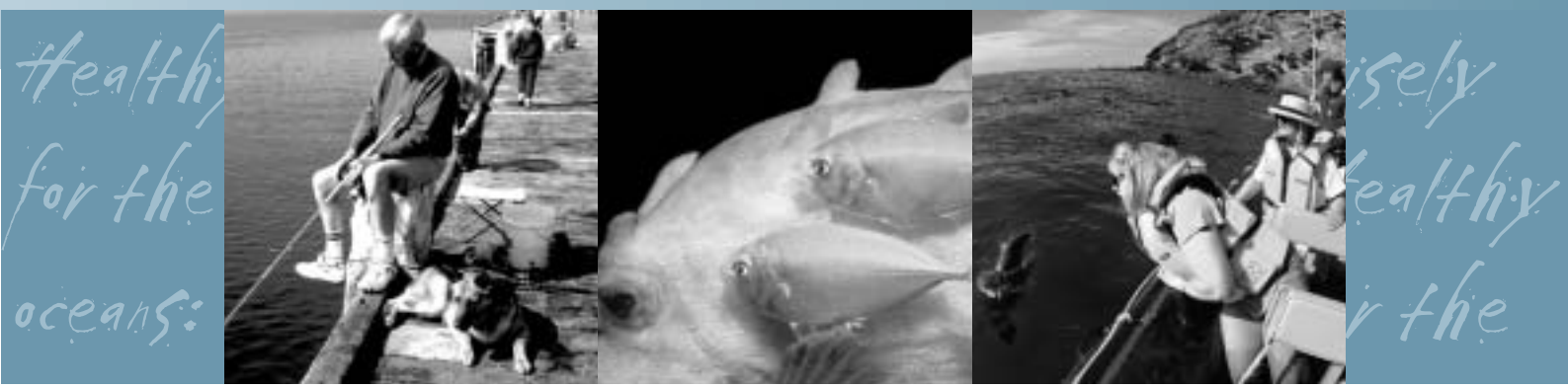
Assessment REPORT

Communities

connecting with the ocean



THE SOUTH-EAST REGIONAL MARINE PLAN

Title:
Communities – connecting with the ocean
The South-east Regional Marine Plan
Assessment Reports

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Contents

Executive Summary

This report seeks to identify the values and aspirations of the community living within 50 km of the coast of the South-east Marine Region, and of national and regional conservation groups.

The principles of *Australia's Oceans Policy* seek to bring together the social, economic and environmental aspects of decision making. Community values and aspirations will be identified as a means of informing the development of the South-east Regional Marine Plan.

The coastal community of the Region is home to approximately 1.4 million people. Not surprisingly, their socio-economic characteristics are diverse. Overall, the Region's annual population growth is about half the national average. Coastal communities to the west of a line drawn from Melbourne and Hobart, tend to be doing better than those to the east, as is reflected in unemployment, which tends to be higher, and lower average weekly household incomes than in the west of the Region.

Overall, the assessment shows that the community highly values environmental sustainability, biodiversity and the use of resources to secure future sustainable economic benefits. Community members express strong support for more policing of the resources of the Region, and improving knowledge of the Region and its resources through more funding for science. Participants also request more input into the decision-making processes and management, and an acknowledgment of local expertise by government.

Generally, the community has little knowledge of the South-east Marine Region and the current planning processes. However, a desire for more education on these topics was regularly expressed.

What the assessment is

Randomly selected individuals from the coastal community along with representatives of community and conservation groups, were consulted between May and November 2001. Commercial and Indigenous users of inshore and offshore waters were not consulted for this assessment. Commercial use is discussed in the report *Resources – using the oceans*; Indigenous people in the report *Sea Country – an Indigenous perspective*.

The information collected provides a snapshot of the community's values and aspirations for the deeper waters of the South-east Marine Region. The coastal community's levels of knowledge about the Region and broad demographic data on the community were also collected.

Assessment methods

A mix of social-research methods was chosen after reviewing the literature on similar assessments.

These were:

- a focus group to identify themes and refine questions
- a telephone survey to 1300 people in a stratified random sample of the coastal community
- a postal survey of marine-focused community-interest groups
- a series of community workshops
- a workshop with key national and regional conservation organisations
- a community-feedback information paper.

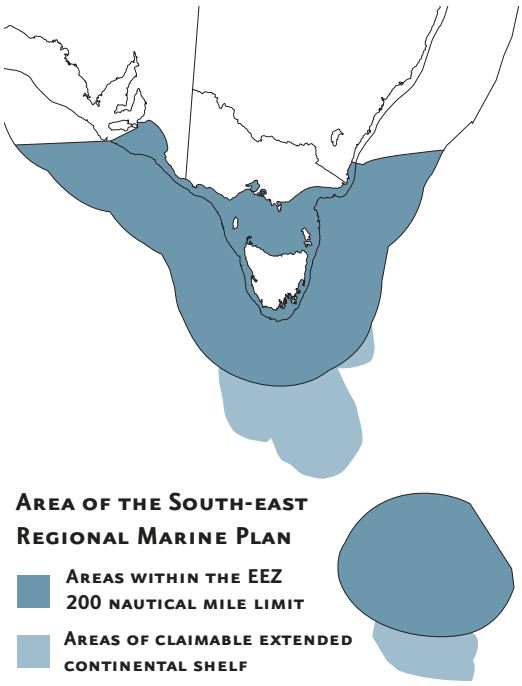
Preface

Australia's Oceans Policy and regional marine planning provides a framework for the people of Australia to explore, use, protect and enjoy our extensive marine resources. As its base, the Policy recognises the need to protect the biological diversity of the marine environment while at the same time promoting and encouraging sustainable, secure marine industries.

Regional marine planning is a way of achieving the *Oceans Policy* vision. It uses large marine ecosystems as one of the starting points for the planning process by creating planning boundaries that are based on ecosystem characteristics – a major step towards ecosystem-based management.

This assessment report is one of six that are an initial step in better managing Australia's oceans. They provide a knowledge base for developing the South-east Regional Marine Plan – the first regional marine plan being implemented under *Australia's Oceans Policy*.

The South-east Marine Region brings together three of the large marine ecosystems: the South-eastern, the South Tasman Rise and Macquarie.



The South-east Marine Region covers over 2 million square kilometres of water off Victoria, Tasmania (including Macquarie Island), southern New South Wales and eastern South Australia.

The Region includes both inshore (State) waters (from the shore to three nautical miles outside the territorial baseline) and Commonwealth waters (from three to 200 nautical miles outside the territorial baseline), as well as the claimable continental shelf beyond the Exclusive Economic Zone.

To build a solid understanding of the complexities of the Region, information on ecosystems and human activities were gathered for both State and Commonwealth waters across six areas:

- biological and physical characteristics – identifying the key ecological characteristics in the Region, their linkages and interactions
- uses within the South-east Marine Region – describing our knowledge of the nature and dimension of human uses and their relationship with each other
- impacts on the ecosystem – providing an objective analysis of how activities can affect the Region's natural system
- community and cultural values – ensuring community wishes and aspirations are reflected in the planning process
- Indigenous uses and values – gaining an understanding of and support for Indigenous interests in the Region
- management and institutional arrangements – analysing current legislative and institutional frameworks to determine the best mechanism for implementing regional marine plans.

Specific scientific projects have filled gaps in our knowledge wherever possible and have clarified some areas in our understanding of the deep ocean's ecosystems. Specialist working groups of stakeholders and experts in their fields have provided invaluable direction and input to the planning process. As well, stakeholder workshops, community surveys and consultations have all helped build our knowledge base and have provided a voice for the people of the South-east Marine Region. Without this consultation, the picture would not be complete.

Moving forward

The six assessment reports are about increasing our understanding and appreciation of the Region's wealth and ecosystem diversity, and starting to define what we want for the Region. From this shared understanding, we will move forward to define a plan that maintains ocean health and supports competitive yet sustainable industries, as well as enhancing the enjoyment and sense of stewardship the people of Australia feel for the oceans.

While the Region includes State coastal waters, the South-east Regional Marine Plan will focus on the Commonwealth ocean waters.

The shared values and understanding of the Region gathered during the assessment stage give us a foundation for building a plan for the Region. The National Oceans Office has produced an Assessment Summary which brings together the key findings of the six assessment reports.

Supporting this Summary is a Discussion Paper which provides topic areas to help communities, industry and government begin discussion on the planning objectives, issues and concerns for the South-east Regional Marine Plan. The Discussion Paper also details the next stage of the planning process for the South-east Regional Marine Plan.

Your input into the regional marine planning process is important. To register your interest or for more information about the South-east Regional Marine Plan, *Australia's Oceans Policy* and the National Oceans Office, visit www.oceans.gov.au, or phone (03) 6221 5000.

Introduction

This report presents the results of an assessment of the community and cultural values for the South-east Marine Region. The assessment was undertaken between May and November 2001.

Australia's Oceans Policy is explicit about the need to understand community values as they relate to the South-east Marine Region:

> *"The economic, environmental, social and cultural values of ocean resources should be assessed, as should the impacts of proposed uses on those values, before resource allocation decisions are made"* (Vol. 1, p. 37).

We need to understand community values to:

- inform the planning process
- gauge the likely effect of proposed management changes on these values – a requirement of *Australia's Oceans Policy* (Vol. 1, p. 37).

This assessment aims to develop a better understanding of the community's knowledge and aspirations for the Region, and also a better understanding of the values the community places on the Region's marine environment, marine cultural heritage, and the ways it is currently used. In doing so, the assessment paints a picture of the Region and gives an indication of its identity.

It also provides a basis for including the social dimension of ecologically sustainable development (ESD) – a corner-stone of *Australia's Oceans Policy* – into decision making. Comparatively, environmental and economic data are more readily available than social data and as such are more likely to be taken into account in management decisions. Community wishes and aspirations provide a context for decision-making to achieve ESD.

Community views have important implications for regional marine planning and can affect acceptance of the process and its outcomes. Community attitudes are also likely to affect levels of participation in planning and acceptance of plans.

The activities undertaken for this assessment have also helped to inform the community of the regional marine planning process and engage them in the process. As little was known about the communities' knowledge of the Region, the results will help in developing educational material to increase general awareness and knowledge of issues in the Region.

This report does not speculate on the potential social impacts of any changes in the management arrangements that might be proposed in a regional marine plan for the South-east.

Section 1

Assessing Community and Cultural Values for the South-east Marine Region

The community that was the subject of this assessment consisted of individuals in the coastal area (within 50 kilometres of the coast), regional and national conservation groups and marine-focused community groups. To identify the community's values and aspirations for the deeper waters of the South-east Marine Region, we used a mix of methods.

An overview of social-research methods and examples was provided by a literature review (see Appendix A for a description of common social-research methods and the reasons for selecting the ones used in this assessment). The literature review also provides examples of current and relevant social-research on coastal and marine issues in Chapter 3.

As a result of the literature review, a combination of social-research methods – a telephone survey, a postal survey, a series of workshops and invited comments on an information paper – were used.

Consultants Colmar Brunton Social Research undertook the telephone survey of the coastal community in the Region. The questions for the survey were developed after three focus groups in Geelong, Portland and St Helens, which helped identify the range of issues and values in the community, and appropriate language to use. The South-east Regional Marine Plan Steering Committee and Commonwealth agencies helped refine the questions. A pilot test of 30 interviews was undertaken.

The objectives of the survey were to understand, in relation to the deeper waters of the Region:

- the extent of community knowledge of the Region and the management of its deeper waters
- the values the community places on the Region
- the aspirations the community has for the Region.

The telephone survey interviewed over 1300 people randomly sampled from the coastal community in the Region. The survey was conducted over three weeks in July 2001, with an average interview time of approximately 14 minutes.

The telephone survey was followed by a workshop to identify the agreed values and aspirations the conservation sector has for the South-east Marine Region. Key regional and national conservation organisations such as Greenpeace, the World Wildlife Fund and the Victorian National Parks Association sent representatives. The workshop was held in Melbourne in September 2001. The results are summarised in Appendix C.

Next, a postal survey (13 questions) based on the telephone survey was developed. It was sent to over 250 marine-focused community interest groups between August and October 2001. They represented a range of interest areas including recreational fishing, diving, surfing, conservation and marine education (but not the commercial sector).

The next stage was to hold workshops throughout the communities bordering the Region. They targeted the same groups involved in the postal survey – marine-focused community interest groups – of which over 250 groups were invited. The workshops, which ran throughout September 2001, were held at 19 different places in the South-east. The workshops were designed to give members of these groups the chance to further express their values and aspirations for the Region. In addition, they provided an opportunity for the National Oceans Office to meet the groups and discuss the South-east Regional Marine Planning process. The workshops also identified additional groups who had not been contacted; these groups were sent postal surveys.

The final part of this assessment was a 'ground-truthing' exercise. The National Oceans Office produced an information paper, drawing on the data gathered during the workshops and postal survey, outlining the key 'themes' identified by the community groups. The paper was sent out to the groups who had participated in the postal survey or the workshops (or both). They were asked to give feedback on whether the paper accurately included their values, aspirations and issues for the South-east. The feedback on the information paper will inform the next stages of the planning process.

Section 2

The South-east Marine Region

(1) *A Picture of the South-east community*

This section provides information about the Region's coastal communities from the tip of the Fleurieu Peninsula in South Australia, south around Victoria and Tasmania, and up the coast to Bermagui in New South Wales. The information focuses on the people who live and work in the coastal margin of the Region, and was identified from the Statistical Local Areas (SLAs) immediately adjacent to the coast. Both the information and maps presented in this section are drawn from the Bureau of Rural Sciences report entitled *Marine Matters – Atlas of marine activities and coastal communities in Australia's South East Region (2001)*.

A Statistical Local Area (SLA) consists of Census districts and is based on local government areas, of which there are 59 in the coastal margin of the South-east Marine Region. SLAs cover the whole of Australia without gaps or overlaps.

With a population of 1.4 million, the coastal margin of the Region is socially and economically diverse. Populations range from small, isolated communities such as Port Welshpool in Victoria (population of 229) to those Melbourne SLAs within 50 km of the coastline (population between 50 000 and 90 000).

The annual population growth for the Region was below the national average between 1991 and 1996: between 0.5% and 0.7% compared to 1.2% nationally. However there was significant growth in St Helens (10%) and Strahan, Lakes Entrance, Apollo Bay and Robe (around 5%). Areas where the population declined include Penguin and Triabunna in Tasmania, Port Welshpool and Warrnambool in Victoria, and Goolwa in South Australia (see Map 2).

Unemployment rates also varied across the Region. Nationally, unemployment dropped from 9.2% in 1996 to 7.3% in 1999. While the Region reflected this trend, most towns and SLAs to the east of a line drawn between Melbourne and Hobart had a smaller drop in unemployment than towns and SLAs to the west of the line (see Map 2).

The average annual Australian household income for 1996-1997 was $31, 374. For non-metropolitan areas it was $28, 539. The average household incomes for the coastal margins of eastern Tasmania, eastern Victoria and most of south-eastern South Australia and five of the port towns on the mainland were lower than the national average for non-metropolitan Australia. However, incomes higher than average were reported in the coastal areas of Melbourne, Geelong and Hobart (see Map 3).

Education levels vary across the Region (see Map 4). The percentage (23.4%) of people in the Region in 1996 who left school at age 16 was higher than the national average (19.3%). The South Australian SLAs of Robe and Beachport reported 32% of school leavers at age 16. Overall Tasmania had a higher proportion of such residents (25-32% and in some areas greater than 33%), while Victoria had the smallest proportion (15-21%).

The populations with the highest percentages of tertiary educated people in 1996 were around Melbourne, and French Island in Victoria (greater than 30% of the population). The populations with the next highest percentages were west of Port Phillip Bay and south of Hobart (21-29%). In eight of the 17 port towns in the Region, 15% of their populations were tertiary educated. The areas with the lowest percentages (less than 7%) were Bridgewater, Gagebrook, New Norfolk, George Town and Hastings in Tasmania, and the SLA north east of Western Port Bay in Victoria (see Map 5).

To compare the distribution of social and economic factors, the Australian Bureau of Statistics has developed an index of relative disadvantage from 1996 Census data – the Socio-economic Index for Areas, or SEIFA Index. The factors that are used in the Index are: high proportions of low-income families, unemployed people, people without educational qualifications, households renting public housing, and people in low-skilled occupations. The Index can be used as a measure to determine the level of socio-economic wellbeing in an area. The standard value for Australia is 1000 points, with the scale up to 100 points above or below the standard.

Overall, the Region falls below the Australian standard value in 1996 (see Map 6). Many coastal margins including all of eastern South Australia, eastern Victoria and southern New South Wales were 50 to 100 points below. The most disadvantaged areas in the Region were eastern Tasmania and French Island in Victoria (100+ points below standard). French Island presents an apparent contradiction: it had the highest rate of tertiary-educated people. However, its population is small (less than 5000), probably with a large number of retirees who may be highly educated but no longer working.

The areas in the Region that were 50 points above the standard were: western Victoria; around Port Phillip Bay; Wilsons Promontory; west of the Tamar River; and north and south of Hobart in Tasmania. Northern Port Phillip Bay in Victoria had the highest score: 100 points above the standard.

There are strong links between the coastal communities in the Region and how the surrounding marine environment is used. Commercial fishing, for example, plays an important role in many communities throughout the Region, which supports over 30 commercial fisheries (see Map 7).

The economic value of the commercial fisheries to the Region is significant. In 1999, the estimated total value was $321 million of which $253 million was from State fisheries and $68 million from Commonwealth fisheries (Larcombe et al. 2001). The coastal (State) fisheries tend to be high-value, low-tonnage while the shelf-edge Commonwealth fisheries tend to be high-volume, low-value. The report *Resources – using the ocean* and the *Marine Matters – Atlas of marine activities and coastal communities in Australia's South East Region* (2001) have details on the Region's fisheries.

Marine and coastal tourism is also a source of income for the Region. The activities include SCUBA diving, whale watching, charter-boat operations, recreational fishing, sailing and cruising on ships. There are also a number of marine-focused festivals in the Region including the world-famous Sydney to Hobart yacht race. In Tasmania alone the value of marine-based tourism is estimated at $277 million per year with 6000 people employed.

The deposits of oil and gas in the South-east Marine Region are estimated to be worth $3 billion and $490 million respectively to the Australian economy and employ some 3000 people. Since 1965, 19 offshore platforms have been built in the Region. There is a major gas processing plant at Longford in Victoria. The report *Resources – using the ocean*, discusses the fisheries, tourism and oil and gas industries further.

The Regions socio-economic characteristics vary widely. Parts of the Region, particularly in the east, have high unemployment, low population growth and an aging population. Generally, communities with these characteristics tend to be more vulnerable to significant change. Other parts of the Region have the opposite characteristics – the result is a highly diverse population.

(2) Community values and aspirations survey

The National Oceans Office commissioned consultants Colmar Brunton Social Research to conduct a telephone survey of communities living on the coast of the South-east Marine Region. The survey sought to gain information about the community's attitudes, perceptions and values for the Region.

The survey questions were developed by Colmar Brunton Social Research in conjunction with the National Oceans Office and with input from Commonwealth agencies and the South-east Regional Marine Plan Steering Committee. Focus groups were used to select the questions, and a pilot telephone survey refined them.

Community Sample Profile

A computer-assisted telephone interviewing approach was used to administer the pilot test and the survey. In the pilot test, 30 people were interviewed. As a result, some minor changes were made to the survey. The Community Values and Aspirations survey was conducted between 6 July and 29 July 2001. The average length of interviews was 14 minutes.

Communities within about 50 kilometres from the coast were surveyed. A random sample of 1306 people 18 years of age or older living within one Statistical Local Area (SLA) from the coast was drawn from the telephone directory.

Of those surveyed 43% were male and 57% female. There was a reasonable spread of age groups in the sample, with the age group of 45-54 the largest (24% of respondents). The following table gives the breakdown of age groups and the percentage of respondents.

Employed respondents constituted 62%, with 37% unemployed of which 6% were looking for work. Respondents with a non-English speaking background constituted 8%.

Table 1:
Community sample profile against age of respondents.

Age Range	Total sample N=1306 %
18 - 24	9
25 - 34	16
35 - 44	22
45 - 54	24
55 - 64	14
65+	14
Refused	1
Total	**100**

Attitude Surveys

Social-research uses attitude questions extensively to measure the views of stakeholders. Respondents could be asked whether or not they hold a particular belief, but attitudes and opinions tend to be expressed on a continuous scale rather than at the extremes. The standard way to measure the strength of an attitude is to ask the respondent to note on a scale how much they agree or disagree with a particular statement (Moser & Kalton, 1981).

The 10-point scale adopted in this research is commonly used because:

- people are very familiar with manipulating numbers out of 10 (eg currency, counting to ten, giving something good a 'ten out of ten')
- a scale with more data points to choose from (compared, say, to a 5-point scale) allows more discrimination between individual responses and gives more richness to the data
- detailed analysis techniques require scales with more data points.

To allow for the complexity of opinions, a range of attitude statements were used. The statements were contentiously worded to avoid the common 'error of central tendency', whereby respondents tend to avoid the 'ends' of the scale (Moser & Kalton, 1981).

A statement clearly pointing in a particular direction is easier to agree or disagree with than a 'neutral' statement, which is unlikely to stimulate much

response at all. Statements that are strongly biased one way or the other help to differentiate between respondents' attitudes. This technique is frequently used in research where it is important to obtain a clear understanding of attitudes.

Focus Groups

Qualitative research was undertaken to:

- gain an awareness of the variety of attitudes, opinions, values and aspirations likely to be identified through the survey
- ensure that the language used in the survey would be understood by the community and the issues and values likely to be identified
- develop the most effective statements or approach to use in the survey to measure values.

Focus group discussions were held in Portland in south-west Victoria on 14 June 2001, Geelong in Victoria on 15 June 2001 and St Helens in north-east Tasmania on 16 June 2001.

It was found that participants did not formally separate the values they hold (what is most important) from the aspirations they have (what they want) for the Region. Values were expressed through discussions on what thing or activities were, or were not, wanted in the Region. As a result, the subsequent survey questions reflected the community's preference for discussing the Region in terms of events or changes rather than in terms of the formal concepts that appear in the literature on values measurement.

Key Findings

The telephone survey findings reflect the perceptions of the respondents at the time of the survey. The findings highlight gaps in the community's knowledge and a desire for greater knowledge and involvement in planning for the South-east Marine Region.

Visits to the coast

At least once a fortnight, 53% of respondents visited the coast, 19% visited once or twice a month, 12% visited once or twice each six months, 13% once or twice a year, and 3% had never visited the coast near them.

Fifty-eight per cent said they had travelled out to sea (ie 'out of sight of land'). Males (66%) were slightly more likely to have done this than females (53%).

Knowledge of current management arrangements

Respondents who were aware of the Commonwealth's role in managing the Region constituted 29%, the majority either did not know (44%) or thought another body managed the Region. Those who had been 'out of sight of land' were more aware of the Commonwealth's role than those who had not.

Self-reported levels of knowledge

Respondents were asked to estimate how much they knew about the South-east Marine Region.

Of the 1306 people surveyed:

- 2% believed they 'knew a lot' about the Region
- 15% believed they 'knew a moderate amount'
- 45% believed they 'knew a little'
- 37% believed they 'knew basically nothing'.

The knowledge level was higher among those who had been out to the deeper ocean, with 21% of these respondents knowing 'a moderate amount' and 3% knowing 'a lot'.

Knowledge of uses in the South-east Marine Region

The people surveyed were asked to nominate uses of the Region of which they were aware (spontaneous awareness). After this, a list of uses was read out and the respondents were asked whether, 'now that we have mentioned it' they were aware of these uses (prompted awareness).

The uses with the highest spontaneous awareness levels were commercial fishing (86%) and recreational fishing (78%), followed by such recreational uses as SCUBA diving, whale watching and yachting (53%). After this came spontaneous awareness of oil/petroleum exploration and production (18%); scientific research (15%); Australian shipping (13%); shipping from other countries (11%) and conservation (4%).

When prompted, 69% of respondents were aware of conservation uses, and 98% of commercial fishing. More than 70% of respondents were aware of oil/petroleum exploration and scientific research, and 78% were aware of shipping from other countries. Over 80% were aware of Australian shipping, and over 90% were aware of recreational fishing and other recreational uses.

Knowledge of Macquarie Island

Of the people surveyed 81% said they recognised the name 'Macquarie Island'. More men (86%) than women (77%) had heard of the island.

Detailed knowledge of Macquarie Island was not high: 40% of the 1306 respondents could not demonstrate any further knowledge beyond recognition of its name. However, 26% cent mentioned the scientific research station on the island, and a further 18% said it was near Antarctica.

Government spending

On the question of whether the Federal Government was spending 'enough money' on looking after the deeper ocean in the South-east Marine Region 5% said it was, 35% were unsure about this and 59% said that 'not enough money' was being spent.

Comparative value spending

Each respondent was asked to imagine that they had $100 in 'tax money' to spend on the South-east Marine Region and had eight areas in which they could spend this money:

- caring for the marine environment
- policing the Region to protect the resources for Australia
- scientific research for environmental purposes
- education for Australians
- scientific research for economic purposes
- developing fishing and recreation
- community consultation
- exploration.

All the money had to be spent, and the respondent was asked to choose how it was to be divided up. The data provided a relative 'ranking' or preference for how the 'tax dollars' should be spent, that is, the value the community placed on each of the eight areas to which the $100 could be allocated. The answers to the question, however, give only a broad indication of the respondents' values.

Three of the eight possibilities for spending the $100 accounted for over half of the 'spend'. These were:

- caring for the marine environment ($21 expenditure on average)
- scientific research for environmental purposes ($17 expenditure on average)
- policing the Region to protect resources ($17 expenditure on average).

The area given the least funding by respondents was exploration with $6 allocated to it on average.

Respondents could choose to spend nothing on an area. The following gives the percentage of people who did so:

- 43% exploration
- 34% community consultation
- 33% developing fishing and recreation
- 31% scientific research for economic purposes
- 23% education for Australians
- 18% policing the oceans
- 18% scientific research for environmental purposes
- 14% caring for the marine environment.

Values and beliefs

Respondents were asked to indicate their level of agreement with 29 statements designed to measure their attitudes, values, beliefs and aspirations regarding the Region. Respondents gave a score for each statement between 1 (strongly agree) and 10 (strongly disagree). The proportions agreeing and disagreeing with each statement are summarised in Appendix D.

Some of the statements and findings are given below. The scoring is simplified so 'agree' is 1-3; 'neutral' is 4-6; and 'disagree' is 7-10.

- 'management must be based on looking after the marine environment'; 3% disagreed with this statement, 13% were neutral and 84% of respondents agreed
- 'there needs to be one central planning and management strategy for all users in the Region'; 10% of respondents disagreed, 20% were neutral and 70% agreed
- 'it is essential we use resources to ensure economic growth for the future'; 18% disagreed, 28% of respondents were neutral and 53% agreed
- 'there are already far too many controls on commercial or industrial use of the Region'; 48% disagreed, 34% were neutral and 18% agreed.

Further examination of the data led to a more detailed profile of respondents. One method of doing this was to 'segment' respondents into 'subgroups' based on their self-reported levels of knowledge of the South-east Marine Region.

The subgroups were defined as:

- 37% who knew 'basically nothing at all' about the Region
- 45% who knew 'a little bit'
- 15% who knew 'a moderate amount'
- 2% who knew 'a lot'.

There are no statistically significant age-group differences between the four knowledge groups.

Respondents 'who knew basically nothing' had, overall, less education than the other respondents. In contrast respondents who 'knew a lot' had higher educational levels.

Respondents who reported 'knowing a lot' or 'knowing a moderate amount' were more likely to:

- visit the coast
- have been 'out of sight of land'
- be more interested in information
- think Federal Government spending is not enough
- be aware of conservation uses for the region
- be aware of Macquarie Island.

Those who reported 'knowing a lot' also placed a higher importance on community involvement in planning.

Respondents who said they 'knew a moderate amount' were generally more interested than other subgroups in caring for the marine environment, spending more on reefs and banning foreign fishing.

Respondents who reported they 'knew basically nothing' had less desire for additional expenditure on the Region and were less likely to care as much about the deeper ocean as the land. They were also less interested in community involvement in planning and less likely to think the overall management of the Region was poor.

3. Community groups postal survey

The National Oceans Office developed a survey targeted at marine -focused community interest groups in the Region. They were drawn from all interest areas, except commercial users, and included a diverse range of groups including SCUBA diving clubs, recreational fishing bodies, heritage-focused groups, surfing groups and local Coastcare groups. The survey was posted out to over 250 groups.

The groups were identified with the assistance of the Marine and Coastal Community Network, State governments and Coastcare. Each group was asked to complete the survey on behalf of its members (groups that returned two copies with different answers reflecting a lack of consensus were treated as independent groups).

The survey was designed to produce results that were comparable to those from the telephone survey. The 13 questions aimed to assess how much community groups knew about the Region, including resource use and the regional marine planning process. Some questions focused on values and aspirations for the Region, and the groups were invited to highlight issues of concern to them and to say what they would like to see in a management plan for the Region.

Findings

The 53 responses represented a 20% return rate. For ease of analysis, the responding groups were divided into three broad categories: education groups (17%), user groups (38%) and conservation-focused groups (59%).

Group information

Groups were asked to state their member numbers. Most of the community groups (28) that responded to the survey had up to 40 members, while 8 groups had more than 200 (see Figure 2).

The main funding source for 58% of groups was membership fees. The second main source was the federally-funded Natural Heritage Trust (39%). Only 13% of respondents reported fund raising as their main source. Figure 3 shows the main sources of funding for all respondents.

Figure 1:
Type of community groups who responded to the postal survey.

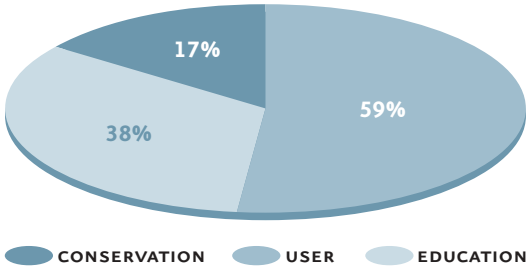


Figure 2: *Membership numbers of groups responding to postal survey.*

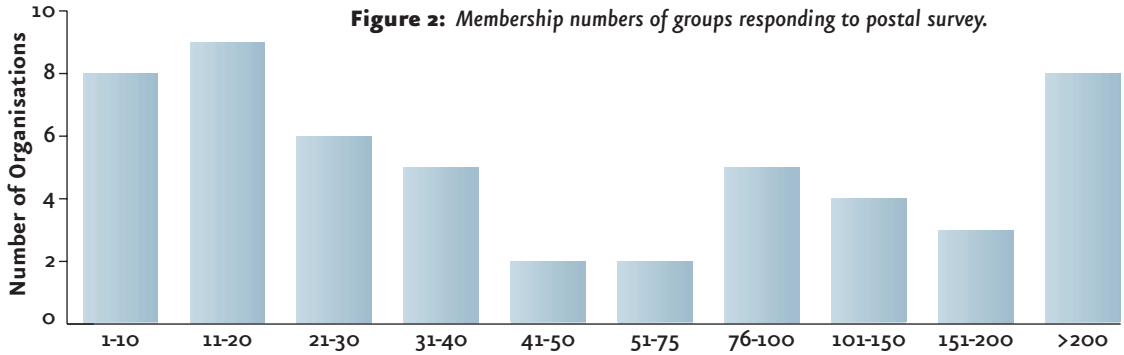
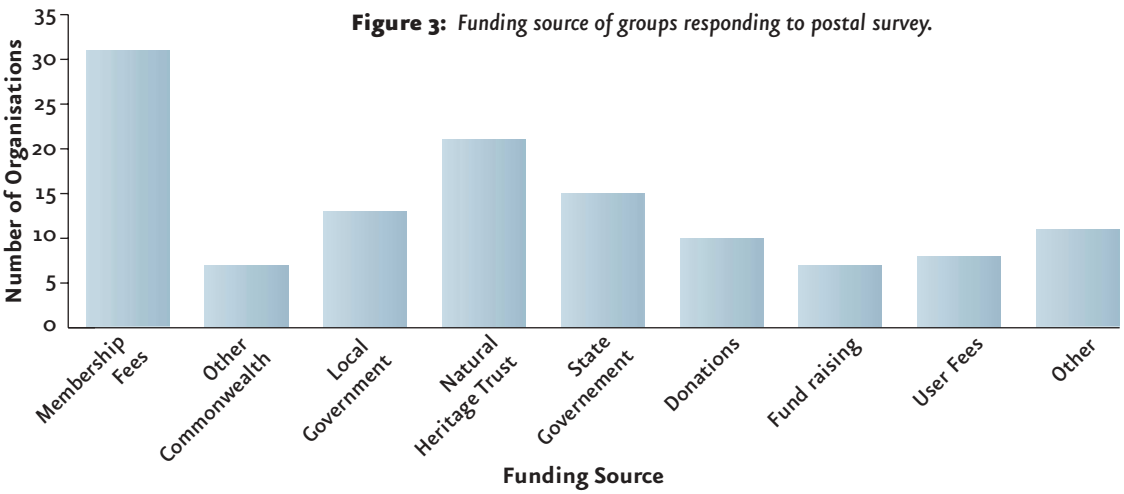


Figure 3: *Funding source of groups responding to postal survey.*



Self-reported knowledge of respondents

Respondents were asked to report on their level of knowledge and understanding of the following terms:

- ecosystem
- biodiversity
- habitat
- ecosystem-based management
- multiple-use management
- precautionary principle
- *Australia's Oceans Policy*
- National Oceans Office
- South-east Marine Region
- Indigenous rights and values.

Groups were asked to rate their level of knowledge and understanding on a sliding scale of 1 to 5, where 1 is a low level of self-reported knowledge.

Overall, groups categorised as education-focused reported the highest level of knowledge of the terms, followed by user groups and then conservation-focused groups.

Respondents also reported a relatively low level of knowledge of both Indigenous rights and values. The reported average was two.

Respondents were also asked whether they had heard of Macquarie Island. One hundred per cent, that is, all 53 respondents, said yes.

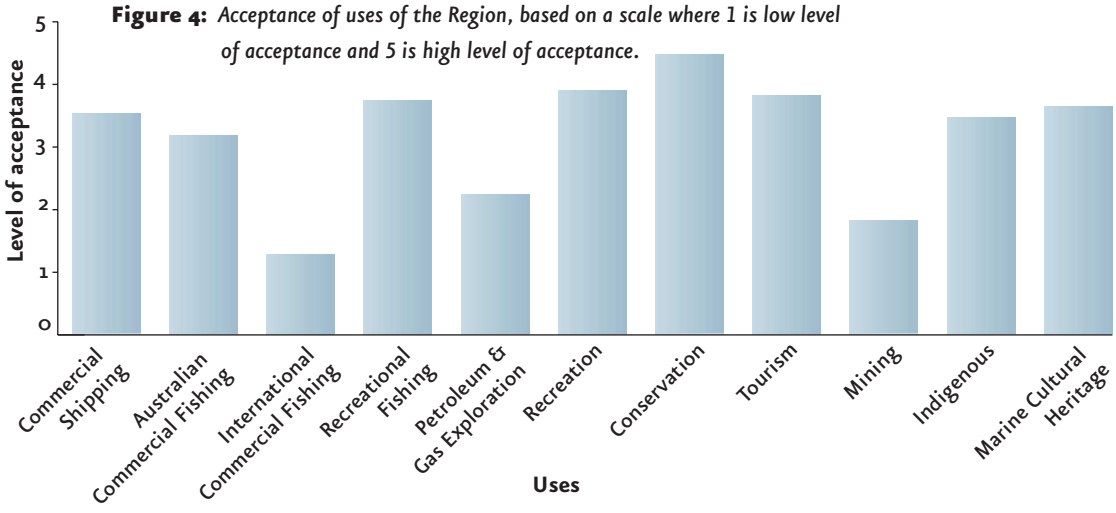
Values of groups

Respondents were questioned on their level of acceptance of the following uses in the Region on a scale of 1 (low level of acceptance) to 5 (high level of acceptance):

- Australian commercial fishing
- international commercial fishing
- recreational fishing
- conservation
- Indigenous use
- commercial shipping
- recreation
- tourism
- marine cultural heritage
- mining
- petroleum/gas exploration.

Figure 4 shows respondents' levels of acceptance of uses in the Region. The highest level of acceptance reported by groups was conservation, with international commercial fishing having the lowest level of acceptance.

Figure 4: *Acceptance of uses of the Region, based on a scale where 1 is low level of acceptance and 5 is high level of acceptance.*



Values and beliefs

Respondents were asked to indicate their level of agreement with 28 statements designed to measure their attitudes, values, beliefs and aspirations regarding the Region. Respondents gave a score for each statement between 1 (strongly agree) and 10 (strongly disagree). The proportions agreeing and disagreeing with each statement are summarised in Appendix E.

Some examples of the statements and findings were:

- 'it is essential we use resources to ensure economic growth for the future'; 36% disagreed, 30% of respondents were neutral and 34% agreed
- 'there are already far too many controls on commercial or industrial use of the Region'; 74% disagreed, 17% were neutral and 9% of respondents agreed
- 'management must be based on looking after the marine environment'; 6% disagreed, 6% were neutral and 87% of respondents agreed
- 'there needs to be one central planning and management strategy for all users in the Region'; 6% of respondents disagreed, 15% were neutral and 79% agreed.

Table 2:
Respondents' vision for the Region.

Vision	Frequency
Better protection of the marine environment through use of management tools including Marine Protected Areas*	6
Resource sustainability	5
Environmental sustainability	5
More scientific research to establish what is actually there	4
Better management, particularly in relation to control of use	3
Biodiversity	3
Multiple use of the Region	2
Better management of commercial fisheries	2
Access for recreational users	1

n=28

*At the time of the survey a State government process concerning the proposed declaration of Marine Protected Areas was under way.

Vision

Respondents were asked to outline their vision for the South-east Marine Region. Table 2 records the frequency of responses and the frequency with which they occurred.

How to achieve the vision

Respondents were also asked to rank statements of what needed to be done to achieve their vision. Table 3 summarises the responses.

Table 3:
Priority actions for respondents.

Things that need to be done	Frequency
Increased education leading to community stewardship	9
Better management, particularly in the area of enforcement and penalties	5
More research and more funding for research	5
Agreement across all levels of management on what needs to be done	3
Banning the foreign use of resources	2
Development of recreational and charter boat industries	2
Sustainability	2
Establishment/identification of ecological baseline data	2
A system of Marine Protected Areas	2
Ecosystem-based management	2
More and better consultation with the community	2
Encouragement of the tourism industry	1
Buy-back of commercial fishing licenses	1

n=38

Conservation organisations workshop

The National Oceans Office organised and ran a workshop in Melbourne on 6 September 2001 for key regional and national conservation organisations. The Office invited 30 representatives from these organisations to attend the workshop (Appendix B lists the attendees).

The aims of the workshop were to facilitate the involvement of conservation organisations in the assessment phase of the South-east Regional Marine Plan and to identify their agreed values and aspirations for the South-east Marine Region

Findings

The findings from the workshop aim to reflect fairly and accurately the information gathered from participants.

The main outcomes of the workshop were:

- an indication from participants of the scope of the issues they felt should be reflected in the development of the South-east Regional Marine Plan
- their aspirations and values for the South-east Marine Region
- the measures they believed were necessary to achieve their aspirations.

The exercise touched on core or philosophical values, identified themes under which the values and aspirations could be grouped, and ranked their relative importance.

The following list indicates the scope of issues the workshop participants raised:

- a range of social and cultural issues
- need to maintain biodiversity
- possibility/potential for extinction of species
- recognition of significant impacts and threats
- inadequate baseline data on which to base management
- management is based on jurisdictional and administrative boundaries rather than on ecosystem boundaries
- management needs to take account of vertical as well as horizontal integration in terms of the ecosystem, for example, Tasmanian Sea Mounts Marine Reserve
- need to acknowledge that there are different natural systems within the Region, for example, east and west Bass Strait
- need to acknowledge our uncertain understanding of the Region and its systems, and to reflect this in planning processes including the South-east Regional Marine Plan
- the potential for opportunities to be lost
- need for an acknowledgment of the pressures in the Region from large population centres and current use
- need to recognise and conserve the high levels of endemism in the Region
- need to acknowledge that the Region is politically complex
- need for recognition of cultural rights in the Region
- recreational interests and activities need to be valued and considered through management arrangements
- the potential for conflict within and between users
- piracy as an issue in the Region.

Workshop participants were each asked to list their 'values' for the South-east Marine Region. The whole workshop then 'voted' on them to indicate their relative priority. The 10 top-ranked values were:

1. a comprehensive, adequate and representative system of large, fully protected marine national parks
2. biodiversity conservation as the non-negotiable cornerstone in the management of uses in the Region
3. an unpolluted marine environment
4. a minimum of 20% 'no-take' areas with adequate buffers

5. an informed and engaged community that actively cares for the marine environment
6. reversal of the burden of proof for uses: use-proponents must prove that their use will not be significantly detrimental to the environment
7. improved knowledge of the spatial distribution of habitats and communities as the basis for area-based planning
8. a move away from industry self-regulation
9. enforceable plans for all stakeholders
10. regional marine planning must direct industry policy and management.

Given the significant overlap of values advocated in the workshop, participants were asked to condense the values to theme areas. These were the main themes participants drew from the total list of values:

- a comprehensive, adequate and representative system of large (no-take) fully protected marine parks/reserves
- a pollution-free marine environment
- biodiversity conservation as a non-negotiable cornerstone of planning and management
- reversal of onus of proof for proposed uses
- regional marine planning must direct industry policy and planning
- regulated standards for environmental quality and industry activity
- informed and engaged community
- ecosystem-based management that takes into account the land/water interface
- comprehensive ecosystem monitoring and assessment.

How to achieve the vision

Workshop participants then provided their views on how the values they expressed could be incorporated for marine regions. Some views have been rephrased here to improve clarity:

reversal of onus of proof

- require considerably more information before approving a new resource use (eg a new fishery)
- bring in legislation to put the reversal loop into effect for all resource planning and approvals

regulation/setting standards

- establish a benchmarking program to set standards (eg natural productivity of area)
- appoint industry-independent body to set standards
- incorporate targets, incentives, rewards, penalties, biodiversity goals

informed, engaged communities

- develop, implement and resource a national marine education strategy through consultation with existing marine education organisations and community groups
- develop avenues for participation in decision-making
- request government to market to the community the value (economic and environmental) of the Region
- need to help communities to understand threats

comprehensive, adequate and representative (CAR) system of Marine Protected Areas

- National Oceans Office to work with Marine and Water Division (Environment Australia) to accelerate proclamation of Marine Protected Areas in the South-east Marine Region
- identify critical habitats
- set time lines for achieving objectives
- commit to Marine Protected Areas being at least 20% no-take areas
- make it core business of the National Oceans Office to develop a process to achieve no-take areas

- introduce legislation to enable regional marine planning
- National Oceans Office to direct research to better identify current status of environment and species
- Commonwealth Government to integrate planning of Marine Protected Areas within State waters
- collect clear baseline information to provide a basis for establishing Marine Protected Areas, eg Macquarie Island

biodiversity as cornerstone

- require significantly more information before a new resource use is approved (eg a new fishery)
- develop strategies to obtain legislative support for maintaining and enhancing biodiversity
- approve nothing unless it is consistent with the biodiversity strategy as in the South Australian terrestrial model
- review current activities and legislation to ensure they are consistent with biodiversity strategy
- treat the environment as an equal advocate in the assessment and negotiation processes

ecosystem-based management linked to catchments

- develop area-based management frameworks
- coordinate relevant State and Commonwealth agencies
- develop mechanisms for making precautionary decisions in the absence of adequate information
- undertake case studies based on ecosystems, not State/Commonwealth jurisdiction
- design working models
- require the South-east Regional Marine Plan to be a visionary document
- introduce enforcement, policing and disincentives
- National Oceans Office to audit pollution
- introduce legislative standards to reduce pollution
- ensure information that the National Oceans Office uses to inform decision making about pollution in the Region is transparent
- use Federal legislation to take action on land-based impacts (eg *Environment Protection and Biodiversity Conservation Act*).

4. Community group workshops

In September 2001, the National Oceans Office conducted a series of community workshops in the Region.

These workshops aimed to identify the values and aspirations of marine-focused community interest groups. Two key questions were asked of participants:

Question 1: What in the South-east Marine Region is important to your community group now? (value)

Question 2: When the management plan is developed for the South-east Marine Region, what would your group like to see in that plan? (aspiration)

Participants raised issues of concern and these were sorted into key themes. The themes do not cover every issue or value raised by participants, but provide an overview of the most frequent responses. As expected, there was some overlap in the responses to questions 1 and 2.

Findings

The following themes (in no particular order) were identified in response to question 1:

- biodiversity and maintenance of that biodiversity
- protection of marine life and particularly certain species (such as sponge gardens and cetaceans)
- introduced pests and the need for more controls to prevent their introduction, particularly in a shipping context
- ecological values
- clean and healthy seas (water quality)
- more community involvement and education
- protection of the marine habitat, including the sea bed
- need for more scientific research
- sustainability of resource use
- potential economic benefits need to be realised
- complexity of institutional arrangements (Local, State and Commonwealth governments)
- overseas fishers fishing in Australian waters
- ecosystem-based management
- bycatch.

The following themes (in no particular order) were identified in response to question 2 on what groups would like to see in the South-east Regional Marine Plan:

- need for on-going, comprehensive research, preferably federally funded has been met
- endangered species are protected
- resources and biodiversity are guaranteed for future generations
- more and better enforcement (and policing) mechanisms, particularly in relation to fishing and introduced marine pests have been introduced
- pollution will be reduced
- use will be ecologically sustainable
- management is ecosystem-based
- the Plan is regularly reviewed and monitored
- local knowledge and expertise are recognised and the community is a co-manager
- recognition that issues may not be Region-wide but local
- unique characteristics of the Region are recognised
- stewardship
- the Region to be managed on an ecosystem basis
- access and industries are community based
- better regulation, monitoring, compliance and policing of current resource use
- no overseas fisheries in Australian waters
- sustainable energy sources need to be investigated
- marine parks.

5. Marine Cultural Heritage

Australia's Oceans Policy acknowledges that our understanding of marine heritage values and their vulnerability is poor. These values must be identified and included in ocean-resource planning and management. The marine cultural heritage component of this assessment of the community's cultural and heritage values consisted primarily of desktop research, supplemented by discussions with Commonwealth and State managers and feedback from the telephone and postal surveys.

Marine cultural heritage is defined by the draft Convention on the Protection of Underwater Cultural Heritage as "all traces of human existence having a cultural, historical or archaeological character which have been partially or totally under water, periodically or continuously, for at least 100 years". This assessment focuses solely on non-Indigenous marine cultural heritage; Indigenous heritage is discussed in the report Sea Country – the Indigenous perspective. The management and legislative arrangements for marine cultural heritage in Australia are discussed in the reports *Resources – using the ocean* and *Ocean Management – the legal framework*.

Marine cultural heritage can include shipwrecks, submerged remains of jetties, port facilities and bottle deposits. However, when discussing marine cultural heritage the first thing people think of is shipwrecks. Shipwrecks are, therefore, the focus of this section.

The non-Indigenous community's interaction with the Region evolved from an era of discovery to penal settlements and over-exploitation of biological resources (particularly whales and seals), through to an emphasis on fishing, petroleum, recreation and the transport of goods and people.

The extensive use of the Region over the last 200 years for exploration, transport, whaling and sealing has resulted in a diverse collection of shipwrecks – over 1000 them. These shipwrecks include submarines, ferries and wooden sailing vessels.

All shipwrecks over 75 years of age are protected. The greatest peace time maritime disaster in Australia occurred in the Region when the *Cataraqui* was wrecked off the coast of King Island in 1845, with the loss of over 400 lives.

Map 8 shows the location of the main marine cultural heritage sites in the South-east Marine Region.

Findings

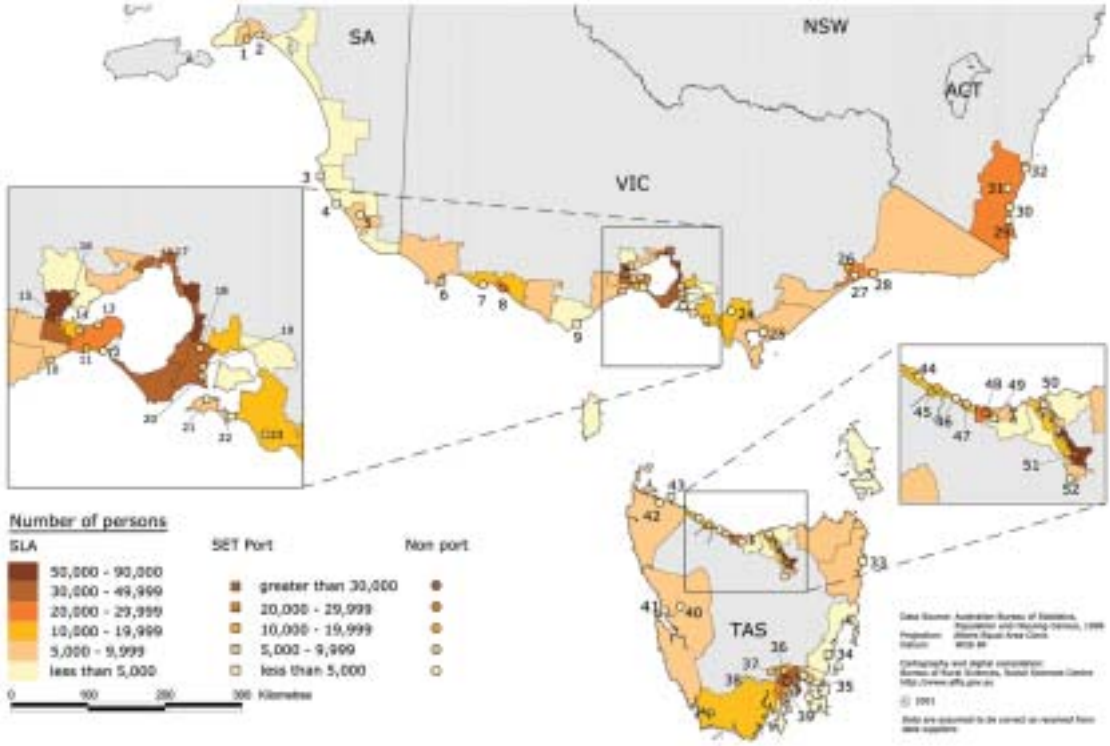
Desktop research indicated that the community places a high value on historic shipwrecks and that there is a demand for better information and education as interest in wrecks grows through, for example, the increasing popularity of wreck diving.

During the Community Values and Aspirations telephone survey, respondents were asked whether it was important to them to preserve shipwrecks in the Region. Of the respondents, 56% said it was important, 25% were neutral, and 20% said it was not important to them.

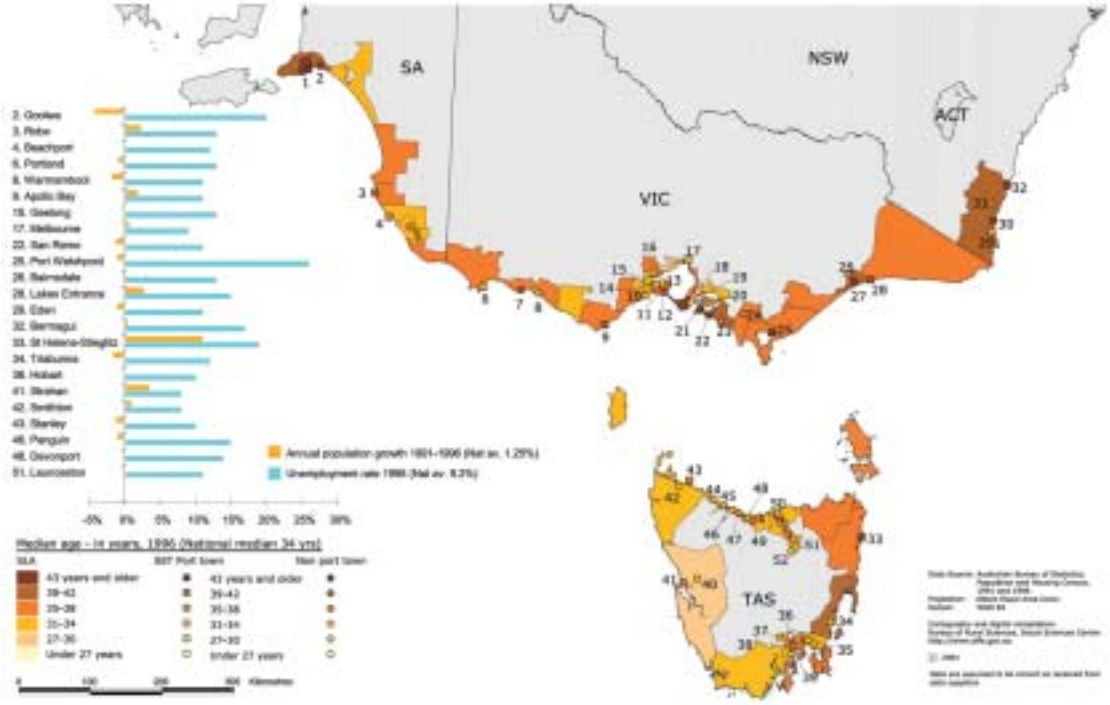
In the postal survey of community interest groups, participants were asked whether 'it was important to preserve shipwrecks in the area so we can enjoy the opportunity to explore them'. Of the groups 64% agreed, 28% were neutral and 9% disagreed.

The community interest groups' workshops discussed marine cultural heritage in the Region, specifically its importance and value to the community. The participants commented that they thought predominantly of shipwrecks when the phrase 'marine cultural heritage' was mentioned. They said that the protection of shipwrecks was important to them for historical reasons, but they also believed shipwrecks had strong tourism potential.

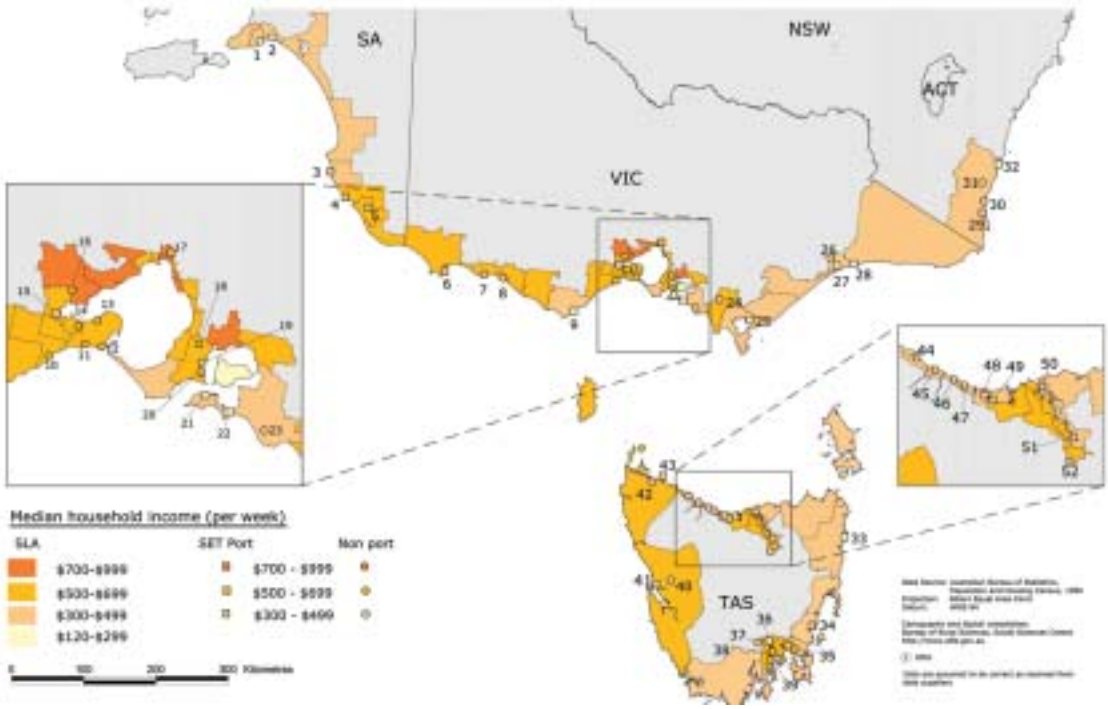
Map 1: *Total population in the South-east Marine Region.*



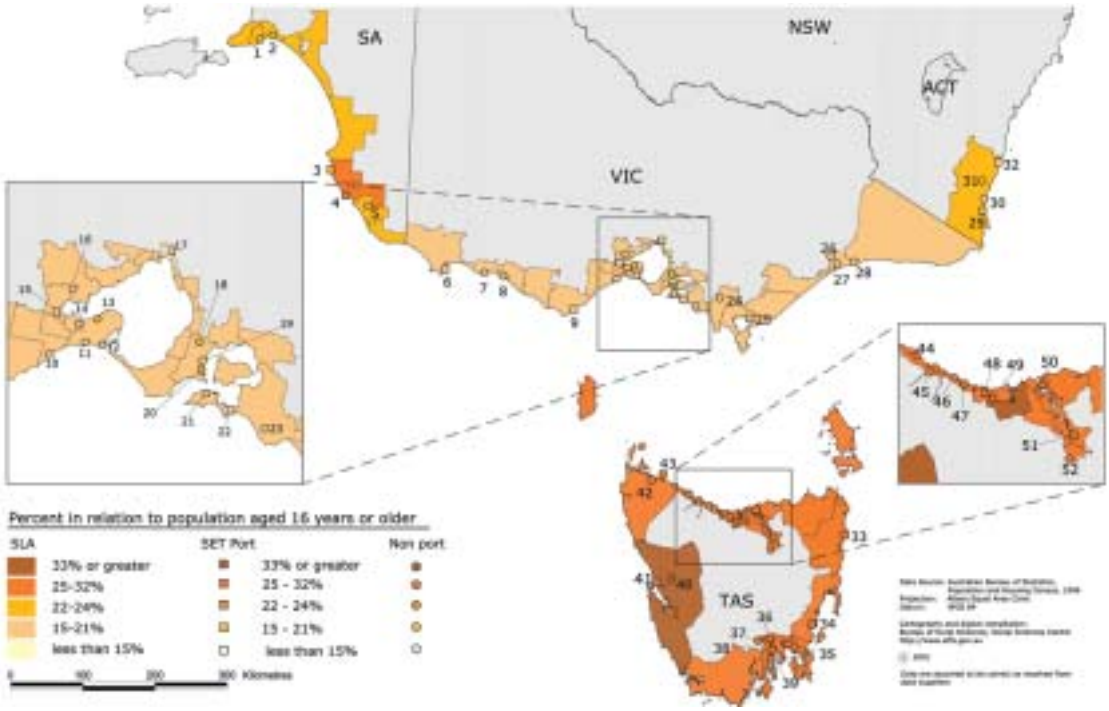
Map 2: *Population growth, unemployment rates and median age in the South-east Marine Region.*



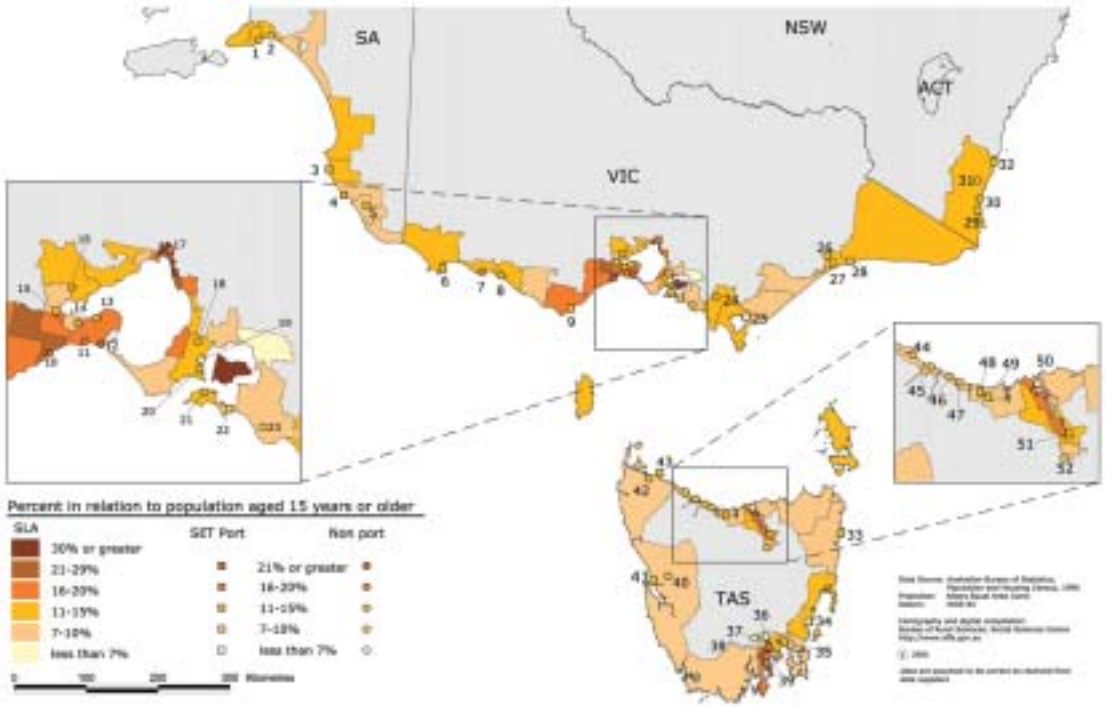
Map 3: *Median weekly household income of the South-east Marine Region.*



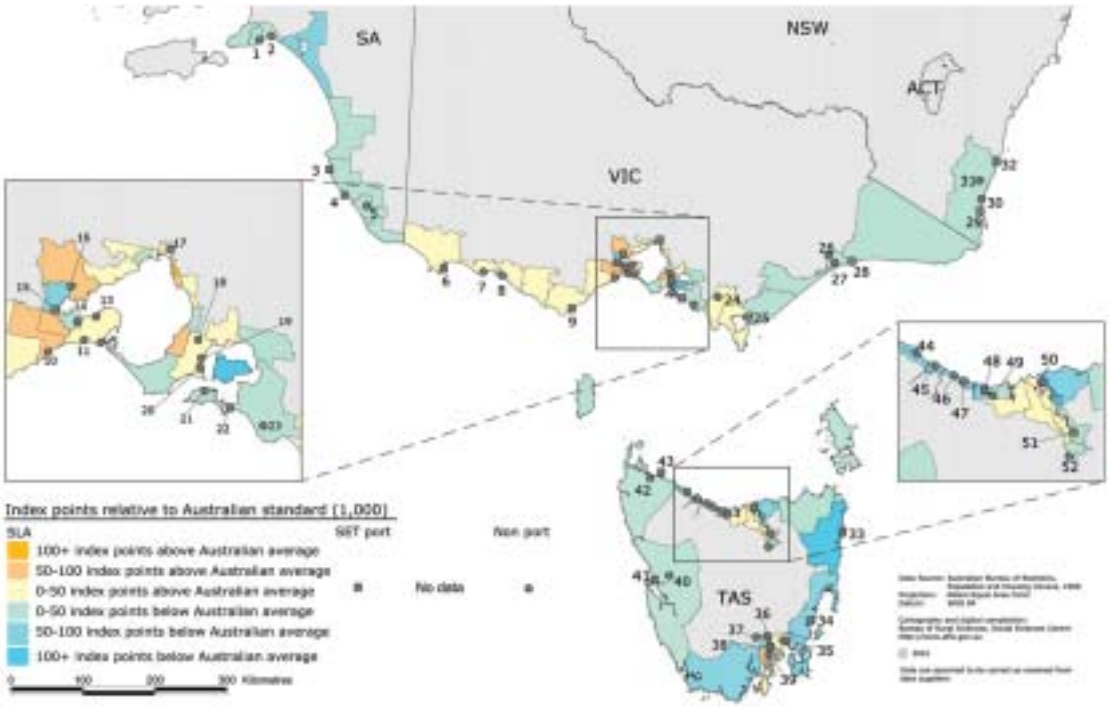
Map 4: *Percentage of people in the South-east Marine Region who left school at 16 years of age.*



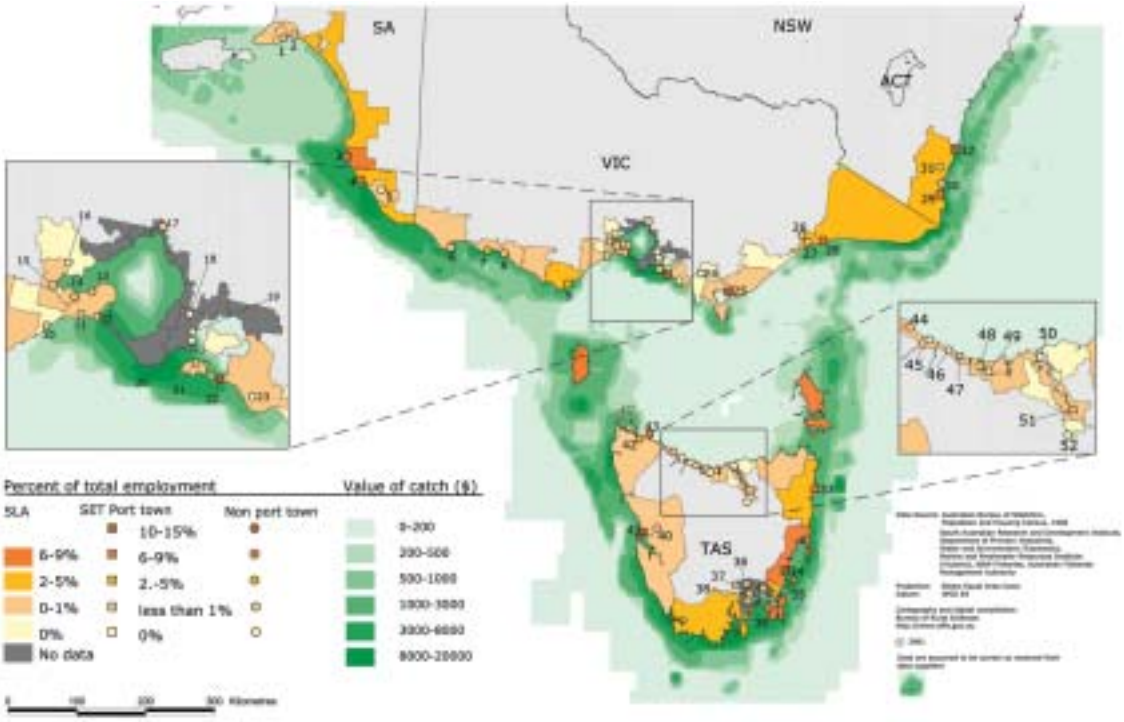
Map 5: *Percentage of population in the South-east Marine Region with higher educational qualifications.*



Map 6: *Index of relative disadvantage (SEIFA) for the South-east Marine Region.*



Map 7: *Percentage of total employment in commercial fishing in the South-east Marine Region.*



Map 8: *Areas of marine cultural heritage in the South-east Marine Region.*

Section 3

Literature Review

This chapter provides some examples of the latest social-research on the marine and coastal environment that are relevant to this report. The intention was to inform the methods and approach for the research and to provide a wider context for the research undertaken for the Community and Cultural Values Assessment.

The examples used here have mostly been completed in the last few years and some are currently underway and have not yet been published. They reflect a recent trend for social-research to be commissioned by government agencies to ensure that their management arrangements are more effective and acceptable to their stakeholders.

Examples are provided from the South-east Marine Region, other States within Australia, nationally within Australia and from other developed nations overseas. Each example gives a brief description of the agency that commissioned the report, what the report was used for, the methods used and what the report found.

1. Marine and coastal social research in the South-east Marine Region

South-east Marine Region: Sharing in the catch or cashing in the share? Social Impacts of Individual Transferable Quotas and the South East Fishery (2001)

This report by the Bureau of Rural Sciences looks at the social outcomes of applying Individual Transferable Quotas to manage wild catch fisheries in Australia's South-east Fishery.

Semi-structured interviews and a literature review were used. The study found that the introduction of quotas had created hostility towards the regulatory bodies because the initial allocation process was perceived to be flawed. The information gathered through the research was used to work through issues and adjust the program. Most southeast fishery operators are reported to now accept the quota system.

The report demonstrated that research into the social impacts of a change in management can improve understanding of the complexities of individual fisheries and fisheries communities. Better-designed strategies to inform and consult with those potentially affected are important in ensuring that changes to management arrangements are both effective and acceptable to stakeholders.

Victoria: Victorian Coastal and Marine Environment Community Attitudes and Behaviour (2000)

This report was commissioned in December 2000 by the Department of Natural Resources and Environment, which was developing long-term strategies for managing the Victorian coastline.

The research sought to identify:

- 'hot issues' affecting the Victorian coastal and marine environment as perceived by the community
- public opinion on the adequacy of management of the Victorian coastline
- changes in public attitude and behaviour towards the Victorian coast since 1996.

Workshops and telephone interviews were conducted in October and November 2000.

The key messages identified through the workshops and interviews were developed into actions. These messages were:

- the main appeal of the coast is 'getting away from it all'
- many Victorians would like to see more, and better, basic foreshore facilities
- people wanted to have effective input on issues affecting their local environment
- the marine environment is perceived to be under threat
- education and enforcement were perceived as changing behaviour over time.

Tasmania: The Right Bait – Social Contributions of Tourism Fishing Charter Operations to St Helens, Tasmania (2001)

This report was prepared for the National Oceans Office, October 2001 by the Bureau of Rural Sciences, in the Commonwealth Department of Agriculture, Fisheries and Forestry.

Interviews, telephone surveys and literature reviews were used to investigate the impact of the fishing charter-boat operations on the community of St Helens.

The research concluded that the charter-boat industry has boosted tourism at both a regional and State level and provided an alternative source of income for people who had previously worked as commercial fishers. The industry had also encouraged new investment that would not otherwise have been made. The research also identified moves within the industry to improve management standards through accreditation, which in turn has increased pressure to improve access to educational facilities.

Tasmania: South East Tasmania Coastal Strategy – Public Consultation Reports (2000)

Two surveys were commissioned to assist with developing a South East Coastal Management Strategy for Tasmania. Development of the strategy was funded by State and local governments and through the Commonwealth Government's Natural Heritage Trust.

The first survey consisted of face-to-face interviews with 227 people at frequently used coastal sites within the Tasman, Sorell and Clarence municipalities.

This survey found that users of the south-east coast were strongly supportive of a cleaner, pollution-free environment. The most common values for the region were peaceful surroundings, views and outlook, clean water and access to the shore. Coastal users were also found to be supportive of the development of a strategy to guide coastal development and use.

The second survey consisted of a telephone survey of 416 ratepayers with properties in the coastal zones within the Tasman, Sorell and Clarence councils' boundaries. The aim was to determine their values, what they perceive as threats to the area and what may affect the future of the area.

The telephone survey found that people with properties in the coastal zone attach considerable value to living by the coast, and in particular value the natural environment, scenery, air and lifestyle.

There were differing views on issues within and between the two groups surveyed, most notably on the extent to which there may be conflict between recreational uses of the coastal area and the need to protect the environment and preserve valued lifestyles.

South Australia: Perceptions of the Environment: Community Environmental Awareness in South Australia (1980)

This report was commissioned by the Department of Environment and Planning in 1980 to determine community understanding of the environment and environmental issues. Research on local environmental issues, local media and action groups was used to complement personal interviews.

The study concluded that the word 'environment' meant different things to different people and that there was confusion about the nature of the environment and the agencies responsible for its management.

Respondents collectively ranked environmental issues eighth in order of importance after other issues such as unemployment and education.

Since the publication of the report South Australia has conducted a series of surveys focused on coastal and marine issues. The completed surveys include coastal shack owners on Yorke Peninsula; Adelaide beach users; and recreational fishers.

New South Wales Who cares about the environment? Environmental knowledge, attitudes and behaviours in New South Wales (2000)

The NSW Environment Protection Authority commissioned this report to determine community environmental knowledge, attitudes and behaviours in NSW in 2000. The aim was to assist the Authority in responding to the community's environment needs and to trace changes in community attitudes since earlier surveys in 1994 and 1997.

The telephone surveys asked participants about their priorities for NSW government action on the environment; their knowledge of environmental issues; and their perceptions of and views on environmental issues and activities.

The 2000 survey found that close to 9 out of 10 people (88%) in NSW are concerned about the environment, with little difference from those of the 1994 and 1997 surveys. The main concerns in relation to the environment were 'concern for future generations' (29%), 'quality of life' (20%), and 'health' at 18%.

When asked to identify the two most important issues for attention by the State Government now and in 10 year's time, 10% mentioned the environment as an important issue now, and 17 % rated the environment as one of the top three issues for attention in 10 years time.

People from non-English speaking backgrounds also had very similar levels of concern to those from English-speaking backgrounds.

2. Other marine and coastal social research at the State Level

Western Australia: The North West Shelf – An Environmental Study

The North West Shelf Environmental Study is a joint initiative of the Western Australian Government and CSIRO Marine Research. The study aims to predict the human and natural impacts on the North West Shelf of current and proposed activity, with a view to evaluating existing and proposed management strategies. The research is designed to assist in developing more integrated approaches to planning and management in the region, with the goal of achieving ecologically sustainable development.

A collaborative approach to achieving integrated management has been proposed to balance competing uses. Critical to the study is information from the community about development options for the region. Identifying the values the community places on the environment and local economy is an important part of the study. This is currently being done through a survey. The report is due to be completed in February 2002.

Queensland: Experimental recreational catch estimates for Queensland residents (1996 – 1999)

A Queensland wide telephone survey was commissioned in 1996 for the Queensland Fisheries Management Authority's Recreational Fishing Program. The survey was commissioned to quantify the importance of recreational fishing.

The survey identified 5000 volunteers who were willing to contribute to the management of fish stocks by recording their fishing activities throughout 1997 in a fishing diary. Due to the success of the 1997 diary program, a further diary program was run in 1999. The results of both diary programs have been published.

The reports provide information on the number of fish caught, type of fish, number released, age and gender of fisher, fishing frequency and favourite fishing spots. As the data have been collected over several years, trends have emerged – such as changes in the catches of different species.

3. Marine and coastal social research at the national level

What do you think? A questionnaire of MCCN participants (2001)

A questionnaire was mailed out in 2001 by the Marine and Coastal Community Network (MCCN) to its members. Its aim was to identify the priority marine and coastal conservation issues in Australia, the value of the Network to members, the effectiveness of MCCN tools and products, and the priorities for future MCCN activity.

An analysis is being completed, but preliminary results indicate that the top three marine and coastal conservation issues for members of the network are: ballast water and introduced marine pests, water quality and marine pollution.

Australian estuaries: A framework for management (2000)

Community involvement in the management of Australian estuaries was one of several issues assessed in the Australian Estuary Management project (June 1998 to December 2000). The project was funded by the Land and Water Resources Research and Development Corporation (now called Land and Water Australia).

The data were obtained through interviews with estuary users and key local managers at 16 case-study sites across Australia. A national postal survey of managers, researchers, peak user groups and peak conservation groups provided additional information.

The key findings were that the community knew little about estuary management, and had no opportunities to participate. Estuary managers were supportive of greater community involvement in management decisions.

As a result of these findings, the report recommended that:

- the Federal Government establish and resource a national centre for community participation
- the Federal Government establish and resource an estuary information centre as a peak information centre
- the Federal Government develop, update and formally adopt best practice community-participation goals, in partnership with the States and local government.

Our Sea, Our Future: Major findings of the State of the Marine Environment Report for Australia (1995)

The State of the Marine Environment Report was commissioned by the Department of Environment, Sport and Territories to develop a comprehensive description of Australia's marine environment, its uses and values, the issues and threats affecting it, and its management. The report included an assessment of the social and cultural values of the coastal and marine environment for Australia's Indigenous and non-Indigenous communities.

The ocean and its resources were found to be of considerable cultural value to Indigenous communities. Some of their concerns were:

- their dispossession from their traditional land/sea estates
- threats, desecration and injury to sites of cultural significance
- loss of ancient fishing and hunting rights
- their lack of commercial fishing opportunities
- their general lack of participation in coastal environmental planning and management.

Torres Strait Islanders share many concerns with coastal Aboriginal people. However, the report found that Torres Strait Islander concerns extend to: land and sea title, high levels of heavy metals in seafood, threats of enhanced greenhouse effect, rising sea-level, threats of oil spills, effects of prawn trawling, lack of access to commercial fisheries, over-hunting of dugongs and turtles, and resource conflicts with Papua New Guinea.

The ocean has considerable social and cultural significance for Australia's non-Indigenous community, with three-quarters of Australians living within 50 km of the coast. Public opinion polls have reported that the most serious concern of people who are concerned about the environment was pollution of rivers, beaches, harbours and the sea. Coastal heritage sites, marine conservation and marine industries were also of concern.

The State of the Marine Environment report identified education as one of the most important and cost-effective tools in marine management. Education covered both formal education in schools and tertiary institutions, as well as community-based education (eg for recreational fishers, commercial fishers, Indigenous communities, users of marine protected areas, and divers).

Values and attitudes concerning the coastal zone – Information Paper No. 4 (1993)

In 1993 the Resource Assessment Commission released the report on its inquiry into the management and use of the resources of Australia's coastal zone. The report included a section on community values and attitudes, which were drawn from an extensive public consultation process based on submissions and hearings.

Submissions to the Inquiry and transcripts of hearings were analysed to identify the values and attitudes of individuals and organisations who participated. Existing surveys commissioned by government agencies or private firms that included data at the national scale complemented the submissions and transcripts.

The study found that the coastal zone was an important area to Australians in terms of culture, leisure, residence, employment and enjoyment of the natural environment. Many different groups articulated their interests and views on development, environmental protection equity and the role of Government in resource management. Concern about the ecological degradation of the coastal zone was high, with pollution, sewage, run-off, landscape degradation, wetland depletion and aesthetic degradation all of significance.

There were many different views on economic development, and doubts were expressed about particular urban and tourism developments. Representatives of commercial interests were more inclined to accept trade-offs between development and ecological consequences. A common aspiration was for an integrated system of management to balance economic and ecological issues.

4. *Marine and coastal social research at the international level*

Communicating about ocean health and protection, United States of America (1999)

The Ocean Project is a public education effort of aquariums, zoos and museums to build awareness of the importance, value and sensitivity of the oceans.

In 1999, a national telephone survey of 1500 adults was conducted to explore the public's connections, values, attitudes and knowledge of the oceans.

The survey found that, while the participants' knowledge of ocean functions was poor, most believed that the oceans are vulnerable and can be damaged by humans. However, the participants did not perceive the oceans to be in immediate danger and therefore did not see a need for action. There was also evidence that participants underestimated their own role in damaging the oceans.

It was also found that aquariums, zoos and museums were in a unique position to educate the public about oceans, as a large percentage of participants had visited one or more of these attractions in the 12 months before the survey.

The report recommended that:

- education should appeal to individual responsibility by combining emotion and information, and by connecting values to the message of recreation and healthy futures
- target groups should include women, Afro-Americans, Hispanics and those who live in places close to the ocean
- further education was required, specifically with regard to destructive fishing practices and coastal development
- aquariums, zoos and science museums should use specific messages to communicate to different attitudinal groups.

Attitudes and actions: A national survey on the environment, Ireland (1999)

This survey was conducted in 1999 with a sample of 1003 adults aged 18 or over. The data were collected through face-to-face interviews. The survey focussed on the attitudes and actions of the participants in relation to the environment.

The results of the survey demonstrated that, while Irish people claim to be concerned about the environment and believe that it is an immediate and urgent problem, their actions do not reflect this concern. This inconsistency was particularly evident in the areas of litter/rubbish and recycling. For example, 38% stated their top environmental concern was rubbish on the streets, yet 49% admitted to having recently littered, with 36% having littered more than once.

The results also showed that participants were willing to behave in more environmentally responsible ways, provided this did not require any real effort on their part and was more cost-efficient for them to do so. For example, recycling was higher in areas that provided household collection.

The study recommended that emphasis be placed on linking an individual's behaviour with their concern for the environment. Education on simple daily steps that require minimal effort and are more environmentally friendly – such as recycling, water conservation and more considerate shopping – were recommended.

Healthy Sea: Healthy Society. Towards an Oceans Policy for New Zealand (2001)

New Zealand's Oceans Policy is being developed. It has completed a public consultation program aimed at identifying the community's aspirations, concerns, values and visions for the oceans. This consultation comprised 71 meetings and a call for submissions, supported by a media campaign. A total of 2000 people attended the meetings, and 1160 written submissions were received.

The consultation found that New Zealanders have a strong connection to the oceans and a strong interest in maintaining clean and healthy seas. They also had a desire for secure provision of marine infrastructure services and recreational uses. Overall, a desire for an adaptable, integrated management system with clear goals was identified.

It is expected that the initial Oceans Policy for New Zealand will be developed by 2003.

Appendix A

Social assessment methods

A survey of community values is a descriptive or observational study of a cross-section of people (Fink 1995). A social-research study is not intended to discover a scientific principle; instead it attempts to identify the many different values people have about an issue, and may also indicate changes over time. Although social-research does not seek a single scientific 'truth', its methods are rigorous and aim to be objective.

Fenton and Coakes (1998) list the reasons for surveying community values as:

- to assist in setting natural resource management goals that reflect the intrinsic and amenity values
- to aid in understanding community reaction to management regimes and policies
- to assist in identifying the conflicts between different stakeholder groups within a community.

The social-research for this report is intended to assist in understanding community responses to management systems and also to assist in designing the new management systems so that they are more meaningful to the community.

Methods used in social research studies

Social research uses a variety of methods to gather information.

The first method is to review relevant literature, making use of the insights or knowledge of the researcher. The study Social Values of the Native Vegetation of New South Wales (2000) is an example of such an approach.

The second method is to call for submissions from interested groups and analyse the data received. For example, a large number of submissions from a variety of sources were analysed for the Resource Assessment Commission Coastal Zone Inquiry (1993).

The next two methods actively gather new data through surveys. Most studies collect new data through a survey of some kind, and may also review submissions, literature and use personal insight. Surveys that do not involve asking people questions include a review of records and observational surveys. There is also interactive surveying, which uses questionnaires and interviews.

- Lothian (1995) categorises survey components into four broad groups:
- longitudinal polls – pose the same question at intervals over a period of time
- general surveys – cover broad issues
- specialised issue surveys – cover one or several issues
- surveys of specialised groups.

A social-research study of a single issue can use a simple method to elicit answers to one question (Walters 1986). However, to investigate the complex range of social values and attitudes regarding the ocean, a more holistic approach is required.

Of the four methods available to the social-researcher, a literature review and survey were considered to be the most appropriate for the assessment. The literature strongly guided our choice of social-research techniques.

Formal submissions were not sought from community groups, as the combination of surveys, consultation and community meetings was deemed sufficient.

Survey Methods

To survey a population, the most appropriate sampling and survey methods must be chosen, and the questions must be carefully targeted. The data collected must be suitable for statistical analysis. Both quantitative data (involving numerical values), and qualitative data (not involving numbers) must be collected in a valid and reliable way.

Sampling methods

It is not usually feasible to interview every person in a community to assess their values. A representative subsample of the population must therefore be selected. To measure the values of special-interest groups, a representative cross-section of all the groups should be included.

Surveys generally use probability sampling either selecting participants at random from a community, or selecting them randomly from within subgroups of, for example, age, sex, region and social factors (stratified sampling). Participants in the assessment's telephone survey were selected by stratified sampling from the community living within 50 kilometres of the coastline in the South-east Marine Region.

Alternatively, a survey can use non-probability sampling, where the researcher selects the candidates based on the needs of the survey. Non-probability sampling is commonly used to survey the values and attitudes of specialised groups, who may not represent the larger community. This bias can be minimised by careful selection of the participants, based on preliminary research, and prudent interpretation of the results. This approach was used for the conservation organisations workshop, where 30 representatives of regional and national organisations were invited to express their values for, and attitudes to the South-east Region.

Pilot surveys are frequently used to provide information and clarify questions before the larger survey is made. A pilot telephone survey was used as input into focus group discussion design for the *Who Cares About the Environment?* Report (2001). Conversely, focus group discussions can be used to develop questionnaires or interviews, as was done for *Victorian Coastal and Marine Environment Community Attitudes and Behaviour* (2001), and *Catchment management: assessing community values* (1999).

Written questionnaires

Written questionnaires generally include multiple-choice, pre-coded and open-ended questions. A written questionnaire can be used to survey people across the whole community, or be targeted to special-interest groups in the community. Mail-out surveys commonly have a low return rate. To counter this, the assessment mail-out to marine-focused community interest groups was followed by workshops.

Surveys of special interest groups can use an existing mailing list, such as the Marine and Coastal Community Network's list of 9000 members used for the report, *What do you think? A Questionnaire of Marine Coastal & Community Network Participants* (2001, unpub). Candidates can be selected by consulting records; the attitudes of farmers to rural environmental issues were assessed with a questionnaire survey sent to 5400 farmers in the Rural Environmental Issues survey (2001). Mail-out surveys of interest groups can also suffer from a low return rate; for example only 56 of 200 questionnaires were returned for the survey, *Australian Estuaries: a Framework for Management survey* (2001).

Telephone surveys

Telephone surveys, unlike mail-out surveys, do not have low return rates – the surveyor persists until willing participants are found. A prescribed questionnaire is generally used to ensure consistency, with most questions having responses to choose from, though sometimes a few are open-ended. Telephone surveys have been used to investigate the social values associated with the marine environment. For example, 416 telephone interviews were conducted for the *South East Coast Strategy Telephone Survey* (2000 unpub); 701 for the *Victorian Coastal and Marine Environment Community Attitudes and Behaviour* (2000 unpub); 1003 for *Understanding Public Perceptions of the Great Barrier Reef & its Management* (1999) and 1500 interviews for *Communicating About Ocean Health & Protection: United States Ocean Project* (2000).

Just over 1300 people responded to the telephone survey conducted for the South-east Marine Region assessment. A prescribed questionnaire was used to collect statistically valid data on values and attitudes that could be extrapolated to the rest of the community along the coastline of the Region.

Face-to-face interviews

One-on-one interviews can be used to survey the values of a community, or of special-interest groups. They usually follow a prescribed questionnaire, which needs to be administered by trained personnel. One-on-one interviews can be an expensive and time-consuming method of collecting data, but open-ended questions (if used) can provide new insights.

Randomly selected participants of the community are often interviewed in their homes. However, special-interest groups were interviewed on the river banks for *Australian estuaries: A framework for management study* (2001) and conducted on the beach for the *Beach User Survey* (1988) and *South East Coast Strategy Face-to-Face Research Report* (2001).

Face-to-face interviews were not used for this assessment.

Group interviews

Discussions with randomly sampled groups of a community have been used to assess community values. Similarly, discussions with selected members of special-interest groups (called focus groups) are used to assess the groups' values. Comments and opinions recorded during the meeting can provide valuable qualitative data. Discussion sessions and focus group meetings are both used to help design more formal or quantitative surveys, as they provide locally relevant questions to use in the survey.

For our assessment three focus group discussions were held before the telephone survey to determine the range of attitudes and the most effective informal language to be used in the survey.

A combination of methods

All the methods mentioned above offer different advantages, so most social-research studies use a combination of them to research community values. Qualitative research, is often the starting point, backed up by the researchers knowledge of the literature, legislation, policy documents, management plans, case studies and media coverage.

This assessment used a combination of techniques, as the literature suggests: focus groups, a pilot survey, a telephone survey of the general public, a postal survey and workshops for marine-focused community interest groups, and a workshop for national and regional conservation organisations.

Survey questions

The wording and style of questions are crucial to a successful and unbiased survey. The set of questions must be reliable, easy to understand, well administered and comprehensive. In face-to-face interviews and group discussions observers must try to be consistent, and also consistent with other observers. Survey errors can be caused by the mis-recording of answers, interviewer bias (through the way they ask the question, interpret the answer, or affects through their personality the respondents) and respondents not answering honestly to avoid embarrassment (Moser & Kalton 1981).

If questions are missing the point of the issue or miss an aspect of the subject, the survey is not valid. Poorly phrased questions can also affect the usefulness of the study.

Some of these issues can be overcome through computer assisted telephone interviewing, which was used to administer the pilot test and the survey.

The questions used in the telephone survey were designed to be as objective and statistically robust as possible. Respondents were asked to express their attitudes and opinions on a continuous scale, to allow for degrees of agreement or disagreement.

Another method of accommodating the complexity of opinions was to provide a range of attitude statements, rather than just one or two. This made it easier for respondents to choose the closest fit to their views.

The reliability of surveys can be affected by people's values changing naturally over time. Their values may also be influenced by other events. For example, recent media coverage can affect the local context of an issue, or other concerns, such as unemployment, can over-ride the level of concern for environmental issues (Lothian 1995). This effect needs to be taken into account, and possibly ameliorated by the researchers.

Table 4:
Methods used in assessments of community attitudes to the marine and coastal environment.

STUDY	SURVEYS			INTERVIEWS			COMMENTS
	Phone	Mail Out	Sampling Strategy	1 on 1	Focus Groups	Sampling Strategy	
Regional							
Sharing in the catch...? (2001)				17		Selected	Literature review plus interviews.
Vic Coastal & Marine Environment (2000)	701		Deliberate coast bias		9	Stratified random	Group interview input into phone poll design, plus Literature review.
The Right Bait (2001)	✔			✔	✔	27 selected interviews	Interviews, phone suvey, literature review and qualitative research.
SE coast strategy (2001)	416		Stratified random	227		On-site, 8 locations	
Australian Estuaries (2001)		200	Selected, 56 responses	325	✔	On-site user interviews, Local manager interviews	Plus a comprehensive Literature review.
North West Shelf (2001)	✔						Large scale phone survey in progress.
Qld Rec fishing (1997)	3700		Stratified random	5000		Diary system of fishing habits	Phone survey fed into diary design.
Qld Rec fishing (1999)	21583		Stratifed random	4506		Diary system of fishing habits	Phone survey fed into diary design.
Great Barrier Reef (1999)	1003						
National							
Our Sea, Our Future (2000)							Review of literature. Case studies.
RAC Coastal Zone Inquiry (1993)							Clustered, qualitative analysis of submissions and transcripts.
Marine Coastal & Comm. Network (2001)		3000	Member list				Survey of members regarding the performance of the organisation.
International							
NZ Oceans Policy (2001)		1160	Invited submissions + website		71	Invited consultation meetings	
The Ocean Project, US (1999)	1500		Stratified random		6	Selected	Assessed values, attitudes and knowledge of oceans.

✔ = data on sample size available

Appendix B

Participants – Conservation Organisation Workshop

Name	Organisation
Bill Pemberton	Surf Riders
Chris Smyth	Victorian National Parks Association
Christian Bell	Marine and Coastal Community Network
Christine Soul	Ocean Watch
Craig Bohm	Marine and Coastal Community Network
Craig Woodfield	Tasmanian Conservation Trust
Denis Beros	WACC
Ilsa Kiessling	World Wildlife Fund
Jane Elek	TMNA
Kate Davey	AMCS
Kathy Ridge	NCC (NSW)
Marg Moore	World Wildlife Fund
Mark Rodrigue	Department of Natural Resources and Environment
Megan Gallagher	NCC (NSW)
Michael Morehead	Clean Ocean Foundation
Michelle Barrett-Dean	AMCS
Michelle Grady	CCSA
Patrick O'Leary	Marine and Coastal Community Network
Peter Smith	Clean Ocean Foundation
Quentin Hamich	Greenpeace
Rebecca Brand	Humane Society International
Serge Killingbeck	Australian Conservation Foundation
Tim Allen	Marine and Coastal Community Network
Tim Anderson	New South Wales National Parks Association
Tony Flaherty	Marine and Coastal Community Network
Vanessa Atkinson	Greenpeace

APPENDIX C: *Conservation Organisation Workshop, Values and Priority Table*

Value	Rank
A comprehensive, adequate and representative system of large, fully protected marine national parks (ie IUCN categories 1 & 2)	1
Biodiversity conservation as the non-negotiable cornerstone in the management of uses in the South-east Marine Region	2
An unpolluted marine environment	3
Minimum 20% no-take areas with appropriate buffers	4
An informed and engaged community that actively cares for the marine environment	5
Reversal of the burden of proof on users to prove their use will not be significantly detrimental to the environment	6
Increased knowledge of the spatial distribution of habitats and communities as the basis for area-based planning	7
Move away from industry self-regulation	8
Enforceable plans on all stakeholders	9
Regional Marine Planning must direct industry policy and management	10
Transparency on issuing off-shore petroleum lease areas/permits	11
Vessel Monitoring Systems on all fishing vessels	
Strategic plan for invasive species prevention and management	
Integrated management that is enforceable	12
Conservation of the area should be the fundamental basis of the plan	
Significant no-take areas	
Registration of degraded environments	
Large no-take marine sanctuary network (with monitoring and enforcement)	
Integrated legislative planning and penalty regime; reverse the onus of proving environment not harmed	
Comprehensive ecosystem-health monitoring assessment framework to provide accurate information on the South-east Marine Region area	
Ecosystem Based Management framework of all uses (including LBSMP and impacts)	
Fishing methodology matched to habitats	
Meaningful system of penalties and incentives	13
Explicit links to greenhouse mitigation actions	
Current users should justify their continuing use and practices against regulated sustainability criteria	
Transparency	13
Cessation of destructive fishing practices such as trawling	
Whale and dolphin sanctuary (further species, eg total marine sanctuary)	
Ecosystem health must be the bottom line (primary objective/goal)	
No old crab, roughy, southern bluefin tuna or Patagonian toothfish fisheries at all in the region	
Water quality and marine pollution issues	
Strong inter-governmental agreement	14
More resources for independent scrutiny and enforcement of environmental protection and regulation	
New resource uses should satisfy higher initial information requirements before commencement, ie environmental impacts and baselines	
Marine/maritime environment as a single administrative area, overseen by an oceans authority responsible to a single political entity (department)	
Integration of current and future threatened species recovery and action plans	
Recognition of intrinsic (natural) value of area (ie conservation for conservation sake)	
States involved/cooperation (all of government)	
Not a Regional Forest Agreement outcome	
No sea-mount fisheries	
Increased community appreciation of the environment and ability to engage	
No nuclear waste transport or extraction in the Region	
Delineated fishing areas	
Community education on what the South-east Region is	
Jurisdictional agreement on Regional Marine Planning (new legislation)	
Regional Marine Planning must establish framework for off reserve management	
Fewer guidelines and more regulated standards	15
Flexibility to incorporate new scientific information	
Immediate change to fisheries management with an ecosystem based management framework	
Decision-making shouldn't be based on political will	
Modify or reformulate the Offshore Constitutional Settlement so it supports integrated management	
Crackdown on poaching – domestic and international	
Incentive packages for transitional arrangements	

APPENDIX D: *Levels of agreement with attitude statements – telephone survey (n=1306)*

Attitude statement	Disagree %	Neutral %	Agree %
It is essential that the community makes sure the government manages the marine region well	3	11	85
Management must be based on looking after the marine environment	3	13	84
It is essential that management of the Region includes educating the community about the deeper ocean	5	14	81
Much more needs to be spent on research to make sure the marine environment is unharmed	4	16	80
There should be severe controls on commercial uses to protect the marine environment	6	15	79
I am as concerned about what happens to the deeper ocean as I am about what happens on the land	9	14	77
Management must include consultations with the community about what we want	8	16	76
It is essential that community consultation is included in planning for the Region	7	18	75
We should not let any foreign fishing vessels at all into Australian waters	17	15	69
There needs to be one central planning and management strategy for all users in the Region	10	20	70
I think there should be a lot more marine protected areas	11	21	68
Care of the marine environment comes first before anything else	11	21	68
We need to ban foreign use of our marine resources	14	20	66
A lot more tax money should be spent on looking after the fish and reefs	10	27	63
It's important to respect the rights of Indigenous Australians in the marine area	18	24	58
It's important to preserve ship wrecks in the area so we can enjoy the opportunity to explore them	18	24	58
It is essential we use the resources to ensure economic growth for the future	18	28	53
Overfishing by Australia's commercial fishermen is a huge problem in the area	18	34	46
Overall the management of the deeper ocean in the Region is extremely poor	12	54	34
Much more needs to be spent on research for economic development of the Region	23	35	42
There is too much damage from exploration for gas, minerals in the Region	23	45	31
Management must be based on looking for new resources we can profit from	34	30	36
I'd rather have everyone locked out of the Region than damage the environment	42	25	33
Commercial use of the area is top priority for Australia	46	26	28
Overfishing by Australia's recreational fishermen is a huge problem in the area	43	32	25
Economic development of the resources in the area must come first	48	28	24
There are already far too many controls on commercial or industrial use of the areas	48	34	18
Management of the Region needs to consider commercial users first and foremost	58	25	17
I'd rather have companies producing petrol than worry about whether or not they are harming the marine environment	81	12	7

APPENDIX E: *Levels of agreement with attitude statements – postal survey (n=53)*

Attitude statement	Disagree %	Neutral %	Agree %
It is essential that the community makes sure the government manages the marine region well	4	11	85
Management must be based on looking after the marine environment	30	28	41
It is essential that management of the Region includes educating the community about the deeper ocean	2	11	87
Much more needs to be spent on research to make sure the marine environment is unharmed	6	6	89
There should be severe controls on commercial uses to protect the marine environment	9	9	81
Management must include consultations with the community about what we want	8	17	75
It is essential that community consultation is included in planning for the Region	11	8	81
We should not let any foreign fishing vessels at all into Australian waters	13	9	77
There needs to be one central planning and management strategy for all users in the Region	6	15	79
I think there should be a lot more marine protected areas	26	9	64
Care of the marine environment comes first before anything else	9	9	81
We need to ban foreign use of our marine resources	15	13	71
A lot more tax money should be spent on looking after the fish and reefs	19	13	68
It's important to respect the rights of Indigenous Australians in the marine area	21	32	47
It's important to preserve ship wrecks in the area so we can enjoy the opportunity to explore them	9	26	64
It is essential we use the resources to ensure economic growth for the future	36	30	34
Overfishing by Australia's commercial fishermen is a huge problem in the area	17	28	55
Overall the management of the deeper ocean in the Region is extremely poor	13	19	68
Much more needs to be spent on research for economic development of the Region	32	38	30
There is too much damage from exploration for gas, minerals in the Region	30	28	42
Management must be based on looking for new resources we can profit from	57	19	25
I'd rather have everyone locked out of the Region than damage the environment	40	17	43
Commercial use of the area is top priority for Australia	60	21	19
Overfishing by Australia's recreational fishermen is a huge problem in the area	51	30	19
Economic development of the resources in the area must come first	74	13	13
There are already far too many controls on commercial or industrial use of the areas	74	17	9
Management of the Region needs to consider commercial users first and foremost	70	17	13
I'd rather have companies producing petrol than worry about whether or not they are harming the marine environment	75	6	19

*Note: *percentages may not add up to 100 due to rounding*

References

AIMA (Australian Institute for Maritime Archaeology) (1993). *Guidelines for the Management of Australia's Shipwrecks*. AIMA and the Australian Cultural Development Office, Canberra.

ANOP (Australian National Opinion Polls) Research (1993). *Community Attitudes to Environmental Issues*. Australian Government Publishing Service, Canberra.

Aslin, HJ; Connor, RD & Fisher, M (2001). *Sharing in the catch or cashing in the share? Social impacts of Individual Transferable Quotas and the South East Fishery*. Bureau of Rural Sciences and Centre for Resource and Environmental Studies, Canberra.

Belden, Russonello & Stewart; American Viewpoint (2000) *Communicating about Ocean Health and Protection*. An Analysis of Research for the US National Ocean Project.

Bureau of Rural Sciences (2001). *The Right Bait – social contributions of tourism fishing charter operations to St Helens, Tasmania*. (Federal) Department of Agriculture, Fisheries and Forestry, Canberra.

Cleland, EA & Goldsworthy, AJ (1981). *Perceptions of the Environment: Community environmental awareness in South Australia*. (South Australian) Department for the Environment and Planning, Adelaide.

Coakes, S (1999). *Social Impact Assessment – A policy maker's guide to developing SIA programs*. Social Sciences Centre, Bureau of Rural Sciences Kingston, ACT.

Coakes, S & Fenton, M (2000). *The application of social assessment in the Australian Regional Forest Agreement process*. International Forest Review 1:11-16.

Commonwealth of New Zealand (2001). *Healthy Sea: Healthy Society*. Towards an Oceans Policy for New Zealand, Wellington, New Zealand.

Connor, DM (1985). *Constructive Citizen Participation; a resource book (rev. ed.)*. Development Press, Victoria BC, Canada.

CSIRO (2001) Northwest Shelf Joint Environmental Management Study. Located at http://www.marine.csiro.au/nwsjems/

Drury Research (2000). *Attitudes & Actions; a national survey on the environment*. Department of the Environment and Local Government, Dublin, Ireland.

Eisenhart, M (1988). The ethnographic research tradition and mathematics education research. *Journal for Research in Mathematics Education* 19:99-114.

EMRS (Enterprise Marketing & Research Services) (2000). *South East Coast Strategy Telephone Survey Report*. Natural Heritage Trust; Clarence, Sorell & Tasman councils.

EMRS (Enterprise Marketing & Research Services) (2000). *South East Coast Strategy Face-to-Face Research Report*. Natural Heritage Trust; Clarence, Sorell & Tasman councils.

Environment Australia (1997). *Culture and Heritage: shipwrecks and associated objects*. Commonwealth of Australia, Canberra.

Essential Economics (2000). *Potential Social and Economic Effects of Recommendations for Victoria's Marine, Coastal and Estuarine Areas* (Appendix 4). Environment Conservation Council, Canberra.

Fenton, M & Coakes, S (1998). *Social Impact Assessment and Water Resource Management: an application of TRC analysis*. (Draft) EBC, Townsville, Queensland.

Fink, A (1995). *The Survey Handbook*. Sage Publications, Thousand Oaks, Cal., U.S.A.

Green, D; Moscardo, G; Greenwood, T; Pearce, P; Arthur, M; Clark, A & Woods, B (1999). *Understanding Public Perceptions of the Great Barrier Reef and its Management*. CRC for Reef Research Centre, Technical Report 29. Townsville, Queensland.

Hassell Planning Consultants (1988). Beach User Survey. Reviewed in: Lothian, JA (1988). *A Description and Review of Community Environmental Attitude Surveys in South Australia*. (South Australian) Department of Environment and Planning, Adelaide.

Heritage South Australia (2001). *Heritage*. Located at http://www.environment.sa.gov.au/heritage/maritime.html Last modified 25 Oct 2001.

Higgs, J (1997). *Experimental recreational catch estimates for Queensland Residents; Results from the 1997 diary round*. RFISH Technical Report 2, Queensland Fisheries Management Authority, Brisbane.

Higgs, J (1999). Recreational catch estimates for Queensland residents – *Results from the 1999 diary round*, RFISH Technical Report 3. Queensland Fisheries Service, Brisbane.

Holling, CS (1978). *Adaptive Environmental Assessment and Management*. John Wiley & Sons, Chichester, New York.

Holmes, P (2001). 'UN hoping to sink sea treasure hunters'. *Age* newspaper, 31 October 2001, p.14.

International Social Survey Programme (1994). *The Environment (1993 survey)*. Department of Marketing, Massey University, Palmerston North, NZ.

Irons, CD (1999). Catchment management, assessing community values. *Australian Journal of Environmental Management*, 6:10-13.

Lambert & Elix Background Paper 3 (2000). *Social Values of the Native Vegetation of New South Wales*, Native Vegetation Advisory Council, NSW.

Larcombe, J; Brooks, K; Charalambou, C; Fenton, M & Fisher, M (2001). *Marine Matters – Atlas of marine activities and coastal communities in Australia's South East Region*. Bureau of Rural Sciences, (Federal) Department of Agriculture, Fisheries and Forestry, Canberra.

Lothian, JA (1988). *A Description and Review of Community Environmental Attitude Surveys in South Australia*. (South Australian) Department of Environment and Planning, Adelaide.

Lothian, JA (1995). *Attitudes of Australians towards the environment; 1975 to 1994*. Australian Journal of Environmental Management 1:78-99.

Marine and Coastal Community Network (2001). *What do you think? A questionnaire of MCCN Participants*. MCCN, Victoria.

Moser, CA & Kalton, G (1981). *Survey Methods in Social Investigation (2nd ed.)* Heinemann Educational Books, London.

Nelson, N & Wright, S (1995). *Power and Participatory Development: Theory and practice*. Intermediate Technology, London, UK.

Pearson Sullivan (1995). *Looking after Heritage Places: the basics of heritage planning for managers, landowners and administrators*. Melbourne University Press, Carlton, Australia.

Reeve, V (2001). *Australian Farmers' Attitudes to Rural Environmental Issues: 1991-2000*. Prepared for Land and Water Australia. Institute for Rural Futures, University of New England, Armidale, NSW.

RAC (Resource Assessment Commission) (1993). *Coastal Zone Inquiry Final Report*. Australian Government Publishing Service, Canberra.

RAC (Resource Assessment Commission) (1993). *Values and Attitudes concerning the Coastal Zone*. Information Paper 4. Australian Government Publishing Service, Canberra.

Smith, TF; Sant, M & Thom, B (2001). *Australian Estuaries: A framework for management*. CRC for Coastal Zone, Estuary and Waterway Management, Indooroopilly, Qld.

Taverner Research (2000). *Who Cares about the Environment? Environmental knowledge, attitudes and behaviours in New South Wales*. Environment Protection Authority, Sydney, NSW.

Tourangeau, R (1984). Cognitive science and survey methods. In: Jabine, TB; Straf, ML; Tanur, JM & Tourangeau, R (eds) *Cognitive Aspects of Survey Methodology: Building a bridge between disciplines*. National Academic Press, Washington DC, USA.

TQA Research (2000). *Victorian Coastal and Marine Environment Community Attitudes and Behaviour (Wave 2), Executive Summary*. (Victorian) Department of Natural Resources and Environment, Melbourne, Vic.

Tuxill, (2000). *The landscape of conservation stewardship*. Marsh-Billings-Rocketfeller National Historical Park Conservation Study Institute & The Woodstock Foundation Inc, Woodstock, Vermont USA.

Walters, C (1986). *Adaptive Management of Renewable Resources*. Macmillan, New York, USA.

Zann, LP (2000). *The State of the Marine Environment Report for Australia: Technical Summary*. Prepared by Great Barrier Reef Marine Park Authority for Ocean Rescue 2000, (Australian) Department of the Environment, Sport & Territories, Canberra.

Zann, LP (2000). *Our Sea, Our Future; Major findings of the State of the Marine Environment Report for Australia*. Prepared by Great Barrier Reef Marine Park Authority for Ocean Rescue 2000, (Australian) Department of the Environment, Sport & Territories, Canberra.

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