protected areas in the Channel Islands should be based ‘primarily on the views of local people and the fishermen who use the Sanctuary because they would be most affected.’

4.2.2 Canada

Public attitudes towards ocean protection

Residents of New England and Atlantic Canada were polled about their views concerning ocean protection in 2002. The research was commissioned by five American and Canadian marine conservation groups⁵, lobbying their governments to fully protect more areas of the ocean. Edge Research designed and conducted the survey as a closed question questionnaire administered over the telephone (Edge Research 2002b). Questions focused on the general state of the marine environment and threats to its health, the effectiveness of commercial and recreational fishing regulations, aquaculture, and fully-protected marine areas. Some of the questions are similar to those that Edge Research asked of Californian voters in the study described in section 4.2.1.

The poll was based on 750 interviews in the Gulf of Maine region; 450 interviews conducted across the states of Maine, New Hampshire, Vermont, Massachusetts and Rhode Island, and 300 interviews conducted across the provinces of New Brunswick and Nova Scotia. A total of 70 questions were asked of the public. The key findings (in italics) of the study were as follows:

⁵ The marine conservation groups that commissioned the poll were: The Conservation Law Foundation, The Ocean Conservancy, Environmental Defense, World Wildlife Fund Canada, and the Canadian Parks and Wilderness Society.

Residents of New England and Atlantic Canada felt the overall health of their ocean waters is only fair, and they believe the health of the commercial fishing industry to be in poor shape.

Pollution, loss of marine mammals, and overfishing were of greatest concern to residents in New England and Atlantic Canada

Few respondents had heard much about marine protected areas but they expect that such areas would be off-limits to commercial and recreational activities that involve taking fish or other marine resources.

The public believes that approximately 22% of ocean waters are already fully protected.

There was strong support (74% in New England and 73% in Atlantic Canada) for establishing fully protected areas in the ocean that would prohibit all extractive activities including commercial and recreational fishing.

Residents of the region placed the long-term benefits of ocean protection ahead of the short-term economic costs.

The public saw an important role for both science and their own views in determining ocean protections.

Learning that less than 1% of ocean waters are fully protected is among the most compelling rationales for the creation of these areas.

Attitudes towards Department of Fisheries and Oceans issues

In 2003, Environics Research Group was commissioned to conduct a survey of Canadians' attitudes toward Department of Fisheries and Oceans (DFO) issues. 2000 adult Canadians were polled through the FOCUS CANADA Omnibus survey (Environics 2003). Canadians were asked questions on a range of topics including: fisheries management, aquaculture, and aboriginal fishing. This research is the only survey discussed in this report which polled the public on their opinions about aboriginal fishing.

The key findings, as interpreted from the raw data on the DFO website, are as follows:

Fisheries management

Canadians thought that people and businesses that profit directly from fishery and marine resources should have a greater responsibility in the management, conservation, protection, and sustainable use of these resources.

Aquaculture

Canadians thought it is important to conduct research on aquaculture and its impacts, support responsible aquaculture development for local benefit, and regulate the aquaculture industry.

Respondents were most likely to obtain information on aquaculture from environmental non-governmental organisations, the aquaculture industry, or the media.

Canadians were divided over whether the aquaculture industry was being properly regulated.

Aboriginal fishing

Canadians strongly agree that the federal government has the right and responsibility to regulate Aboriginal fishing just like other fisheries so that conservation rules are applied to and respected by everybody. Aboriginals, however, are much less likely to strongly agree with this notion.

Canadians disagree that aboriginal people with established historical or treaty rights should have greater access to the fisheries in Canada than they do now.

Canadians think it is important to provide aboriginal groups with tools to build their capacity and skills in the commercial fishery.

4.2.3 Scotland

Review of attitudes and aspirations of people towards the Scottish marine environment

In 1995, Scottish Natural Heritage (SNH) commissioned a survey of people's attitudes and aspirations toward Scotland's marine environment, with respect to its uses, controls, and conservation importance (Cobham Resource Consultants 1996). The study was conducted to inform the development plans of SNH with respect to the marine environment.

The study targeted both the public and marine stakeholders through the use of different survey methodologies. Interviewers visited members of the public in their homes and asked people to answer three closed questions about the marine environment. A sample of 1020 adults from around Scotland was interviewed in this fashion. Stakeholders, on the other hand, were mailed a self-completion questionnaire that was more comprehensive than the one presented to the public. They were asked for their personal views and opinions, rather than the 'official' view of the organisation with which they were associated. Some of the questions asked of stakeholders were similar to those asked of the public for comparison purposes. The questionnaire was distributed to approximately 500 stakeholders. The key findings are summarised below with particular reference to the main research questions that embodied the aims of the study:

What makes the marine environment of Scotland special?

The public think the marine environment of Scotland is important, but not as important as other 'natural' habitats such as rivers and lochs. Both the public and stakeholders feel that a range of features, particularly wildlife and scenery contribute to the value of Scotland's marine environment.

The majority of respondents to both surveys are aware that the seas are important for a range of marine life.

What are the major issues in the marine environment in relation to specific areas of interest?

The majority of the public and stakeholders perceive sewage pollution, and the presence of litter on beaches as major problems. Over half of the public strongly perceive of oil pollution to be a major threat to Scotland's coasts.

Both the public and stakeholders perceive that the seas are being over-fished, but stakeholders express a higher level of concern.

Among stakeholders, 93% believe that fish stocks could be managed in a sustainable manner.

What sort of management is required?

Only stakeholders were surveyed for their views on marine management. Respondents express a need for better integration of management, a balance between national and local delivery of management, and some degree of statutory controls, rather than totally voluntary measures.

What can be done to better promote the marine environment of Scotland?

Only stakeholders were asked about promotion of the marine environment. Over half feel that marine issues are afforded too little coverage and this coverage focuses on either negative features, such as pollution, or charismatic wildlife, such as marine mammals.

How should marine conservation be delivered?

The majority of the public questioned (94%) agree either slightly or strongly that areas of the coast should be specially protected for their wildlife, and only 2% of stakeholders do not think there should be any direct measures applied to nature conservation.

Over 80% of the public believe that marine wildlife is under threat. Stakeholders also believe that a range of features are under-protected including fish stocks, 'other' marine life (including invertebrates), and water quality.

A system of sites in the marine environment managed in an environmentally sensitive way was stakeholders' preferred approach for the delivery of marine conservation. The public also expressed support for areas of special protection for marine wildlife.

Among the recommendations of the Scottish survey were:

- Drawing attention to the variety and importance of 'other' marine wildlife such as invertebrates, and geological/geomorphological features.
- Raising awareness of the role and capacity of the individual in contributing to, or preventing pollution.
- Promoting the marine environment by celebrating the interaction of people with the seas, and disseminating examples of 'good practice'. Also, encouraging the idea that the marine environment is 'fun', perhaps with the help of a high-profile champion of the marine environment.
- Considering the involvement of local communities in the management of fish stocks.
- Discussing conservation approaches wider than site-based measures with those who are opposed to more comprehensive conservation, including commercial fishers.

Although DOC has yet to conduct a marine survey of New Zealanders, some recommendations from the Scottish survey may be applicable in the New Zealand context, or may even have universal application. Some of the findings are very similar to those of the USA's Ocean Project survey, such as the need to focus on individual ability and responsibility with respect to the ocean, and appealing to individuals' sense of fun in promoting marine conservation.

The Scottish survey is also the only study summarised in this report in which both public opinions and stakeholder opinions were investigated. Not surprisingly, the main area of interest of a stakeholder respondent was likely to affect their views on a number of issues.

5. Discussion

5.1 FURTHER DEVELOPMENT OF THE RESEARCH AIMS

The usefulness of DOC's proposed attitudinal research will depend on further specification of the research aims. The Conservation Awareness Unit has indicated its intent to use the research results to target an awareness campaign for the marine environment. In order to maximise the value of the research project, the Department should consider how the data might also be used to inform policy development, monitor against key performance indicators, develop, focus and evaluate education programmes, and allocate resources.

The way in which DOC decides to focus the research should reflect the Department's vision for the marine environment. Staff consulted in the drafting of this report contributed valuable ideas about the kind of data that would be useful to their work. However, no overarching goals of the Department in relation to the marine environment emerged from these discussions. As noted in section 1.1, DOC (2002a), lays out a strategy for engaging with the public to engender support for marine protected areas, but does not address community relations with respect to DOC's other marine management responsibilities. Leadership is needed within DOC to guide the research in a direction that is consistent with the agency's overall strategy for the marine environment.

Once the way in which attitudinal research would best serve DOC's wider marine management goals has been established, the input of DOC staff can be applied more constructively to the research design. Staff concerned with marine issues at both the operational and management levels should be consulted during the design of the research to ensure that the results will be applicable to the Department's business. Such staff might represent the various responsibilities that DOC has in the marine environment including biosecurity, marine protected areas, marine protected species, and coastal management.

DOC's stakeholders are also likely to offer valuable input in relation to the desired outcomes of the research. Some stakeholders, such as environmental organisations and educators, have regular interaction with the public and are likely to have insights into certain marine issues and public perceptions that warrant further investigation. Other government agencies with responsibilities in the marine environment are also likely to suggest marine issues that should be included in a survey.

5.2 MAKING USE OF THE PRE-EXISTING SURVEYS

The examples of pre-existing surveys highlighted in this report are meant to illustrate methodologies and questions that have been used in attitudinal research about marine issues, thereby stimulating thought about how DOC might proceed with its research. Although none of the studies summarised appear to offer an exact template for DOC's research, there are aspects of some studies that could be adopted. Research strategies drawn from other studies with potential value for DOC include: the use of qualitative and quantitative methods, investigation of the views of both the public and of marine stakeholders, and incorporation of questions into pre-existing surveys.

5.2.1 The use of qualitative and quantitative information

DOC is likely to gain the most valuable insights about public attitudes and behaviours toward marine issues by using a combination of qualitative and quantitative methods, such as focus groups and closed question questionnaires. The use of focus groups is a flexible tool for soliciting rich qualitative information about public viewpoints. Groups can consist of people with shared characteristics or can represent a cross-section of the public.

A disadvantage of the qualitative information derived from focus groups is the difficulty in measuring trends through time. Closed question questionnaires are better suited for tracking such changes. The Ocean Project's study (Belden et al. 1999) is one example where focus groups were used to inform the design of a national, questionnaire-based survey. Before designing a questionnaire for wide application, DOC could use multiple focus groups to explore which marine issues should be included. Focus groups could be designed so some represented different stakeholder groups while others were composed of the public.

5.2.2 Investigation of the views of both the public and of marine stakeholders

DOC's attitudinal research has the potential to reveal how public perception differs from that of stakeholders with interests or certain expertise in the marine environment. For example, public perceptions of the greatest threats to the marine environment may differ from threats identified by marine scientists. The results of previous marine surveys consistently indicate that the public is concerned about marine pollution, presumably because it is often visible and is a threat that exists near the shore. However, much recent marine research has focused on the threats posed by over-fishing and the collateral damage that certain fishing methods cause on marine habitats in both coastal and deep-sea environments. The studies by Hughey et al. (2002) and the Canadian DFO (Environics 2003) also illustrated that the views of indigenous stakeholders on marine management may differ from those of the general populace.

The Scottish research project (Cobham Resource Consultants 1996) investigated public and stakeholder perceptions separately through the use of different questionnaires. DOC could use a similar approach, or may gain adequate insight about different stakeholders' views though the use of focus groups. The methodology chosen will depend on DOC's overall aims for the research.

5.2.3 Incorporation of questions into pre-existing surveys

The opportunity exists for DOC to include a set of questions on the marine environment in a pre-existing survey of public environmental perceptions. This may be the most cost-effective approach, depending on the number of questions DOC would like to ask the public. However, a stand-alone survey devoted to marine issues alone is likely to have a better response rate. This strategy was used by the Scottish survey, by Canada's Department of Fisheries and Oceans, and by Hughey et al. (2002) in their study of New Zealanders' perceptions of the environment. Hughey et al. have indicated the possibility of including DOC questions in their next biennial survey of perceptions of the state of marine fishers and their management, which will be conducted in 2004. Another option would be to include questions in the annual public survey that is conducted on DOC's general performance by UMR Research Ltd.

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