Fiordland

Marine Conservation

Strategy

Te Kaupapa Atawhai o Te Moana o Atawhenua

Published by:

Guardians of Fiordlands's Fisheries

& Marine Environment Inc

Tautiaki Ika O Atawhenua

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Citation: Guardians of Fiordlands's Fisheries & Marine Environment Inc. 2003:
Fiordland Marine Conservation Strategy *(138 Pages)*

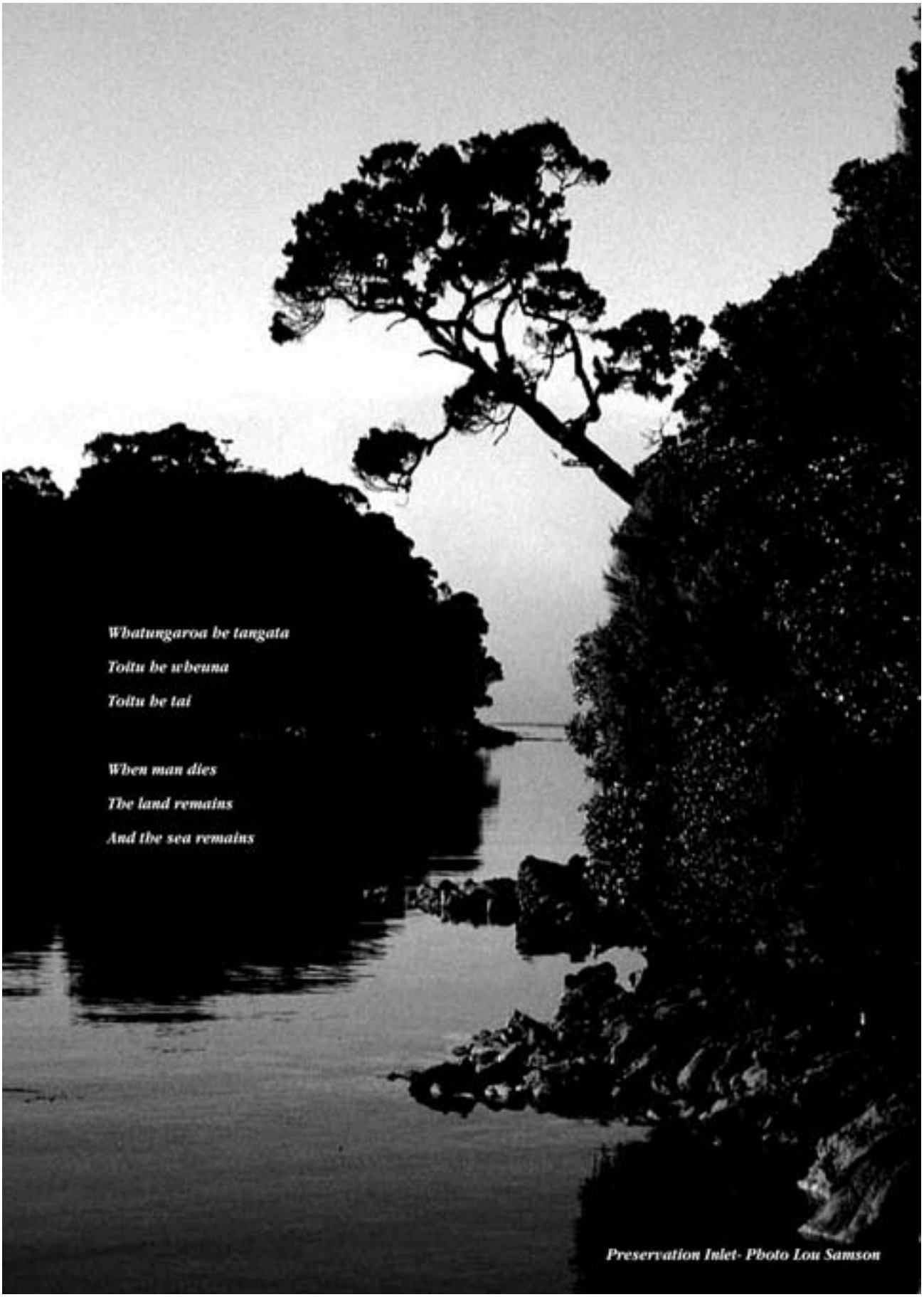
Published by

Guardians of Fiordland's Fisheries & Marine Environment Inc.

www.fiordland-guardians.org.nz

June 2003

ISBN 0-478-11904-6


Whatungarua be tangata
Toitu be whenua
Toitu be tai
When man dies
The land remains
And the sea remains
Preservation Inlet- Photo Lou Samson

Foreword

New Zealand and the Southland community have become increasing aware of the issues facing the Fiordland marine environment and the fisheries that exist within that unique ecosystem.

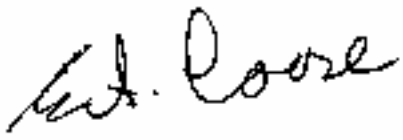
The Guardians' project has provided a multi-interest forum where those involved in the environment and fisheries management of the fiords and surrounding coast have worked together across agency and sector boundaries. The result is amazing both in the output (the various publications including this strategy) and in the strong relationships that will endure into the implementation phase and beyond.

There has been a spirit of goodwill and co-operation between tangata whenua, commercial and recreational fishers, tourism operators, environment and community interests. The Ministry of Fisheries, the Department of Conservation, our Council, the Ministry for the Environment including the Sustainable Management Fund, have together provided significant support and encouragement for the Guardians. This collaborative approach is an excellent example to people in other coastal regions around New Zealand who are concerned about the health and management of their local fisheries and marine environment.

This strategy is an important step in providing the much needed leadership and framework to point us all in the same direction in the management of the unique resources in Fiordland. It is also recognition of the extent and wealth of knowledge of the area and its resources that are held by people within the community. Local interested parties making decisions that affect their own locality is probably the most effective way of implementing government or any other form of policy.

The project must not end with the publication of this strategy, nor should it mean an end for the extensive voluntary effort put in by the Guardians on the community's behalf. I expect the Government to pick up this strategy and action its recommendations as soon as possible. The Government must also provide recognition of the Guardians and their effort by ensuring the Guardians continue to operate via a higher level status as an implementation advisor to Government and the local agencies.

Noho ora mai



Ted Loose
Chairman
Environment Southland

Table of Contents

List of Tables

List of Figures

Summary and Recommendations

The Guardians of Fiordland's Fisheries and Marine Environment

In this strategy the Guardians' advocate an integrated approach to managing Fiordland's fisheries and marine environment. The strategy is a very significant step towards realising the Guardians vision:

> *"That the quality of Fiordland's marine environment and fisheries, including the wider fishery experience, be maintained or improved for future generations to use and enjoy"*

During development, meetings were held throughout Southland and Otago to discuss ideas with groups represented on the Guardians. A draft strategy was compiled for public consultation and revised on the basis of the input received.

The Guardians care deeply about what happens to Fiordland's fisheries and marine environment. Concern about a number of issues and confidence that these could best be resolved at the local level were primary motivating factors in the Guardians' formation. For instance, increasing access is a major feature for Fiordland's marine environment and this has implications for the sustainability of fish stocks, the maintenance of special values and the potential for invasion by unwanted organisms. Accordingly, this initiative was seen as both necessary and timely given the changes taking place. The group initially hoped to "place a fence at the top of the cliff" but information revealed that it might be more realistic to put a major effort into turning around undesirable changes that are already taking place.

The Guardians include representatives of commercial and recreational fishers, charter operators, Ngäi Tahu Whanui (customary), community, environment and marine science interests. Collectively, the group has more than 250 years experience of Fiordland's fisheries and marine environment. Most have gained this by working in the area, some for many years. Members all live within the Fiordland or Southland/Otago region.

A special working relationship has evolved within the group from a strong common bond based on a shared passion and concern for Fiordland's fisheries and marine environment - a relationship that has been fundamental to the group's solidarity whilst working through potentially contentious issues and formulating agreed positions and strategies. Both trust and respect have grown over the past six years through the process of gathering information, identifying issues, debating ideas, developing management proposals, holding information meetings, consulting the public and producing this strategy.

The Guardians and the Agencies

The Guardians could not have produced this strategy without the support and advice of Environment Southland, the Ministry of Fisheries, Department of Conservation, and the Ministry for the Environment - the principal funding agency. These agencies are responsible for administering the legislation governing the management of Fiordland's fisheries and the marine environment. The combination of Ngäi Tahu Whanui (customary), recreational and commercial

fishers, charter operators and community, environment and marine science interests working with these agencies has proved to be particularly potent.

Our experience shows that effective solutions for issues within a local area are best developed on the basis of shared local knowledge supported by targeted research and agency advice. All involved recognise that Fiordland's fisheries and marine environment will be the winner if the results of this co-operative community/agency approach are implemented. Given the special values involved, the Guardians believe that a holistic approach is right for Fiordland's fisheries and marine environment. It is also a philosophy that is fundamental to the Government's Oceans Policy, Marine Protected Area and Marine Biodiversity initiatives. From that point of view the Guardians/agency strategy could provide a helpful working example.

Special features of the Marine Environment

The first step in working to achieve the Guardians' vision involved information gathering. Throughout the process a wide variety of sources have been tapped, including memories, local knowledge, observations, surveys and research.

The single most important feature underlying all aspects of the draft strategy is the nature of Fiordland's marine environment. A set of circumstances found nowhere else come together in Fiordland to create the special inside fiord habitat and communities. Briefly, torrential rainfall creates a stained freshwater surface layer that inhibits the growth of productive kelps that are characteristic of the outer coast. In the absence of a kelp band, animals that are normally found at depth have colonised the steep fiord walls from the surface to about 40 metres, popularly referred to as the 40m band. In comparison to the coastal kelp based communities, the inside fiord communities do not appear to be very productive. These features became a major focus for the Guardians as issues were discussed throughout the development of the strategy.

Identifying Issues

Issues were initially identified by brainstorming and grouped into four major categories:

- Fisheries
- Values of special significance
- Risks to the marine environment
- Expressing kaitiakitanga

Key objectives were defined for each group of issues to provide guidance and ensure that a consistent approach was maintained through debate and decision-making. Subsequently, the following categories were identified that also warranted objectives:

- Implementing the strategy
- Compliance of the strategy
- Monitoring the performance of the strategy

Guardians Objectives

The Guardians adopted the following key objectives:

- ***Information***

  Take a pro-active role in identifying and advocating research and information needs to obtain the necessary information for advancing the Guardian's objectives.

- ***Fisheries***

  - Ensure the sustainable utilisation of the finite fisheries resources, having regard to the special nature of the fiord environment.
  - Prevent uncontrolled expansion of effort/harvest by all groups.
  - Ensure that the rights of tangata whenua, recreational, charter operators, commercial and other user groups are identified and recognised and that these groups are involved in fisheries management decisions including access to the fisheries resource.
  - Support overarching fisheries management frameworks.
  - Fit management of fisheries to an appropriate spatial scale.
  - Encourage harvesting to take place at the entrances and outer coast.
  - Encourage voluntary compliance with the rules and reinforce the view that non-compliance is unacceptable behaviour.
  - Adopt a cautious and responsible approach to proposals for new developments, including fisheries developments

- ***Values of special significance***

  Ensure the ongoing integrity of areas, habitats and communities of special significance within Fiordland's marine environment.

- ***Risks to the marine environment***

  Avoid where possible, remedy, or mitigate the adverse impacts of human activities on fisheries and the marine environment.

- ***Expressing kaitiakitanga***

  That kaitiakitanga (stewardship) be appropriately expressed for Fiordland's fisheries and marine environment.

- ***Implementing the strategy***

  The negotiated package of measures contained in the strategy be implemented as a whole without compromising underlying principles and balances.

- ***Compliance objective***

  Encourage voluntary compliance with the rules and reinforce the view that non-compliance is unacceptable behaviour

- ***Monitoring the performance of the strategy***

  Evaluate whether the package of management measures is achieving the objects of the Integrated Management Strategy.

The Integrated Management Strategy

Maps, diagrams and tables of detailed information that support the information in this summary are presented in the strategy and appendices.

Fisheries

Addressing local and serial depletion within the fiords was identified as the top priority fisheries issue within Fiordland.

Local depletion is defined as "*the localised decrease in abundance of a species due to over exploitation or changes to the environment*".

Serial depletion is when "*a decrease in abundance of a species occurs in one local area and then extends sequentially to adjoining or wider areas*".

It is widely acknowledged that certain harvested fish stocks in Milford and Doubtful Sounds, the two most accessible fiords, are subject to local depletion. The uncertainty is the extent to which serial depletion might be taking place in other fiords and along the outer coast and what measures can be taken to prevent this from happening.

Information by fiord was needed to determine the state of the fish stocks and fisheries and develop an appropriate management approach. That information was gathered from a group of knowledgable commercial, recreational, charter operator and Ngäi Tahu Whanui fishers who collectively hold a wealth of information about Fiordland. Tapping into this substantial and diverse source of information was considered to be the best, and indeed, the only way of collecting the required information.

Interpretation of the information revealed patterns about fish stocks and fisheries for individual fiords, for harvested species (blue cod, rock lobster, groper, paua, scallops, Jock Stewart and kina), for the harvesting groups and for access.

Grouping Fiordland's Fisheries

When all the available information about fisheries and the marine environment was combined, it was clear that Fiordland's fisheries could be grouped according to the following three features:

- ***Habitat characteristics and productivity*** - are the habitats dominated by slow growing long lived animal communities[1] or productive kelp based habitats?

- ***State of the harvested fish stocks*** - are the fish stocks depleted, vulnerable or showing no signs of change?

- ***Current and future access and fishing pressure*** - what is the current level of harvesting pressure and how is that likely to change?

Collating information about these features for each fiord resulted in the fiords and coast falling logically into three distinctly different types of fisheries:

- ***Milford and Doubtful Sounds***

  These two fiords feature typical animal dominated, inside fiord habitat. Certain harvested stocks are depleted. Easy access has been available to these fiords for many years and as a result they are the most fished of the fiords.

- ***Inside the rest of the fiords***

  Also featuring typical animal dominated fiord habitat, inside the rest of the fiords certain fish stocks are declining or vulnerable. Both access and harvesting pressure are increasing. In fiords where concern about fish stocks is consistently expressed, such as Bligh Sound, harvesting pressure is already high. On the other hand, where fish stocks are not causing concern, as in Dagg Sound, harvesting pressure is not yet an issue.

- ***Fiord entrances and outer coast***

  Productive, plant based, coastal type habitat is a feature of the entrances and outer coast where the state of fish stocks is of less concern than inside the fiords. Whereas access is increasing in the fiord entrances it is likely to increase more slowly along the open coast.

  The fact that there are animal dominated habitats inside and plant based habitats outside the fiords has profound management implications. Management decisions designed to deal with such remarkably different habitat types require boundaries or transition zones to be defined between the habitats. Accordingly habitat lines have been located at the transition between animal dominated and productive kelp based communities. Where the transition takes place over a distance, the line has been located in the transition zone where there are obvious geographic features.

[1] "Animal dominated" means the communities are composed primarily of animals such as black coral, sponges, anemones, sea pens, brachiopods, kina and various fish species, many of which are deep water species and only encountered in shallow water in the fiords. In contrast, the outer coast communities are dominated by kelps (plants).

A Tailored Management Approach

Given three distinctly different types of fisheries in Fiordland (Milford/Doubtful, inside the rest of the fiords, and fiord entrances and outer coast), a single management response is not appropriate. Accordingly, the Guardians tailored management measures to accommodate the needs of the three very different groups. The management package represents an agreement between commercial and recreational fishers, Ngäi Tahu Whanui (customary), charter operators and environmental and community interests on the Guardians. Each fishing group has made significant sacrifices in the interests of looking after Fiordland's fisheries and marine environment. Reaching an agreement indicates a balance between the groups:

- ***Milford and Doubtful Sounds***

  Where fish stocks are depleted, harvesting pressure/harvest has to be drastically reduced to encourage a rebuild.

  Excluding commercial fishing and all bulk harvesting methods inside the habitat lines together with adopting a combination of temporary closures and a "fish for a feed - no accumulation" philosophy for amateur rules is proposed to deal with the two most accessible fiords.

- ***Inside the rest of the fiords***

  Where fish stocks are declining or vulnerable, harvesting pressure/harvest needs to be reduced to reverse the decline and to provide for the expected increase in harvesting pressure. Daily catches have to be set at a level where the total harvest is reduced.

  Excluding commercial fishing and all bulk harvesting methods from inside the habitat lines, together with conservative amateur bag limits and no accumulation of catches is considered to be the most appropriate approach for this group of fiords.

- ***Fiord entrances and outer coast***

  Where the state of fish stocks is dependent on future trends in access and fishing, it is desirable that harvesting pressure/harvest does not increase - indeed provision needs to be made for the expected increase in harvesting pressure.

  In the fiord entrances and along the outer coast commercial harvests are capped by provisions of the Quota Management System (QMS) and can be reduced for sustainability reasons as has occurred in the rock lobster fishery over recent years. Amateur daily bag limits and accumulation provisions need to be realistic for the Fiordland situation and changes in future fishing pressure.

Summary of Specific Fisheries Recommendations

Table 1 - Recommended Commercial Fishing Measures within the Fiordland area

Milford Sound	Doubtful Sound	Inside fiord habitat lines	Outside fiord habitat lines
No commercial fishing since the 1950s	No commercial fishing inside habitat lines	No commercial fishing	Commercial harvest capped by the QMS

Table 2 - Recommended Amateur/Customary Fishing Measures within the Fiordland area

Finfish/Shellfish Species	Daily species limit/ person inside Milford & Doubtful Snd habitat lines	Daily species limit/person inside fiord habitat lines	Daily species limit/person outside fiord habitat lines	Accumulation provisions
Blue cod	*** s186B(2+2?years)	3	20	No accumulation
Groper*	2	3	5	No accumulation
Jock Stewarts**		10		No accumulation
Combined fish bag limit	30			No accumulation
Rock lobster	2	3	6	Maxm. 3 days accumulation of 15****
Paua	10			No accumulation
Scallops	10			No accumulation

* Groper species daily limit included in combined finfish bag limit of 30.
** New daily limit for Jock Stewart (Sea Perch) inside the combined finfish bag.
*** s186B is a customary measure that provides for temporary closures relating to a fishery.
**** Allows for a maximum daily take limit of 6 rock lobster with a maximum possession and accumulation limit of 15 rock lobster per person for trips of three days or more.

Note: *Capping accumulation of rock lobster to a maximum of 15 for three days or more and removing accumulation for finfish and the two main shellfish species can be implemented by a regulation change to the current amateur fishing defence provisions.*

Recommended restrictions on amateur fishing methods within the Fiordland area

- No cod pots inside the habitat lines of any fiord.
- Rock lobster pots limited to 3/boat.
- Dahn lines limited to 2/boat and 5 hooks per line.
- No scallop dredges.
- No set nets.
- Number six (6/0 Kahle) or larger hooks to be used for blue cod (non regulatory measure).

Recommended commercial rock lobster pot/coff pot storage

- No rock lobster pot/coff pot storage within the china shops (see below for definition).
- Rock lobster pot/coff pot storage provided for within specified parts of the representative areas (see below for definition).
- Rock lobster pot/coff pot storage elsewhere to conform to a code of practice developed by the CRA8 Management Committee.

Values of special significance

To ensure the ongoing integrity of areas, habitats and communities of special significance within Fiordland's marine environment the Guardians adopted two distinctly different types of values:

- ***China shops***

  China shops are small discrete areas that are outstanding for the abundance and/or diversity of animal or mixed animal and plant communities or for the abundance of particular animal species. Communities associated with a wide variety of habitats in a confined area may also qualify. On the basis of local knowledge and the best available information, 23 areas were identified from Bligh Sound to Preservation Inlet. Collectively, these areas support a wide range of special features and values. Proposed management measures are based on particular values and whether these are under threat from existing or future activities.

  For instance, within Preservation Inlet, the Narrows features an outstanding abundance of sea pens mixed with scallops on the sand, holothurians, red coral and white brachiopods. Measures proposed to protect this china shop include: creating a no take area for scallops by preventing dredging and removing diver harvesting, creating a no anchoring zone, ensuring rock lobster pots are not stored in the area and developing a code of practice for the site.

- ***Representative areas/fiords***

  Representative areas/fiords contain a range of habitats, communities and diversity that represent Fiordland's marine environment. The Guardians and their advisers identified seven areas that represent estuarine, inside fiord and fiord entrance habitats, including one entire fiord system, four entire fiord arms and two other substantial areas. As well as being classified as representative, three of the seven areas, Sutherland Sound, Wet Jacket Arm and Long Sound, have been regarded as distinctive in their own right since the early 1990s.

Collectively, these seven areas support significant values from both a national and international perspective.

The primary purpose of identifying representative areas is to ensure that community structure and biodiversity in these areas is not unduly compromised by human activity. Conserving biodiversity is the purpose of the marine reserves' legislation currently being revised. Accordingly the Guardians have given serious consideration to the use of this tool. However, decisions must be contingent on the final form of the revised legislation because biodiversity and other special values that are vulnerable to non-fishing recreational activities may be adversely affected if those activities are not managed conservatively. Until the legislation is finalised the ability to conservatively manage these non fishing recreational activities remains unclear. What is clear is that fishing will be removed from these areas. Accordingly, the accommodation of kaitiakitanga is critical given that customary fishing rights will possibly be extinguished and a management role for Ngai Tahu Whanui (customary), within these areas is uncertain.

Table 3 – Summary of Specific Recommendations for Values of Special Significance

Fiord	China shops*	Representative areas	Possible mechanism**
Sutherland Sound		Entire Sound	Marine reserve
Bligh Sound	• Turn Point • Clio Rocks	Turn Pt - Clio Rocks	Marine reserve
George Sound	• South side of Cinch Cove		RMA/ Coastal Plan
Caswell Sound	• Hansard Point		RMA / Coastal Plan
Charles Sound	• Gold Arm • Emelius Arm	Entire Gold Arm	- Marine reserve - RMA/ Coastal Plan
Bradshaw Sound	• Gaer Arm • Precipice Cove	Entire Gaer Arm	- Marine reserve - RMA/ Coastal Plan
Doubtful Sound	• Common Head • South wall between First and Crooked Arms • Tricky Cove • South end, Elizabeth Island • South of Lady Alice Falls • Opposite Hall Arm • Rolla Island • Brigg Point	Te Awaatu Channel { { { { { { {	- Review - RMA / Coastal Plan - RMA / Coastal Plan - RMA / Coastal Plan These five sites within one marine reserve

Fiord	China shops*	Representative areas	Possible mechanism**
Breaksea Sound	• Wall before First Cove • Vancouver Arm		- RMA / Coastal Plan - RMA / Coastal Plan
Archeron Passage	• Reef off Wet Jacket Arm	Entire Wet Jacket Arm	Marine reserve
Dusky Sound	• Cook Channel, Long Island • Nine Fathom Passage, Cooper Island	Area inside Five Fingers Peninsula	- Marine reserve - RMA / Coastal Plan - RMA / Coastal Plan
Chalky Inlet	• Edwardson Sound		RMA / Coastal Plan
Preservation Inlet	• The Narrows	Entire Long Sound	Marine reserve

* Specific china shop and representative area locations are shown on Figures 6 -18.

** Final recommendations about the suitability of these management mechanisms (marine reserves and the RMA) to protect identified special values will be made once the detail of statutory provisions is clarified.

Note: *The Guardians also recommend a code of practice common to all the china shops and representative areas as well as individual codes tailored to areas that warrant special attention.*

Risks to the Marine Environment

An initial analysis revealed bioinvasion, pollution, physical damage, altered flow dynamics, and the impact of increasing access (people) on wilderness values and expectations of visitors, as potential risks to Fiordland's fisheries and marine environment. To identify the issues that pose serious threats, the Guardians considered causal factors and the adequacy of current management practices to control these. Agreement that an issue required attention resulted in an assessment of what was needed and what role the Guardians could play:

➢ *Bioinvasion*

Bioinvasion is considered to be one of the most serious threats to Fiordland's marine environment. Unwanted marine organisms could be introduced from vessel hulls, ballast water and equipment. The development of codes of practice for hull cleaning and the exchange of ballast by MFish, Environment Southland and the Guardians are proposed. The group also anticipates local participation in both risk surveillance and a response should organisms be detected.

Specific recommendations relating to bioinvasion

1. *Ships' hulls*

Adopt the following code of practice:

- no cleaning hulls below water line and running gear within the fiords;
- cleaning on shore must occur above the high tide mark and ensure that no fouling material or contaminated water could re-enter the sea;
- all vessels/structures intending to temporarily reside in the fiords for more than 24 hours to have their hulls inspected for *Undaria* and other unwanted organisms. And any detected unwanted organisms to be removed from the vessel/structure and disposed of on land;
- all vessels/structures intending to permanently moor in the fiords to be cleaned and anti fouled before being transported to the fiords.

2. *Ballast water*

- The development of a voluntary practice that no foreign ballast water - regardless of whether it has been exchanged on route to New Zealand - is to be discharged into the fiords. This practice will need to include the caveat that compliance with this practice must be consistent with the safety of the crew and the vessel.
- The development of a voluntary practice that no domestic ballast water is to be discharged into the fiords. This practice will also need to include the caveat that compliance with this practice must be consistent with the safety of the crew and the vessel.

3. *Minimising the risk of bioinvasion in Fiordland*

- A special task force involving the MFish Biosecurity Group, Environment Southland and the Guardians is required to develop a targeted plan specifically for the Fiordland situation.
- A risk surveillance network for exotic marine pests needs to be established with educational and identification material provided by MFish's Biosecurity Group.
- To be properly prepared, a ready reaction response plan should be developed in case an exotic marine pest is detected.

➢ *Pollution*

Pollution includes oil spills and the disposal of sewage and rubbish into the Fiordland marine environment. There are management controls/contingency plans in place for each of these potential pollutants. However the controls are not necessarily comprehensive. For instance, Environment Southland has control over sewage disposal from charter boats but not currently for private boats or yachts. To combat the rubbish issue a combined approach between the agencies involved and those represented on the Guardians is supported.

Specific recommendations relating to pollution

1. *Oil spills*

   - Support current Environment Southland and Marine Safety Authority Oil Spill Response Management Plans by providing logistical assistance.
   - Assist with the development of an Oil Spill Contingency Plan for Fiordland by supplying information.

2. *Sewage*

   - Sewage disposal from private boats and yachts does not currently require a resource consent. Whereas informing all groups about ways to minimise the impact of discharging sewage into the fiord environment is important, the priority must rest with private boats and yachts at this time.
   - Future plans for managing sewage treatment and disposal from land adjoining the fiords needs to be documented in the Fiordland National Park Management Plan.

3. *Rubbish/plastics*

   - Advocate the "take it in - bring it out" philosophy.
   - Support the major Fiordland beach and anchorage clean up initiative involving charter operators, commercial fishers, Environment Southland, DoC, volunteers and sponsors.
   - Inform and educate users of the marine environment about acceptable rubbish disposal practices.

➢ *Physical damage*

Physical damage includes the impacts of structures, such as wharves and moorings, and landslips. Structures are controlled by resource consents. In contrast, landslips are a natural event, but the number and frequency of slips can be accelerated by the spread of possums and increase in deer numbers. The associated potential for destabilising the fiord slopes is a risk with serious long-term implications. Information about the distribution of possums and presence of deer is something the Guardians and local community can provide to DoC to assist with work programming and priorities.

Specific recommendations relating to physical damage

1. *Structures*

   - Make submissions on resource consent applications that are not considered to be in the best interests of Fiordland's fisheries and marine environment.
   - Provide information to Environment Southland over these issues.

2. *Anchoring*

   - To avoid damage to the environment, a guide to anchorages in Fiordland is needed that will build on Environment Southland's list of anchorages contained in the Southland Coastal Plan. Such a guide could also be a vehicle for providing helpful information such as the most effective ways to anchor in different situations and advice about conditions likely to be experienced in Fiordland.

3. *Land slips*

   - Provide local knowledge about the spread of possums and deer in high densities to DoC so that decisions about priority areas for control are better informed.

➢ *Altered flow dynamics*

Altered flow dynamicsis solely to do with the input of freshwater from the Manapouri power scheme into Doubtful Sound. To address the issue of depleted fish stocks it is important to know whether the altered flow regime has contributed to the situation or whether fishing pressure alone is responsible. The Guardians are anticipating that current research will provide more information about this situation.

Specific recommendation relating to altered flow dynamics

- Support research that identifies the factors that are contributing to the depleted state of harvested fish stocks in Doubtful Sound.

➢ *Increasing numbers of visitors*

Increasing numbers of visitors are beginning to adversely affect wilderness values in the most accessible fiords. Improved access also means expanded fishing opportunities throughout Fiordland and an increase in fishing pressure. More people mean more rubbish, more sewage and more servicing facilities. Unless these issues can be effectively managed in the longer term, Fiordland's fisheries and marine environment are at risk. The Guardians support initiatives to address the issue of increasing access. Local knowledge held by members and associated groups will be vital if practical solutions are to be found.

Specific recommendations relating to increasing numbers of visitors

- Take an effects-based approach to increased access and visitor numbers by managing risks to the marine environment and fishing activities and by ensuring special values are looked after as the Guardians' advocate in this strategy.
- Support initiatives to manage the effects of all users including kayaks, private boats and yachts.
- Provide local knowledge about the feasibility of controlling visitor numbers directly.

Expressing Kaitiakitanga

Ngäi Tahu Whanui has a long and significant association with Fiordland as is documented in the Statutory Acknowledgment for Te Mimi o Tu Te Rakiwhanoa (Fiordland Coastal Marine Area) in the Ngäi Tahu Claims Settlement Act 1998. Long-standing protocols exist for exercising kaitiakitanga (stewardship) over the natural resources in the area. Kaitiakitanga is both a privilege and a serious obligation for the kaitiaki rununga of the area. The Oraka/Aparima runanga is the kaitiaki runanga for Fiordland. An active involvement in managing Fiordland's fisheries and marine environment by the Oraka/Aparima rununga, the other three Murihiku rununga (Awarua, Waihopai and Hokonui) and the Makaawhio rununga, supported by the tribe, is clearly an appropriate way for kaitiakitanga to be expressed. A variety of statutory mechanisms exist within the Fisheries Act that confers fisheries management responsibilities over areas of the coastline on tangata whenua. Section 186B (temporary closures), mataitai and taiapure (local fisheries) are such mechanisms. Section 186B closures are recommended for blue cod in both Milford and Doubtful Sounds, a mataitai application covering part of the southern coast was lodged some time ago and further consideration is being given to the place of taiapure in Fiordland.

Implementing the Strategy

This strategy contains a package of management measures that have been negotiated by the Guardians. It represents a balance of gifts and gains reached between commercial and recreational fishers, Ngäi Tahu Whanui (customary), charter operators and environmental and community interests, and is endorsed by representatives of these groups on the Guardians.

Collectively, the provisions in the package provide a level of security for the whole of the marine environment that the individual components might not indicate. Considered in total, some provisions apply across the entire marine environment whereas others are specific to individual fiords. Accordingly every fiord has it's own particular package of management measures.

Furthermore, every provision fits into the Marine Protected Areas toolbox and also contributes to conserving biodiversity. The package could be seen as a local working example of OceansPolicy - a holistic approach to managing a highly valued part of our marine environment by a community/agency group that crosses agency and statutory boundaries.

All aspects of the package can be implemented using a combination of existing statutory mechanisms and non statutory activities. However, the need for some form of overarching co-ordination is clear, given the number of statutory provisions and agencies that are involved in implementing the strategy. Ensuring the integrity of the package during implementation is the bottom line for the Guardians.

However, legislation that confers management status on local community groups, such as the Guardians, working in the marine environment does not exist. That the group is carrying out an integrated management role, which crosses legislative and agency boundaries, sets this initiative apart.

In the absence of appropriate legislation, two possibilities for co-ordinating the entire package were identified:

1. ***Taiapure***

   Taiapure (local fisheries) is an area management fisheries management tool for coastal waters of special significance to iwi or hapu as a source of food or for spiritual/cultural reasons. Advice was sought about whether non-fisheries aspects of the strategy could be integrated under a Fiordland taiapure and wider statutory functions performed by a taiapure management committee. How the structure and functions of the management committee might impact on the expression of kaitiakitanga was also a major consideration. Legal advice received since the distribution of the draft strategy suggests that a taiapure may not be an appropriate overarching mechanism on both grounds.

2. ***Special legislation***

   Because special legislation offers flexibility, the major issue with this option is defining what needs to be incorporated. For instance, overarching legislation needs to guarantee the balance of gifts and gains that underpins the strategy, incorporate the expression of kaitiakitanga and provide for joint community/agency management. According to legal advice, this option is likely to be complex but feasible.

Specific recommendations about implementing the strategy

1. Develop special legislation that:

   - guarantees the balance of gifts and gains that underpins the strategy;
   - incorporates the expression of kaitiakitanga;
   - defines how special legislation links across the existing legislative provisions;
   - provides a framework for implementing recommendations using existing statutory mechanisms;
   - defines the establishment and statutory functions of a combined community/agency management group;
   - defines membership of the community participants according to a set of criteria that reflects the strengths of the current Guardians (local knowledge, experience and expertise);
   - defines regional co-ordinating functions and the agency/authority responsible for that role;
   - incorporates the need to adequately resource the management committee.

2. Implement recommendations using existing statutory mechanisms with agencies/authorities being responsibile for administering fisheries, conservation and resource management legislation evaluate statutory management tools recommended by the Guardians and work with the group to ensure the most appropriate and effective tools are used.

3. Implement recommendations that do not require statutory tools for Guardans/agencies/authorities or community/agency management group established by special legislation implement the recommendations throughout the strategy that do not require statutory tools.

Compliance with the Strategy

Fiordland is a very challenging environment from a compliance perspective - it is isolated, the coastline is extensive, access is limited and the weather can be unrelenting. For these reasons, high levels of voluntary compliance with the rules are critical for the success of the management regime proposed in this strategy. This will only be achieved if the changes are seen to be fair and the balance negotiated between the groups is maintained.

Given that MFish, DoC and Environment Southland have compliance responsibilities and a compliance presence in Fiordland, developing a shared approach to information, education and surveillance makes a lot of sense, although the prosecution of offences needs to be taken by each agency according to their own statutory provisions.

The Guardians and those who are frequently on the water in Fiordland can play a critical compliance support role. Educational material about voluntary aspects of the management package needs to be widely publicised. So does information about the management rules. Resources such as codes of practice, pamphlets and signs could be produced effectively by the Guardians and the agencies working together, or by the community/agency management group if that is established.

Surveillance, or the "eyes and ears" in the community and out on the water, is also a role that MFish, DoC and Environment Southland value highly. The agencies consider working with the community is the best way of covering the extensive Fiordland coastline. Support extends to providing information and giving evidence in the case of prosecutions - the type of commitment that can make the difference between a successful and unsuccessful outcome for Fiordland.

Specific compliance recommendations

1. Support the "carrot and stick" approach to compliance (encouragement to comply with the rules voluntarily combined with an effective deterrent against illegal activities) that underpins MFish, DoC and Environment South compliance activities in Fiordland by:

   - informing and educating fishers and other users about the rules in the management package (booklet explaining the package and other material);
   - being the eyes and ears on the water (surveillance);
   - supporting enforcement action (prosecution).

2. Advocate and support the design of an integrated compliance approach by MFish, DoC and Environment Southland in Fiordland to make the most effective use of limited compliance resources.

Monitoring the Performance of the Strategy

Monitoring the effectiveness of management measures is just as important as developing the management strategy itself. Selecting indicators for each component of the strategy and monitoring these will provide information on which to judge how well the strategy is performing. Ideally, baseline monitoring should take place before, or soon after the strategy is implemented. Monitoring data will provide the basis for future adjustments to the management package.

Specific monitoring recommendations

- Develop and refine indicators for fisheries, values of special significance, risks to the marine environment, expressing kaitiakitanga, and an overview of the success of the strategy.
- Evaluate how these indicators can be measured most effectively.
- Assess whether current information can provide useful baseline data.
- Advocate for the monitoring programme when the strategy is implemented.

Implementation and Beyond - What role for the Guardians?

The Guardians are demonstrating the value of combining local skills and knowledge with agency advice. This is proving to be a credible alternative to existing management approaches as the group provides a forum for the agencies to step outside their own boundaries and think about the issues collectively. The Guardians are facilitating a more holistic approach that is inclusive of the stakeholders and as a consequence the group is capable of providing oversight for the management of Fiordland's fisheries and marine environment.

Whilst a definitive list of functions the Guardians may be required to perform during and beyond implementation is not possible at present it is clear that the group's continued involvement is necessary and for a voluntary group the task will be substantial:

- ***Special legislation***

  Should the Guardians' recommendations about special legislation be adopted, developing and enacting special legislation is likely to take at least two years. Over this period the Guardians can expect to be involved in providing advice to ministers, agencies and local authorities. The wider groups represented on the Guardians will also need to be kept informed. Securing the balance of gifts and gains is the Guardians' top priority. Given that negotiations between groups have taken place over the past three years it is essential that those drafting cabinet papers and the legislation appreciate the essence of what has taken place.

- ***Implementing the package using existing statutory tools***

  If the processes for developing special legislation and implementing the recommendations by way of existing statutory tools take place concurrently (assuming that the strategy is adopted), the Guardians will be involved in a very substantial task. Supporting the package of recommendations in the strategy from application through to implementation

is in itself a major undertaking that may involve meeting the requirements of a number of different agency processes.

- ***Implementing the non statutory aspects of the strategy***

Assuming that special legislation is implemented and a combined community/agency management group established, responsibility for the following functions identified in the strategy would logically rest with this group:

- compiling codes of practice associated with a range of provisions;
- developing recommended strategies for issues such as bioinvasion and anchoring;
- identifying information needs and advocating the most effective way of acquiring the information;
- assisting with compliance and monitoring;
- producing material to inform and educate visitors and the public about Fiordland's fisheries and marine environment.

- ***Future flexibility***

The Guardians are well aware that neither Fiordland's fisheries nor the marine environment are static. Aspects of the environment and patterns of use are bound to change over time. Accordingly, management must be flexible and responsive. Whereas the balance of gifts and gains negotiated by the Guardians is right for Fiordland's fisheries and marine environment at this time, it is possible that a different balance could be appropriate at some time in the future. In other words, the balance of gifts and gains is not set in concrete but will depend on the issues, the information and goodwill among those negotiating.

1.0 About the Guardians

1.1 The Guardians' Vision

"That the quality of Fiordland's marine environment and fisheries, including the wider fishery experience, be maintained or improved for future generations to use and enjoy"

1.2 Turning the vision into reality

This Fiordland Marine Conservation Strategy represents a very significant step towards realising the Guardians' vision. The group has voluntarily devoted a very significant amount of time over a period of more than six years to gather information, identify issues, debate ideas, develop management suggestions, hold information meetings, consult the public and produce this strategy.

In the process of developing this strategy, the Guardians have produced a number of complementary publications. At the end of the first year (1996), the group launched a code of responsible fishing practices to inform and educate fishers about taking care of Fiordland's fisheries and the marine environment. The code has been in demand ever since and remains an important up to date resource. In 1999, the group published a characterisation report together with the Ministry of Fisheries that brought together all the available information about Fiordland's fisheries. Then in 2001, a comprehensive annotated bibliography was produced with the Department of Conservation including relevant research and reports about Fiordland's fisheries and marine environment. Each of these publications makes an important contribution to achieving the Guardians' vision.

1.3 Who are the Guardians?

The Guardians formed in December 1995 when groups that are actively involved in Fiordland's fisheries selected members to join the group. The selection was based on knowledge and experience of Fiordland's fisheries and the marine environment, a commitment to looking after the resource, a willingness to work with other interests and the time to invest in the group's operations. The original members are listed in the 1999 characterisation report.

Commercial fisheries organisations (rock lobster, paua, and wet fish), the Southland Recreational Fisheries Association (fishing and diving), charter operators (company and individually operated charter boats) and Ngai Tahu from Murihiku and Kati Waewae Runanga, selected members who were available and able to represent their views on the Guardians. John Steffens was appointed as Chairperson at the inaugural meeting and has performed that role since then.

Turnover of members has been low and replacements have been selected according to the original criteria, with emphasis on local knowledge and continuity.

Following the broadening of the Guardians' mandate to include the marine environment in June 2000, environmental interests were included on the group. The Department of Conservation selected Steve Wing, a marine scientist, on the basis of criteria submitted by the Guardians. Environmental representation was increased in 2002, when Forest and Bird approved the appointment of Alan Mark to the Guardians. Ian Buick, a helicopter operator, joined the charter operator representatives, and local community interests' are now represented on the group by Irene Barnes. In addition to that position, a number of other members have wider community interests and hold positions on other local community organisations. The Guardians all live within the Fiordland or Southland/Otago region.

Although not members of the group, Ken Grange, NIWA, and Chris Paulin, Te Papa, have generously provided support and advice to the Guardians about Fiordland's marine environment.

Laurel Teirney is the group's facilitator and documents the Guardians' outputs.

Collectively, the group holds a wealth of knowledge and experience about Fiordland's fisheries and marine environment. Most members have gained this by working in the area, some for many years. Valuable insights have been provided by members with a long family history in Fiordland and these have been particularly helpful in developing the strategy.

Without exception, members care deeply about what happens to Fiordland's fisheries and marine environment. A special working relationship has evolved within the group on the basis of this common bond - a relationship that has been fundamental to the group's cohesion whilst working through potentially contentious issues and formulating agreed positions and strategies.

1.4 Why was the group formed?

Concern about a number of issues affecting Fiordland's fisheries and marine environment and confidence that these could best be resolved at the local level were primary motivating factors in the Guardians' formation. This initiative was seen as both necessary and timely given the changes taking place. For Fiordland, the group initially believed a fence was needed at "the top of the cliff". However, as more information became available, it was clear that action was required in the short term to turn around undesirable changes taking place.

The following shared views are central to the group's undertaking:

- concern about rapidly improving fishing access into Fiordland and the potential impact of this on the sustainability of the fish stocks;

- awareness that the fishing experience available in Fiordland is outstanding and needs to be properly looked after to be retained in the longer term. Where else in New Zealand can fishing be combined with spectacular scenery both above and below water, wilderness, historic sites, hunting, tramping, kayaking, photography and diving?

- recognition that the inside fiord ecosystem is of special significance and warrants a conservative and responsible approach from commercial, recreational and customary fishing interests;

- acceptance that certain features warrant protection from human influences;

- confidence that both fishing and caring for the fiord ecosystem can be jointly accommodated;

- belief that management by the local community (and in particular those who have an active involvement in the fiords) supported by the relevant agencies, provides the best chance of success;

- expectation that solutions are best implemented under existing New Zealand legislative provisions and that some form of overarching mechanism is needed to ensure the integrity of the management package.

1.5 Who provides support and advice?

1.5.1 *Independent assessor*

Ken Grange holds the position of independent assessor. From his ground breaking research into Fiordland's marine communities in the 1980s and 1990s he brings an in depth understanding and appreciation of the marine environment. Ken has provided the group with advice, attended workshops and information meetings, and peer reviewed the draft strategy.

1.5.2 *Agency support and advice*

The Ministry of Fisheries (MFish) has provided support and advice about fisheries issues since the formation of the Guardians in 1995. Until recently, Tony Brett and Stephen Logie, respectively from Fisheries Management (Dunedin) and Compliance (Invercargill), attended group meetings in an ex officio capacity. As the group has worked through the process of developing the strategy, resources have been made available to assist with this task.

Ngäi Tahu Whanui[2] (Kai Arahi) Gail Thompson and Tamai Sinclair, respectively from Murihiku and Te Tai Poutini provided advice on customary fisheries matters from 2000/02 when the Kai Arahi programme was discontinued. Now, support from Te Runanga o Ngai Tahu is provided by Nigel Scott from Christchurch.

Department of Conservation (DoC) representative Allan Munn provided support and advice about conservation matters in an ex officio capacity from June 2000 - December 2002. Murray Willans has since taken his place. Lou Sanson, the Southland Conservator provided encouragement and supported the group's efforts by making resources available in a variety of ways during the development of the draft. Kevin O'Connor, the current Conservator, is continuing in that role.

[2] Ngai Tahu Whanui is defined under the Te Runanga o Ngai Tahu Act 1996 as the primary hapu of Ngai Tahu, Kati Mamoe and Waitaha.

Environment Southland (ES) representative Ken Swinney has provided invaluable support and advice about resource management issues and the process of developing the strategy in an ex officio capacity since June 2000. More recently, Mike Pearson has also contributed his advice and support. Ted Loose, Chairman of ES, has attended meetings and provided ongoing encouragement. ES has played an increasingly valuable role, assisting with publishing and distributing the draft strategy, administering part of the submission process and co-ordinating the publication of the final strategy.

Ministry for the Environment (MfE) has been represented over the past year by Alisdair Hutchison, whose support and wise counsel has benefited the Guardians significantly. Similarly, Jenny Whyte has made an important contribution.

The combination of Ngäi Tahu Whanui, recreational and commercial fishers, charter operators and environmental, science and community interests working together with ES, MfE, DoC and MFish, has proved to be particularly potent.

Our experience shows that effective solutions for issues within a local area are best developed on the basis of shared local knowledge supported by targeted research and agency advice.

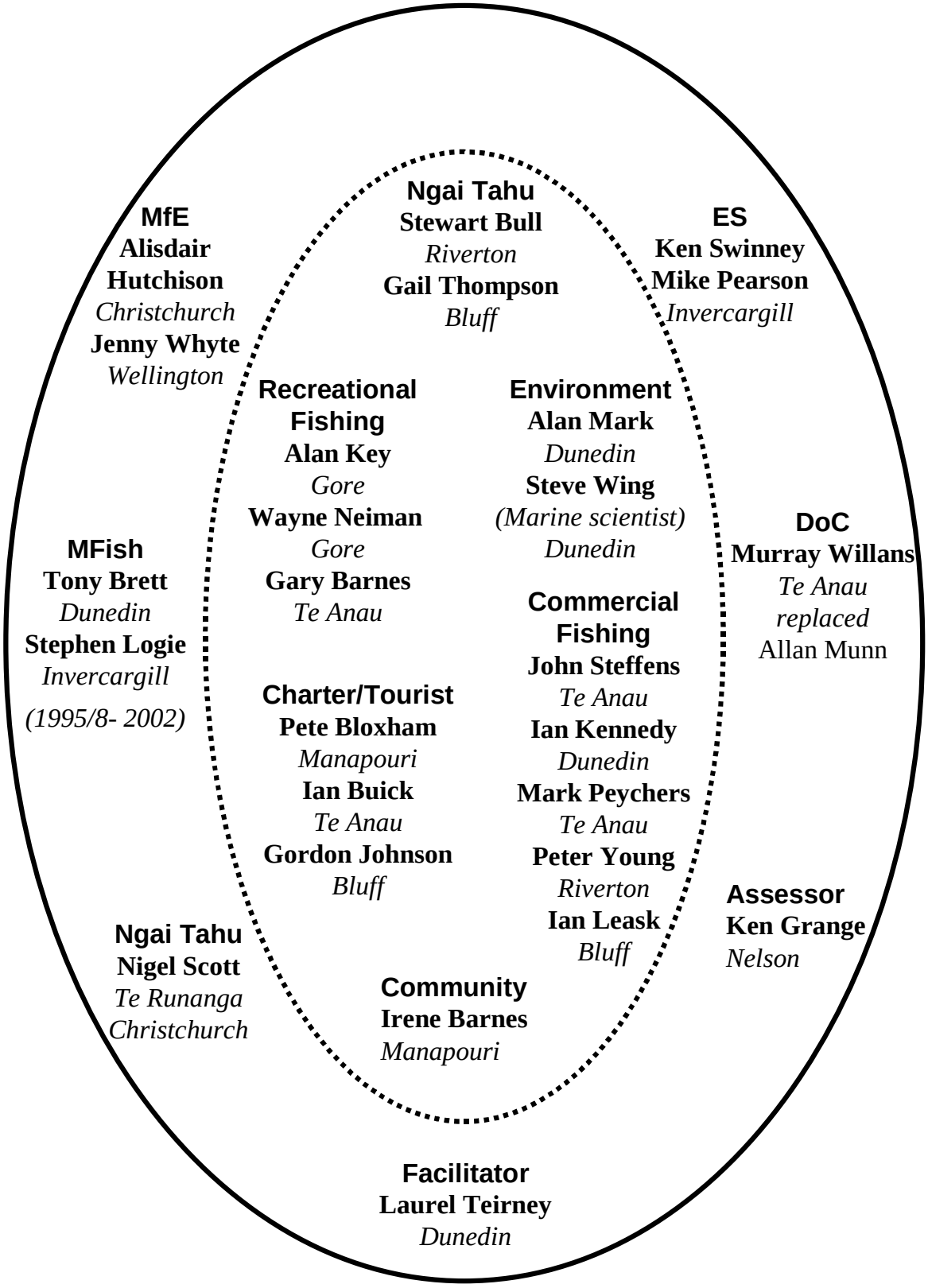
1.5.3 *Support for the integrated management strategy approach*

Ministry for Environment (MfE) awarded the Guardians a grant from the Minister for the Environment's Sustainable Management Fund in June 2000 to develop an integrated management strategy for Fiordland's fisheries and marine environment. In making the application, the Guardians acknowledged the need to develop a wider integrated approach to successfully look after the range of values in the Fiordland marine environment. In granting funds, MfE provided the Guardians with an opportunity to show how such an approach might work in the marine environment. The group is very grateful for the MfE's generosity without which this project would not have been possible.

Politicians: The Ministers of Fisheries, Environment, and Conservation have been kept informed about progress and all have expressed support for this initiative. In particular, the Hon Pete Hodgson, Minister of Fisheries, has shown special interest and provided ongoing encouragement for our approach. The Guardians were honoured that Hon Pete Hodgson, Hon Marian Hobbs, Minister for the Environment, Mayor Frana Cardno and Chaiman Ted Loose attended the launch of the draft strategy in October 2002.

Local and other interested MPs have kept up with progress, as have local politicians, all of whom are becoming more interested as the Guardians make progress.

THE GUARDIANS/ADVISORY GROUP - 2003



2.0 Developing the Strategy

2.1 The Process

Developing the Fiordland Marine Conservation Strategy has involved the Guardians working to a defined process with the following steps:

- defining a vision
- defining the Fiordland marine area of interest
- defining a set of objectives
- gathering information
- identifying and grouping issues

For each issue:

- determining information needs
- acquiring and documenting additional information
- analysing information and identifying patterns and trends
- deciding on management objectives
- designing frameworks to guide best solutions
- selecting the most appropriate management mechanisms
- informing and inviting feedback from eight meetings/hui with groups around the region who are represented on the Guardians
- adjusting suggested management measures

and then:

- compiling, releasing and distributing the draft strategy for consultation
- recording, summarising and analysing submissions
- Guardians' decisions about submissions incorporated to finalise the strategy
- strategy submitted for approval and implementation to MfE, the Ministers of Fisheries, Environment and Conservation, and the relevant agencies.

2.2 Defining the Fiordland marine area of interest

The marine area covered by this strategy extends from Cascade Point in the north to the Waiau River in the south. The seaward boundary is flexible, depending on the distribution of species of interest and associated Quota Management Area (QMA) boundaries. In reality, the group has focused primarily on the fiords and inshore coastal area. Migratory pelagic fish species (currently subject to proposals to be introduced to the Quota Management System) and species for which there appear to be few concerns have been discussed but not considered further.

2.3 Gathering information

Developing a comprehensive picture of Fiordland's fisheries and marine environment has been one of the Guardians' top priorities. Accordingly a strong emphasis on information has been incorporated in every aspect of the strategy. Whether based on

memory, local knowledge, observation, survey or research, every source of information has contributed in a complementary way to a better understanding of the issues and to more robust management suggestions.

The importance of basing the strategy on quality information is reflected in the Guardian's key object:

Key Objective

Take a pro-active role in identifying and advocating research and information needs to obtain the necessary information for advancing the Guardians' objectives.

Initially, the Guardians found a considerable amount of fisheries information was available at the entire Fiordland level. Information about species and communities at specific sites within the fiords was also available. What was missing was information about habitats, communities and fisheries at the individual fiord level.

To fill this gap, members of the group have shared their knowledge, targeted groups have been interviewed, surveys have been conducted and research advocated. The information collected has provided the Guardians with a very substantial data base. Patterns and trends that have been identified form the basis on which this strategy has been developed.

Following is a summary of the information the Guardians have collected themselves, compiled or advocated for over the past six years:

2.3.1 *Fiordland's fisheries*

- Compiled Maori and early European association with Fiordland.
- Recorded recent history (1900 onwards) of commercial fishing from interviews with knowledgable locals whose families have been associated with Fiordland for many years.
- Recorded and mapped Guardians' knowledge about the distribution of harvested species and fishing pressure. Collectively, members of the group hold more than 250 years of knowledge about Fiordland's marine environment.
- Gathered available information about the Fiordland marine habitat and biology of each fish species.
- Recorded details of the commercial fishery for each species, including management provisions. *Note:* The CRA8 Management Committee is committed to an extensive ongoing rock lobster research programme in Fiordland. The results of this, and of paua research advocated by the NZ Paua Management Company, are available to the Guardians.
- Surveyed recreational fishing patterns by questionnaire.
- Recorded details of the recreational fishery for each species, including management provisions.
- Surveyed charter boat fishing patterns by interviewing charter operators.
- Described customary fisheries management provisions including customary fishing authorisations, mataitai and taiapure.

- Successfully advocated research into recreational fishing patterns and harvest (methods of identifying recreational fishers were not effective in the Fiordland situation which meant there was an inadequate response to analyse fishing patterns).
- Successfully advocated research into recreational fishing patterns and harvest in Milford and Doubtful Sounds (current).
- Successfully advocated research into charter boat fishing patterns and harvests (current).
- Surveyed knowledgable locals by questionnaire about commercial and recreational fishing patterns, species harvested and state of species by fiord.

2.3.2 *Marine habitats, species and communities*

- Successfully advocated research into methods of studying blue cod.
- Successfully advocated research into the movement and relative abundance of blue cod within and between fiords (results are presented in Section 3.3.2).
- Gathered knowledge about special values and areas by holding a workshop with experienced Fiordland researchers Chris Paulin and Ken Grange.
- Supported the development of a Geographic Information System (GIS) to construct a picture of the Fiordland marine environment (a major project currently being conducted by Steve Wing (a member of the Guardians), and others.
- Compiled an annotated bibliography of references to Fiordland's fisheries and marine environment.

2.3.3 *Publications*

Much of the information listed above is documented in the following publications:

Beneath the Reflections - A Characterisation of Fiordland's Fisheries. Compiled by the Guardians of Fiordland's Fisheries. 1999 120p.

Beneath the Reflections - Fiordland's Fisheries and the Marine Environment: A Bibliography. Compiled by Lisa Maria, Department of Conservation for the Guardians of Fiordland's Fisheries. 2001 74p.

Beneath the Reflections - Caring for Fiordland's Fisheries. A Code of Responsible Fishing Practices produced jointly by the Guardians of Fiordland's Fisheries and the Ministry of Fisheries. 1996 (pamphlet).

2.4 Defining "special nature"

In the process of developing the Guardians' vision and key objectives it became clear that the special nature of Fiordland's marine environment was going to be an integral part of every component of the strategy. Accordingly, the group defined special nature in terms of the Guardians' interest in both land-based features and the marine environment.

Special nature refers to*:*

> *"That which is uniquely Fiordland, from the mountain tops to the sea bed".*

The Guardians have a particular interest in two aspects of the fiord environment; the outstanding landscape features and the unique marine environment.

The special nature of *Fiordland's landscape* can be described by:

> "The combination of sheer-sided snow capped mountains, hanging valleys, impressive waterfalls, uninterrupted native forest extending to the water's edge and extensive sheltered waterways. Furthermore, the very scale of the landscape enhances the sense of wilderness that is an integral part of fishing in Fiordland and one that sets Fiordland apart from the rest of the country".

These landscape features would only be associated with management action on the part of the Guardians if specific land-based issues had the potential to adversely impact the marine environment or the fishing experience.

The special nature of *Fiordland's marine environment* can be expressed by:

> "At the individual fiord level - drowned u-shaped glacial valleys, sills separating the fiords from the open coast, the freshwater layer, estuarine circulation, deepwater emergence, a band of unusual wall communities and endemic species of special interest, and finally the deep floor of the glacier-carved fiord. At an ecosystem level, what sets Fiordland's marine environment apart, both within New Zealand and globally, is the diversity of communities represented over a dramatically compressed gradient. It is not unusual to find estuarine, fiord, outer reef/kelp forest, open water pelagic and deepwater communities represented over a distance as little as 10km. The proximity of the continental shelf to the coastline defines the seaward end of the gradient".

Not surprisingly, all aspects of Fiordland's marine environment are of direct relevance to the Guardians of Fiordland's Fisheries.

2.5 Understanding fiord habitats

The importance of understanding how this set of unusual features dictates the nature of plant and animal communities and fisheries was recognised. Since then, information gathering and research have shed increasing light on the subject. Two distinct habitat types can be identified - habitats inside the fiords and habitats at the fiord entrance/outer coast. Current studies are showing how the communities associated with each habitat type differ and what the implications might be for fisheries, special values and risks to the environment.

2.5.1 *Inside fiord habitats*

More than seven metres of rain fall in Fiordland most years. This runs off into the fiords carrying detritus and humic material from the forest. The result is a stained freshwater layer that floats on top of the salt water. As the freshwater flows out to sea, it causes a weak counter current of salt water from the ocean to flow over the sill at the entrance and into the fiord - a phenomenon called estuarine circulation.

The stained freshwater surface layer limits light penetration and inhibits the growth of kelps that are the energy source for productive outer coast communities. Despite algal growth in the intertidal zone, there is an absence of significant kelp communities further down, and animals that normally live at depth in the ocean have come to dominate the fiord wall communities from the surface to a depth of about 40 metres. Called "deepwater emergence", this phenomenon has resulted in an abundance and diversity of animals that would not normally be seen at these depths, though whether wall species are self sustaining inside the fiords or sustained by ongoing recruitment from the ocean is not known.

The stained freshwater layer not only limits kelp, it also has the potential to limit the growth of phytoplankton that can be an important energy source for marine communities. The possibility that primary production is limited inside the fiords raises the question of the nature of the energy source. Recent studies suggest that material entering the fiords from the forested catchments may play a role. Fallen trees, detritus and plant and animal material associated with the forest floor are regularly delivered into the fiords. Terrestrial energy sources, such as these are not comparable with ocean kelp based energy sources.

The combination of limited plant based energy inputs and land based energy sources suggests that productivity within the fiords is likely to be constrained. This is supported by studies that have found species living within the communities inside the fiords are generally sessile, slow growing and long lived. Stable communities with a low turn over of the main species generally indicate low productivity. However, there are still many unknowns about the inside fiord habitats.

Recruitment of fish species inside the fiords can take place directly from spawning or indirectly from passive transport of eggs or larvae over the sill in the incoming current. Once inside, the young do not find a very hospitable environment. There is the freshwater layer and the many stinging, biting animals of the wall communities to avoid. And then there is the issue of what to eat.

There is growing evidence that certain fish and shellfish species such as blue cod and kina that live inside the fiords are slower growing than the same species found at the entrances to the fiords. Given the nature of the inside fiord habitats these species are unlikely to be very productive. Consequently the fish stocks are unable to sustain a high level of harvesting pressure. Furthermore, it appears that stocks of these species from the inner fiords may be genetically distinct from stocks living outside.

As research on genetic structuring of populations and differentiation of the same species continues, further management implications will become clearer. In the meantime, the question of whether certain species move between fiords and the outer coast is now being investigated. The issue of movement is fundamental to managing fish stocks inside the fiords. If movement does not take place and some individuals of a species live only inside the fiords, management measures must be more conservative to ensure sustainability. Recent studies conducted in Dusky Sound revealed that blue cod movement is negligible from the coast to the head of the fiord.

2.5.2 *Transition from inside fiord to entrance/outer coast habitats*

In the transition zone, slow growing, long lived animal-dominated communities give way to kelp-based communities as the ocean influence penetrates into the fiord.

In some fiords such as Bligh Sound, the transition can be clearly defined between these two different types of habitat/communities. In other fiords such as Dagg Sound, the transition is not so clearly defined because ocean influences penetrate well into the fiord. Whereas the transition between these two habitat types takes place at the entrance of some fiords it occurs well inside other fiords. For instance, the topography of the southern fiords means that inner-fiord habitat is found further towards the head of these sounds than in the northern fiords.

2.5.3 *Outer coast habitats*

The outer Fiordland coast is dominated by kelp based communities. Such communities are typical of outer coastal habitats along the southern coastline. To discern whether there are differences between Fiordland's outer coast communities and those along other parts of the southern coastline requires a detailed study of biodiversity patterns.

2.6 Identifying issues

To identify issues affecting Fiordland's fisheries and marine environment a schematic diagram was constructed where natural features were placed around the inside of the oval and the influences that could impact on each of these were aligned along the outside (Figure 2). This was a useful way for the Guardians to identify and group issues. Relevant legislation and associated agencies could also be easily identified. The diagram proved helpful in discussions with both DoC and ES, when common interests were initially defined and each agency agreed to participate.

Against this background the Guardians brainstormed a list of issues that needed to be addressed if progress was to be made towards achieving the group's vision for Fiordland's fisheries and marine environment. Issues were grouped as follows:

- Fisheries
- Values of special significance
- Risks to natural values (human generated)
- Expressing kaitiakitanga

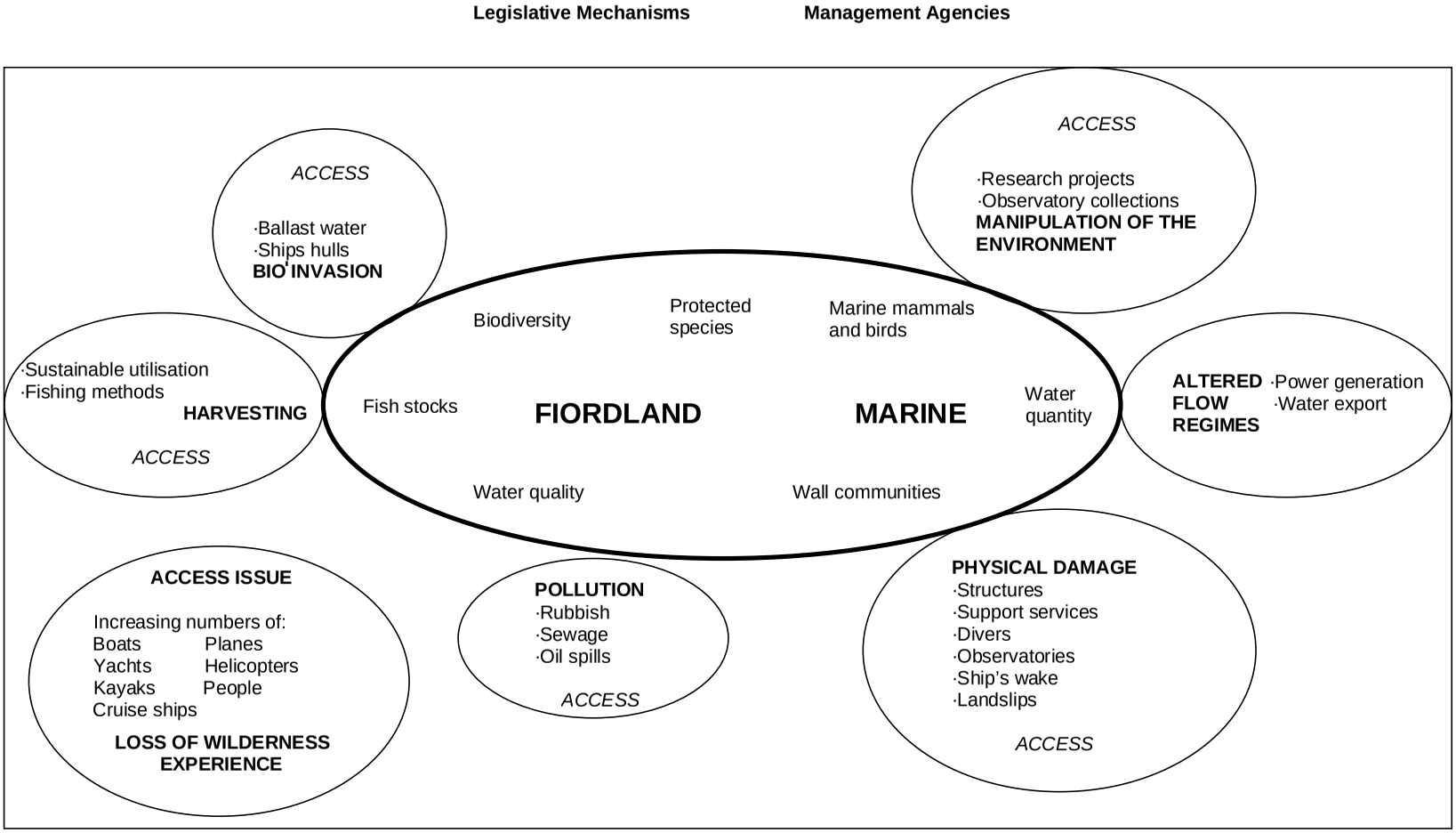
The Guardians defined key objectives for each group of issues to provide guidance and ensure a consistent approach was maintained through debate and decision-making. Subsequently, the following categories were identified that also warranted objectives.

- Implementing the strategy
- Compliance of the strategy
- Monitoring the performance of the strategy

2.7 A holistic approach

The initial priority was the fisheries component of the strategy. However, over the past three years work has proceeded concurrently on all four components. Given the interaction between components they cannot be treated in isolation. Each component is inextricably linked to the others and a change that affects one area will impact on the rest. For instance, certain risks such as the introduction of an unwanted species from the hull of a vessel could impact on the values of special significance, on fish stocks and fisheries and on kaitiakitanga. The Guardians recognised that a holistic approach was required because every aspect of the marine environment is part of an integrated whole and the variety of human influences exerted on this environment should be considered collectively rather than by individual influence.

FIGURE2 IDENTIFICATION OF ISSUES AFFECTING FIORDLAND'S FISHERIES AND MARINE ENVIRONMENT



3.0 Fisheries

Key Objectives

- **Ensure the sustainable utilisation of the finite fisheries resources, having regard to the special nature of the fiord environment.**
- **Prevent uncontrolled expansion of effort/harvest by all groups.**
- **Ensure that the rights of tangata whenua, recreational, charter operators, commercial and other user groups are identified and recognised and that these groups are involved in fisheries management decisions including access to the fisheries resource.**
- **Support overarching fisheries management frameworks.**
- **Encourage voluntary compliance with the rules and reinforce the view that non-compliance is unacceptable behaviour.**
- **Adopt a cautious and responsible approach to proposals for new developments.**

3.1 Top priority - local depletion

The Guardians considered addressing local and serial depletion within the fiords was the top priority fisheries issue within Fiordland.

Local depletion is defined as:

> "*the localised decrease in abundance of a species due to over exploitation or changes to the environment*".

Serial depletion is when:

> *"a decrease in abundance of a species occurs in one local area and then extends sequentially to adjoining or wider areas*".

A localised area may extend from part of a fiord to an entire fiord, whereas an extension from one fiord to another would be regarded as an adjoining or wider area.

It was generally acknowledged that certain harvested fish stocks in Milford and Doubtful Sounds, the two most accessible fiords, were subject to local depletion. The uncertainty was the extent to which serial depletion might be taking place in other fiords and along the outer coast and what measures could be taken to prevent this from happening.

3.2 Information by fiord

Information documented in *Beneath the Reflections: A Characterisation of Fiordland's Fisheries*, includes detail about fish stocks and fisheries at the entire Fiordland level. As well as providing an important overview of Fiordland's fisheries, the report also contains a general summary of the characteristics of each fiord and what information exists about individual fiords. Despite the inside fiord habitats being recognised as distinct from other marine habitats around the rest of the coast, the fish stocks and fisheries within the fiords have rarely been studied. Therefore the detail required to evaluate the state of fish stocks and fisheries within individual fiords was not available.

Accordingly, research needs were identified and advocated by the group. Projects that are currently being conducted include:

- abundance and movement patterns of blue cod within and between fiords;
- fishing patterns and harvest of recreational fishers from private boats in Milford and Doubtful Sounds;
- fishing patterns and harvest of recreational fishers from charter boats for all the fiords;
- detailed description of fiord habitats developed by building a Geographic Information System.

At the same time, the Guardians resolved to compile what was known about fisheries within the fiords on the basis of their own knowledge and experience and that of informed members from their wider groups. Tapping into this substantial and diverse source of information was considered to be the best, and indeed the only way of determining the state of fish stocks and fisheries and developing an appropriate management approach.

3.2.1 *Gathering the information*

Between September 2001-December 2002, the Guardians went through a process of gathering information at the individual fiord level. First, members provided information about the fisheries in Milford and Doubtful Sounds, including fishing patterns by harvesting group, for blue cod, rock lobster, groper, paua and scallops. From first hand experience within the group the state of each species was evaluated, as were trends in harvesting pressure and accessibility.

From the experience of gathering information about Milford and Doubtful Sounds a questionnaire was designed to collect the same type of information for the rest of the fiords and the open coast. Commercial, recreational, charter operator and Ngäi Tahu fishers who collectively hold extensive knowledge about all the fiords were identified by the Guardians. Group members interviewed fishers from the list and completed questionnaires were returned.

3.2.2 *Interpreting the information*

The resultant information was collated by fiord, by species, by harvesting group and by access. This information was complemented by relevant knowledge the Guardians had

acquired since 1995. Significant features and patterns revealed in the grouping are documented as follows.

3.3 Fish stocks and fisheries of the fiords

3.3.1 *Features at the fiord level*

When information about the fish stocks and fisheries across all the fiords was considered, a general pattern emerged.

Stocks in both Milford and Doubtful Sounds, the two most accessible fiords, are subject to local depletion[3].

The steep sided narrow northern fiords fit within a group. These include from Bligh Sound in the north, where concern is being expressed about the state of all the main harvested species, to Dagg Sound, south of Doubtful Sound, where fishing pressure has only recently started to increase. Comments about increasing accessibility and harvesting pressure were recorded for all the fiords within this group.

In contrast, the southern sounds feature extensive waterways, lower terrain and wider, more open entrances. These sounds, particularly Dusky Sound and Chalky Inlet, support more plentiful fish stocks and fisheries than further north. However, comments were received about both Breaksea Sound and the headwaters of these larger sounds that suggest increases in harvesting pressure may not be sustainable in the longer term. Certainly, Vancouver and Broughton Arms, Wet Jacket Arm, Edwardson and Cunaris Sounds and Long Sound are much more like the northern fiords from a fisheries perspective and they logically belong in that group.

3.3.2 *Features of the harvested species*

- **Blue cod**

  Blue cod is vulnerable to depletion. In Milford and Doubtful Sounds local depletion of blue cod has been a feature for some time. The northern fiords all received comments such as; fishing pressure escalating; numbers have declined significantly over the past 3-4 years; never were abundant stocks; blue cod sparse and fishing poor. Positive comments were made about Dusky Sound, Chalky Inlet, and the outer reaches of Breaksea Sound and Preservation Inlet. Opinions were expressed though, that the situation in Breaksea had deteriorated, particularly over the past few years. There was agreement that stocks outside the fiords were not a source of concern and the distance to ports and markets is a disincentive to harvesting.

  This was supported by the results of a recent NIWA, blue cod relative abundance study carried out in Dusky Sound. Conducting the study in what is reputedly the best blue cod sound in Fiordland was considered necessary if adequate numbers of blue cod were to be captured. The Guardians could not guarantee that

[3] Pelagic species, such as tuna that are sought by big game fishers at the fiord entrances and along the outer coast, were not included in this evaluation.

sufficient numbers of blue cod would be present in any of the other sounds. Blue cod relative abundance was found to be high in the outer coast and entrance areas but not so in the middle or head of the sound. A movement study conducted at the same time showed an almost complete lack of blue cod movement between the study areas from the coast to the head of the sound.

It is clear from views canvassed and research conducted that blue cod stocks are not likely to be plentiful inside the fiords. Furthermore, blue cod do not undertake significant movements, meaning that increasing pressure, if not managed, will result in local depletion.

Note: *Now that a relative abundance method has been successfully tested for blue cod it is very important that comparative figures are collected for at least Doubtful and Bligh Sounds - respectively a large complex sound and a narrow northern sound where concerns are consistently expressed about blue cod stocks. The Guardians intend advocating this research with MFish.*

- **Rock lobster**

The same general pattern was reported for rock lobster stocks and the fishery as for blue cod. Increasing harvesting pressure was noted for all of the northern fiords. Whereas rock lobster stocks in Bligh Sound were a source of concern, the same was not true for Dagg Sound. Stocks are thought to have decreased throughout the Doubtful Sound complex during the 1990s as a result of combined commercial and recreational harvesting. Further south, stocks are harvested from the entrances of Breaksea Sound and both Chalky and Preservation Inlets. In Dusky, where harvesting takes place throughout the sound, the comment was made that the quality of the fishery seemed to be declining. Along the outer coast, research is showing that rock lobster stocks are rebuilding rapidly due to management actions the fishers have taken over the past few years.

Setting the Total Allowable Commercial Catch (TACC) for CRA8 is governed by a decision rule that guarantees a rebuild of the fishery. Depending on future management decisions, there is an expectation that rock lobster numbers in the fiords will increase with time due to their movements into and out of the fiords.

- **Groper**

The state of groper stocks and fisheries follow a similar pattern to both blue cod and rock lobster. Again, much concern was expressed for Bligh Sound where stocks appear to have declined. Increasing harvesting pressure is a feature of all the northern fiords apart from Dagg Sound that has only recently begun to attract fishing pressure. Both resident groper and the smaller school groper are harvested in moderate numbers from the Doubtful Sound complex. Whereas groper was thought to have declined since the 1990s in Breaksea Sound, both Dusky Sound and Chalky Inlet support good fisheries. Resident groper tend to be found in the entrance habitat whereas school groper are often associated with fresh water inflows into the Sounds.

- **Paua**

The distribution of paua stocks is determined by the occurrence of kelp - their main food source. For this reason, patches of paua are not found a long way inside the narrow steep sided northern fiords. The main stocks are located along the outer coast and in Dusky Sound and Chalky and Preservation Inlets. The paua fishery in Fiordland is primarily a commercial fishery.

Very little recreational paua harvesting takes place because fishers prefer targeting rock lobster using underwater breathing apparatus. It is illegal to be in possession of this equipment for those who harvest paua. Reports about the disappearance of paua patches at and inside the entrances to Caswell, Charles, Dagg and Breaksea Sounds were accompanied by concern that rejuvenation of a number of these patches was not taking place. Along the coast south of Milford Sound where smaller paua harvesting boats are launched, serial depletion of paua stocks was also noted.

Concern that paua can no longer be hand gathered close to shore along the southern Fiordland coastline resulted in the Waitutu Land Incorporation initiating discussions about establishing a mataitai along the coast abutting their land. A mataitai application was lodged by the Oraka-Aparima Runanga and the Waitutu Land Inc for this part of the coastline. The outcome of the application is not known at this time.

- **Scallops**

Scallops tend to be found in beds that may be patchy and vary from year to year because of environmental factors. However, scallops can be depleted by over harvesting. For instance in Milford Sound scallops are now only found in low numbers. Comments were made that scallops get smaller with increasing distance up Doubtful Sound. The scallops in George Sound are said to be under high harvesting pressure. In the southern sounds, Dusky, Chalky and Preservation, scallops can be plentiful but they are very patchy in distribution and numbers vary from one year to the next.

- **Jock Stewart *(Sea Perch)***

Jock Stewart is reported to be caught in numbers by recreational fishers from Anita Bay, Milford Sound, and Doubtful Sound. In these fiords a shift in focus to species such as Jock Stewarts has occurred as species such as blue cod become scarce. Jock Stewarts are also caught, though not targeted in commercial fishing operations. Although this has not been a highly regarded species, Jock Stewart is growing in popularity as people discover it is a good eating fish. It also provides important first fishing experiences, particularly for schools staying at the Deep Cove Hostel on outdoor education courses. Harvesting pressure indicates that harvest limits are now warranted.

- **Kina *(Sea urchins)***

  Currently, kina is commercially harvested in Fiordland under a single special permit that operates within the Kina Development Programme (KDP) area in Dusky Sound. Although there are a number of fishing permits for kina in Fisheries Management Area 5, divers do not travel to Fiordland to harvest kina because it is not economically viable. In October 2002 kina was introduced into the QMS. Permit holders who are allocated quota and others who purchase quota in SUR5 can acquire an Annual Catch Entitlement (ACE) and harvest kina throughout Fiordland. From kina research conducted in Fiordland, stocks inside the fiords have been found to be slower growing than stocks along the open coast. Furthermore, there is evidence that stocks inside and outside are genetically distinct and do not mix. This has serious sustainability implications if commercial harvesting takes place inside the fiords.

3.3.3 *Features of the harvesting groups*

There was a remarkable degree of consistency between commercial, customary and recreational harvesting groups about the state of stocks and fisheries in each fiord and the patterns across all the fiords. What differed were the harvesting patterns.

Currently, a voluntary rahui is in place for issuing customary fishing authorisations for the inner fiords. This means fishing by tangata whenua is undertaken according to the amateur rules and represents a significant gift to Fiordland's fisheries on the part of Ngai Tahu Whanui.

Whereas, non-commercial[4] harvesting pressure for blue cod is increasing within the northern fiords, commercial fishing has not taken place inside the fiords from Bligh to Breaksea Sounds for many years. Stocks of blue cod are only considered to be in commercial quantities in Dusky Sound and Chalky Inlet but even in these more productive sounds commercial blue cod fishing is limited.

An increase in non-commercial rock lobster diving has taken place over the past few years inside all of the northern fiords, and in particular, George and Nancy Sounds. From Dagg Sound south, harvesting is focused in the outer sounds, except for Dusky Sound where diving for lobster takes place throughout the entire sound. Improvements in small craft design have extended the capability of divers who report diving in bays and along the outer coast in calm weather. In contrast, only a limited amount of commercial rock lobster harvesting takes place inside the fiords. Harvesting is being consolidated in the outer parts of the sounds and along the outer coast. Recent reductions in rock lobster quota for the CRA8 Quota Management Area (QMA) and the resultant unavailability of quota have seen a significant reduction in the number of boats, number of fishers and the rock lobster harvest. As mentioned earlier, the latest rock lobster stock assessment plenary report indicates a rebuild of the stocks is under way.

[4] Non commercial fishing is harvesting that takes place under the amateur regulations.

Non-commercial groper fishing pressure was reported to be increasing throughout the northern fiords and concern for the groper stocks was noted, particularly in Bligh Sound. Both groper and school groper are harvested but not in large numbers. A limited amount of commercial fishing takes place in George, Thompson, Doubtful and Dusky Sounds and Chalky Inlet. For the rest of the fiords comments indicated that groper stocks could not support a commercial fishery.

In summary, non-commercial fishing takes place predominantly inside the fiords where there are sheltered fishing opportunities. Although small private boats are capable of making trips along the outer coast, these are mainly to access other fiords rather than to fish outside. There are serious safety issues along the exposed Fiordland coastline that make it an unlikely destination for most small boat recreational fishing in all but the most settled weather. In contrast charter and larger syndicated vessels are capable of fishing on the outer coast. However, fishers on board may be less likely to choose this option when sheltered water fishing opportunities are available. When conditions permit, charter operators do venture outside to take advantage of better quality fishing.

Commercial fishing is focused towards the entrances of the fiords and along the outer coast. The type of vessels and servicing facilities make it possible for commercial fishing to take place over extended distances and periods as well as in difficult weather conditions.

3.3.4 *Access*

There has been easy access to Milford Sound and relatively easy access to Doubtful Sound for commercial, charter and private boat fishers for many years. Commercial fishing vessels continue to ply all Fiordland waters although the number of rock lobster vessels has more than halved in recent years. The modest charter boat fleet that operates within the southern fiords seems to have only expanded slowly. However, increasing accessibility was identified as a major issue by fishers who provided information.

Improved technology, different fishing patterns and new forms of transport all contribute to the phenomenon. For instance, over the past 3-4 years small trailer boats launched at Milford are heading south to spend the day fishing Bligh Sound. Similarly, recreational boats are heading north from Thompson Sound to spend a day or longer at Nancy, Charles or Caswell Sounds. The increase in day trips to Nancy Sound over the past 4 years was described as dramatic. Further south there has been an increase in fast 4-6 m boats that are capable of travelling from Doubtful Sound to Breaksea and even Dusky Sound, taking advantage of the sheltered water through the Archeron Passage. Then there are those few hardy folk who launch at Riverton or Bluff and risk the southern coast to reach Preservation Inlet, normally a 10 hour cruise for the larger charter vessels!

Charter vessel operators have adopted different procedures in recent years. Those that fish north of Doubtful tend to visit fiords that used to be bypassed and stay overnight in more fiords. The length of operating season has also extended - for some up to six months. Further south, charter operators have adopted the practice of flying parties either in or out of the sounds. This not only avoids a long steam but also makes back-to-back trips possible. The recent appearance of an increasing number of larger

syndicate boats[5], particularly in the southern sounds, enables groups to make extended trips into the more remote parts of Fiordland.

Of all access innovations, probably the most novel is the practice of flying small boats and their occupants into the sounds by helicopter. Although this is not yet a common occurrence it has the potential to remove obstacles that have traditionally prevented numbers of people from reaching the more remote parts of the fiords. The use of helicopters to transport fishers within Fiordland appears set to increase. Distances that normally require a steam of several hours can be covered in a fraction of the time. Given this form of transport, it is possible to visit several fiords within a day though this would be prohibitively expensive for all but a very few.

3.4 Grouping Fiordland's fisheries

When the Guardians took all the available information about fisheries and the marine environment into account, it was clear that Fiordland's fisheries could be grouped according to three fundamental features:

- ***Habitat characteristics and productivity*** - are the habitats dominated by slow growing, long lived animals, or productive plant based communities?

- ***State of the harvested fish stocks*** - are the fish stocks depleted, vulnerable or is the stock being maintained?

- ***Current and future access and fishing pressure*** - what is the current level of harvesting pressure and how is that likely to change?

Collating information about these features for each fiord resulted in the fiords and coast falling logically into three distinct groups:

- **Milford and Doubtful Sounds**

  These two fiords feature typical animal dominated, inside fiord habitat. Certain harvested stocks are depleted. Easy access has been available to Milford Sound for many years and for those prepared to negotiate Lake Manapouri and Wilmott Pass, Doubtful Sound is also accessible. Consequently, they are the most fished of the fiords.

- **Inside the rest of the fiords**

  Also featuring typical animal dominated fiord habitat, inside the rest of the fiords certain fish stocks are declining or vulnerable. Both access and harvesting pressure are increasing. In fiords where concern about fish stocks is consistently expressed, such as Bligh Sound, harvesting pressure is already high. On the other hand where fish stocks are not causing concern, as in Dagg Sound, harvesting pressure is not yet an issue.

[5] Ex commercial fishing vessels in private syndicate ownership used for recreational fishing and diving.

- **Fiord entrances and outer coast**

  Productive, plant based, coastal type habitat is a feature of the entrances and outer coast where the state of fish stocks is of less concern than inside the fiords. Whereas access is increasing in the fiord entrances it is likely to increase more slowly along the open coast.

The difference between animal dominated habitats inside and productive plant based habitats outside the fiords has profound management implications. Tailoring management decisions to such remarkably different habitat types requires the boundaries or transition zones between the habitats to be defined.

3.5 Defining habitat lines

As a first step, Guardians with local knowledge identified the boundaries between the inside fiord and entrance/outside habitats for each fiord. Where boundaries were not clear-cut, transition zones were defined. Feedback about the position of the lines and zones was then sought from the wider groups during a round of information meetings. Input was also sought from researchers who had experience in Fiordland.

Work had also begun on developing a GIS model that would provide more information on which to base the habitat lines. Five physical features considered to be important determinants of habitats that support different types of communities were used in the model. Results of modelling surface salinity, wave exposure, bathymetry, slope of the rock walls and aspect - north or south, confirmed the position of the clear-cut habitat lines and were used to provide more information about the habitat features within the transition zones. A physical model such as this, needs to be validated (ground truthed) to ensure it accurately reflects biological reality. This exercise was unable to be carried out before the draft strategy was released.

Accordingly, where the transition takes place over a considerable distance, the group adopted a two step rule on which to base the habitat line:

- identify the position approximately midway along the transition (attempting to find a 50% plant/animal community position did not prove feasible);
- locate the line between two easily recognisable geographic features closest to the midway position.

Habitat lines were identified within each fiord and presented in Appendix 1 of the draft strategy.

During the ground truthing cruise that took place in October 2002, morphological changes in biological features such as kina test (shell) size and *Ecklonia* blade width were measured at 54 sampling sites located along the length of the fiords. Preliminary results were presented and discussed at the Guardians' meeting in February 2003.

The position of habitat lines from the preliminary GIS project results were presented and combined with the other information to revise the habitat lines. Decisions about the location of habitat lines were made as follows:

- at sharp habitat transitions;
- where there is a transition zone, there is flexibility about the placement of the line. The draft lines, GIS generated lines and placement of lines at easily identified and marked points were all taken into account. For Thompson and Doubtful Sounds safety of non commercial fishers was also considered;
- for the southern fiords, sampling sites around large islands tend to define the position of the GIS generated habitat line. Whereas the outer side of islands have entrance and coast communities, the inner side of the islands are characterised by inner communities. This resulted in habitat lines that tended to be located through the outer islands rather than across the sounds. On the basis of discussion, the Chalky Inlet line was relocated further towards the outer coast and the location of the Dusky Sound and Preservation Inlet lines were confirmed.

Revised habitat lines for all the fiords are shown on Figure 3. Habitat lines for individual fiords are shown in Figures 6-18. Given the management implications of the habitat lines, the location of each line will be clearly marked and publicised.

3.6 A management approach for Fiordland's three fisheries groups

Given three distinctly different types of fisheries in Fiordland, a single management response is not appropriate. For instance, commercial fishing is managed by the Quota Management System that allows bulk harvesting methods both inside and outside the fiords. Similarly, amateur daily bag limits of 30 blue cod, 6 rock lobster and 5 groper apply across all habitats, both inside and out. One of the most serious and criticised aspects of the amateur rules is accumulation. The ability to accumulate daily catches over extended trips in the fiords is thought to be an important factor contributing to local depletion. The view that Fiordland is a place to "fish for a feed" was expressed regularly at the information meetings.

If the needs associated with each of the three different types of fishery are recognised, management mechanisms can be tailored to achieve four of the Guardians' most important objectives:

- ensure the sustainable utilisation of the finite fisheries resources, having regard to the special nature of the fiord environment;
- prevent uncontrolled expansion of effort/harvest by all groups;
- fit management of fisheries to an appropriate spatial scale;
- encourage harvesting to take place at the entrances and outer coast.

3.6.1 *Milford and Doubtful Sounds*

Where fish stocks are depleted, harvesting pressure/harvest has to be drastically reduced to encourage a rebuild.

Excluding commercial fishing and bulk harvesting methods inside the habitat lines and adopting a combination of customary temporary closures and a "fish for a feed - no accumulation" philosophy for non commercial fishing is proposed to deal with the two most accessible fiords. Accumulation is described in 3.6.4.

3.6.2 *Inside the rest of the fiords*

Where fish stocks are declining or vulnerable, harvesting pressure/harvest needs to be reduced to reverse the decline and to provide for the expected increase in harvesting pressure. Daily catches have to be set at a level where the total harvest is reduced.

Excluding commercial fishing and bulk harvesting methods from inside the habitat lines, together with conservative amateur bag limits and no accumulation of catches is considered to be the most appropriate approach for this group of fiords.

3.6.3 *Fiord entrances and outer coast*

Where the state of fish stocks is dependent on future trends in access and fishing, it is desirable that harvesting pressure/harvest does not increase - indeed provision needs to be made for the expected increase in harvesting pressure.

In the fiord entrances and along the outer coast commercial harvests are capped by the Quota Management System (QMS) and can be reduced for sustainability reasons as has occurred in the rock lobster fishery over recent years. Amateur daily bag limits and accumulation provisions need to be realistic for the Fiordland situation and changes in future fishing pressure.

3.6.4 *Accumulation of daily fish possession limits*

Both the present Fisheries (Amateur Fishing) Regulations 1986 and the Fisheries (Southland and Sub Antarctic Areas Amateur Fishing) Regulations 1991 provide a defence mechanism to allow recreational fishers to possess and accumulate more fish and shellfish than the daily limit on extended fishing trips. To exercise this defence the fisher must be able to prove that the fish or shellfish was taken within the prescribed daily limit on each day fished.

Why is accumulation detrimental?

Accumulation of amateur fish possession limits most frequently occurs in Fiordland due to recreational fishers engaging in extended fishing trips of several days' duration. Due mainly to the difficulties and cost of access, recreational fishing trips normally occur for extended periods ranging from overnight trips to seven days or longer. While trailer borne vessels can operate from Milford and Doubtful Sound, the majority of recreational fishing takes place aboard charter vessels and private syndicate owned vessels, where recreational fishing and diving are two of the primary activities most often combined with deer hunting. Both the charter vessel fleet and the growing numbers of ex-commercial fishing vessels in private syndicate ownership are well equipped to accommodate fishing parties up to 12-14 people including freezer storage for accumulated catch.

The present accumulation regime allows excessive harvesting of some target fish species contributing to localised depletion of vulnerable resident fiord fish stocks. In one of the most excessive reported cases, a 14-person charter party, plus skipper and crew brought home 672 rock lobster from a 7-day dive charter, while claiming that no rock lobster were consumed during the trip.

Accumulation encourages "aggregation" of extra catch taken for non-fishers in the party and is exacerbated by "double dipping" of additional catch consumed during the trip but not reported. Whilst it is recognised that the defence provision is not generally subject to abuse, when this happens it gives rise to strong negative reaction from fishers who adhere to a "fish for a feed" ethic, environmentalists and the general public concerned about excessive catches. Accumulation, combined with unrealistic fisher expectation, can contribute to a common behaviour where the success or otherwise of a trip is measured by achieving the species limit, each day - limits that many consider are set too high or are unrealistic for inside the fiords.

3.7 Proposed management measures

The following package of management measures has been devised to meet the needs of Fiordland's three different groups of fisheries. It represents an agreement between commercial and recreational fishers, Ngäi Tahu Whanui (customary), charter operators and environmental and community interests on the Guardians. All the fishing groups

have made significant sacrifices in the interests of looking after Fiordland's fisheries and marine environment. Reaching an agreement indicates that a balance has been struck between the groups.

Note: *Current and proposed amateur fishing rules are detailed in Appendix 2.*

3.7.1 *Milford and Doubtful Sounds*

Commercial fishing

- No commercial fishing inside the Doubtful Sound habitat lines (Milford Sound has been closed to commercial fishing since the 1950s).

Non-commercial fishing (customary and amateur measures)

- Section 186B, temporary two-year closure for blue cod plus two additional years if necessary.
- Groper daily bag limit of 2, no accumulation.
- Rock lobster daily bag limit of 2, no accumulation.

3.7.2 *Inside the rest of the fiords*

Commercial fishing

- No commercial fishing inside the habitat lines.

Non-commercial fishing (customary and amateur measures)

- Blue cod daily bag limit of 3, no accumulation.
- Groper daily bag limit of 3, no accumulation.
- Rock lobster daily bag limit of 3, no accumulation.

3.7.3 *Fiord entrances and outer coast*

Commercial fishing

- Harvest capped by the QMS.

Amateur fishing

- Blue cod daily bag limit of 20, no accumulation (this includes the 3 blue cod limit from within the fiords).
- Groper daily bag limit of 5 with no accumulation (this includes the 3 groper limit from within the fiords).
- Rock lobster daily bag limit of 6 with an accumulation limit of 15 for three days or more. This measure is associated with a bag and tag provision relating to each day's catch.

3.7.4 *Measures that apply both inside the fiords and along the coast*

Customary fishing

- Managed by tangata tiaki.

Amateur fishing

- Bag limits:
  - Scallop daily bag limit of 10 with no accumulation.
  - Paua daily bag limit of 10 with no accumulation.
  - Groper included in the total finfish bag limit.
  - Jock Stewart (Sea Perch) daily bag limit of 10 with no accumulation – inside the combined daily finfish bag limit.
  - Total finfish bag limit of 30 with no accumulation.

- Bulk harvesting methods:
  - Inside the habitat lines where conservative daily bag limits are proposed, bulk harvesting methods are not appropriate. There is an increased risk of exceeding daily limits if cod pots, dahn lines with 25 hooks, dredges and set nets are used. For non-divers, pots are the only method of harvesting rock lobster. Given that rock lobster can be released alive three rock lobster pots per boat are considered to be appropriate both inside and outside the habitat lines.

- No cod pots inside the habitat lines of any fiord.
- Dahn lines limited to 2/boat and 5 hooks per line.
- Rock lobster pots limited to 3/boat.
- No scallop dredges.
- No set nets.

- Hook size that promotes the survival of blue cod:
  - Given the vulnerability of blue cod to overfishing it is important to minimise fishing method induced mortality of blue cod that are caught but not kept. NIWA research into the effect of hook size on blue cod mortality conclusively shows that the use of size 6/0 Kahle or larger hooks reduces the mortality of returned undersized blue cod. Larger hooks are not swallowed and can therefore be removed without fatally wounding the fish. The use of large hooks may also reduce the number of undersized blue cod captured.

- Number six (6/0 Kahle) or larger hooks to be used whilst fishing for blue cod using bait (non regulatory measure).

3.7.5 *Storing rock lobster and holding (coff) pots*

Outside the commercial rock lobster harvesting season (generally from February to June), pots are stored in sheltered locations on flat muddy or sandy substrates. This type of habitat is relatively plentiful in the southern fiords where the practice of setting a line of pots connected by bridles with a float at either end is considered to be the most appropriate pot storage method. Further north, where suitable substrate is more restricted, pots are stored individually. Anchorages are avoided.

In Section 4 values of special significance are discussed, including the definition and identification of china shops and representative areas. The Guardians agreed that rock lobster pot storage should not take place inside the areas designated as china shops (Figure 4). Within three of the proposed seven representative areas, restricted areas are being defined where rock lobster and coff pot storage can take place without compromising biodiversity values (Figures 8, 11 and 18).

Adopting a recommended pot storage method, excluding pot storage from china shops, and designating restricted areas where pot storage is able to take place within representative areas, are all important steps towards developing a comprehensive pot storage management approach for Fiordland. Developing this further is a priority for the CRA8 Management Committee that has the knowledge and practical experience to devise workable solutions for the Fiordland situation.

3.8 Package of fisheries measures - for the fish and the environment

The proposed package of fisheries measures not only benefits Fiordland's fish stocks and fisheries[6] but also the marine environment. Certain fisheries management measures can play a role in looking after values of special significance. For instance, if commercial fishing is withdrawn from inside the habitat lines this will complement other measures proposed for the animal dominated inside fiord areas. Similarly, the adoption of conservative amateur harvesting limits within the fiords means the removal of methods such as scallop dredging, with positive implications for the benthic communities. Proposals contained in this component of the draft strategy represent a very positive contribution to the marine environment on the part of the harvesting groups. The nature of the contribution is shown in Figure 3 where the extent of inner fiord habitats is shown.

[6] For example, over the past 5-6 years the CRA8 Management Committee has taken a proactive approach to resolving rock lobster sustainability issues within CRA8. The TACC is decided on the basis of a decision rule that guarantees a rebuild of the fishery. This has resulted in quota holders taking large cuts to their quota and the unavailablity of quota has, in turn resulted in fewer boats in the fishery. However rock lobster stocks along the outer coast are now rebuilding and the current proposal not to pot for rock lobster inside the habitat lines is a further gain for both the stocks and habitat within those areas.

4.0 Values of Special Significance

Key Objective

- **Ensure the ongoing integrity of areas, habitats and communities of special significance within Fiordland's marine environment**.[7]

4.1 Information gathering by fiord

The information presented in this section of the strategy is from a variety of sources. Information already available about areas and values of special significance in Fiordland's marine environment from the 1990's onwards was combined with the Guardians' knowledge and that of their wider groups. Valuable input has been made by researchers who have carried out extensive studies in Fiordland, including Ken Grange (NIWA), Chris Paulin (Te Papa), and Steve Wing (Marine Sciences, University of Otago). Where values needed to be clarified, site visits were made by group members or researchers.

It should be noted that commercial fishers advocated marine reserve status for two areas identified in the 1990s exercise. The Fiordland Commercial Fishermen's Association applied for what have since become the Piopiotahi (Milford Sound) and Te Awaatu (Doubtful Sound) marine reserves.

4.2 Identifying values of special significance

The Guardians adopted two distinctly different types of values to ensure the ongoing integrity of areas, habitats and communities of special significance within Fiordland's marine environment. Criteria were defined to guide the identification of the two following sets of values:

4.2.1 *"China shops"*

China shops are small discrete areas that are outstanding for the abundance and/or diversity of animal communities, the abundance and/or diversity of mixed animal and plant communities or the abundance of particular animal species. Such communities are often, but not exclusively located where the current is strong, such as where fiords change direction sharply or the channels narrow around islands. Communities

[7] **Marine mammals**
The Guardians and DoC discussed whether serious issues currently affect marine mammals in Fiordland. No outstanding issues were identified that could not be adequately addressed by existing legislative provisions contained in the Marine Mammals Act and Conservation Act. Both Acts provide safeguards for marine mammals that are subject to frequent interaction with humans. The group supports the marine mammal research effort and also the work to ensure that commercial activities such as marine mammal watching and diving with dolphins do not adversely impact the animals.

associated with a wide variety of different habitats that occur in a confined area may also qualify for china shop status.

Likely areas were initially identified on the basis of earlier work documented by Ken Grange and the Marine Sciences Society, and independently on the basis of the Guardians' knowledge. A workshop was held with Ken Grange and Chris Paulin to better define the values within these sensitive areas. Steve Wing identified a number of additional areas on the basis of his knowledge and this completed the current list. A summary of available information about each area is presented below. We anticipate additional information will become available as results of current and future studies are delivered.

China shops support a range of special values including biodiversity. Whether these areas should be identified at all was debated. However the Guardians decided that if the areas were identified appropriate measures could be applied to minimise the risks. Therefore the identification of possible risks became fundamental to a consideration of how best each china shop could be looked after.

4.2.2 *Representative areas / fiords*

Initially, parts of fiords and entire fiords with special features were identified. For instance, Sutherland Sound was identified as a unique estuarine area confined by an emergent sill and Long Sound was considered to be one of the most pristine fiords in Fiordland.

However, as the exercise progressed, it became clear that a set of criteria on which to consider the values of each fiord required better definition. Rather than attempting to define something as generic as "special values", the group decided that "representative areas" could be more easily defined and would provide a more useful basis for advancing the Guardians' objective. Fiordland's marine habitats and biodiversity can be encompassed by a selection of representative areas. Such an approach is advocated in the New Zealand Biodiversity Strategy released in 2000. One of the government's desired outcomes stated in the strategy is the protection of a range of marine habitats and ecosystems that are representative of New Zealand's indigenous marine biodiversity. The Guardians recognised the relevance of such an approach for Fiordland's marine environment.

The following habitat framework and criteria for identifying representative areas were adopted:

1. **Inside Fiord (sheltered)**

   - Vertical rock wall
   - Broken rocky reefs
   - Soft bottom

2. **Fiord Entrances**

- Semi sheltered
- Sheltered

3. **Outer Coast**

- Exposed[8]
- Semi sheltered
- Shallow sandy

A number of fiords and parts of fiords representing estuarine, inside fiord and fiord entrance habitats have been identified according to these criteria and the information summarised below. As indicated above, a number of areas classed as representative exhibit very special values as well.

Note:*The term "representative areas" does not imply that areas must be in the same proportion as occurs geographically.*

4.3 Identification and description of china shops

The location of the china shops is shown in Figure 4. The position of each china shop within individual fiords is shown in Figures 6-18. Suggested management measures have been tailored to an assessment of possible risks to the special values of each china shop. In addition to the targeted management measures for each site, a code of practice covering all the china shops is supported.

- **Bligh Sound**

  - ***Turn Point***

    Values: Spectacular black coral colonies and an abundance of sponges on the Turn Point rock wall are outstanding values. Biodiversity is high. The site has excellent underwater visibility.

    Threats: Confined area with definite threat from divers.

    Measures: Permit for divers, guide divers, code of practice for the site.

    Clio Rock (White Rocks)

    Values: Unique habitat feature. Rocks rise from 120 to 1 fathom in the middle of the sound. A diverse and abundant community of red, pink and black corals are found here. The lack of sedimentation means the water is very clear and the corals are clean.

[8] The fiord entrances and outer coast are regularly exposed to extreme weather that batters the bull kelp and shifts the bouldery and rocky bottom substrates. Unstable exposed habitats are the logical consequence of such rigorous conditions.

Threats: Increased visitor numbers and anchoring on the rocks.

Measures: Boats should anchor at Kelly's on the eastern side using stern lines.

- **George Sound**

  - ***South side of Cinch Cove***

    Values: The site is north facing, sunny and relatively light to a depth of 45 m. The cliff face descends and gives way to a sandy slope at 25-30 m. Both fiord and open coast communities are represented on the cliff face where seaweeds grow adjacent to black corals and feather stars. At the base of the wall there is a spectacular field of large sea pens and tube anemones that extends beyond diving depths. This is one of the few sea pen localities in the northern fiords. There are no apparent threats to these values.

- **Caswell Sound**

  - ***Hansard Point***

    Values: Ecklonia forest descending to black coral. A mix of open coast and inner fiord habitats. Sheer rock walls supporting abundant corals and starfish. There are no apparent threats to these values.

- **Charles Sound**

  - ***Gold Arm***

    Values: Everything is together in one place - river mouths, estuarine areas, islands (Fanny Islands), and rocks that emerge at low tide. There is an abundance of spectacular red and black corals, some of which grow so close to the surface they can be viewed from a boat. An abundance of fish and some rock lobster together with good light, adds to an impressive range of values.

    Threats: Increased visitor numbers and anchoring.

    Measures: The main anchorage for the sound is just a few minutes away. Boats should anchor on the inside of the site on mud and there should be a code of practice developed for the site.

  - ***Emelius Arm***

    Values: Diversity and abundance of colourful sponges on a boulder substrate. There are no apparent threats to these values.

➢ Bradshaw Sound

♦ *Precipice Cove*

Values: A sill at the entrance makes Precipice Cove a fiord within a fiord. The diverse wall community associated with the sill is of special significance.

Threats: Anchoring on the sill is a threat. However anchoring within the cove is not considered to be a threat. Precipice Cove is one of the better known anchorages and subject to high use. Fishing with existing methods does not represent a threat to the wall community.

Measures: There is sheltered anchorage behind Macdonell Island where anchoring can take place away from the sill. A code of practice could be the most effective approach for looking after the wall community.

♦ *Gaer Arm*

Values: Groper, tarakihi, other finfish and rock lobster are found up in the estuarine habitat at the head of the sound. Rock lobsters have been observed in coral trees.

Threats: Groper is harvested from syndicate boats in this area and an increase in fishing pressure is predicted. Commercial rock lobster potting also takes place here.

Measures: The Guardians' agreed that this area warranted a no-fishing status. There is an all weather anchorage in nearby Precipice Cove.

➢ Doubtful Sound

♦ *Common Head*

Values: Abundant coralline algae and bryozoans - high biodiversity. An area of high currents and associated growth rates. This area is more representative than outstanding. There is a rock identified by a South Cardinal Mark 100 m off shore that is a navigational hazard but otherwise there are no apparent threats.

♦ *South wall between First and Crooked Arms*

Values: Steep rock walls support high densities of brachiopods and black coral. This is the centre of the productive zone in Doubtful Sound and densities of animals in the wall community reflect this. Best suspension-feeding communities in Doubtful Sound. There are no apparent threats to these values.

- ***Tricky Cove***

  Values: Tricky Cove is a tiny cove opposite Crooked Arm where all the early research on black coral and inner fiord habitat communities took place. Diverse wall communities are a feature of the cove and the walls of Doubtful Sound 100 m either side of the cove. The cove has both historic value as well as providing important baseline monitoring opportunities.

  Threats: The cove provides safe anchorage and attracts visitors and divers who are interested in its historic and other values. Accordingly, anchoring, visitor numbers and divers are all threats to the values of Tricky Cove.

  Measures: Anchoring and diving within the cove needs to be managed. If these activities are managed visitor numbers may not be an issue.

- ***Area south of Elizabeth Island (5 china shops)***

  Values:

  - South end of Elizabeth Island - outstanding example of red coral on black sand.
  - Unique assemblage of bright yellow glass sponges at 30-35m depth opposite Hall Arm. Apparently the only other place these sponges have ever been seen is in caves in Jamaica.
  - Rock wall community and red coral under a large overhang south of Lady Alice Falls.
  - Red coral community inside Rolla Island, Tarawera Rock.

- ***White coral community in the trench off Brigg Point***

  Although these features are located within close proximity, each is found in an otherwise barren environment.

  Threats: Being sheltered and easily accessible from Deep Cove, visitor numbers, diver damage, anchoring and dredging represent real threats to these values.

  Measures: The area bounding the five sites warrants special significance status. Risks to the china shop values including visitor numbers, diving and dredging must be able to be controlled by whatever management tool is selected. Olphert Cove could provide an appropriate anchorage site. The area could also provide opportunities to study marine biology for schools using the Deep Cove Hostel. A marine reserve may be an appropriate tool as is outlined in Section 4.5 - management considerations.

- **Breaksea Sound**

  - ***The wall before First Cove***

    Values: The best suspension feeding communities in Breaksea Sound. The only place in Fiordland where particular sea stars are found. There are no apparent threats to these values.

  - ***Vancouver Arm***

    Values: Brachiopods are a distinctive feature of the diverse rock wall communities along the north wall. There are no apparent threats to these values.

- **Acheron Passage**

  - ***Reef off Wet Jacket Arm***

    Values: Spectacular rock wall habitat occurs in a high current. The most important part of the habitat is the sill, or rock reef located just off the entrance to Wet Jacket Arm. Being remote from the land, silt does not affect the communities that feature large black corals and bryozoans.

    Threats: The impact of increasing numbers of cruise trips was discussed. Environment Southland's agreement with the cruise ship industry limits the number of ships to two at any one place and time. Currently the total number of visits is 30 and this is expected to increase to 50 over the next few years. Issues of speed and noise underwater were canvassed but other than collisions and sinking, cruise ships were thought not to represent a threat to the underwater sill community. However, this site is popular with divers and both increased visitor numbers and anchoring were seen as threats.

    Measures: The possibility of marking the site was discussed but damage to the marker and anchoring at the site could be resultant problems.

- **Dusky Sound**

  - ***Cook Channel, Long Island***

    Values: Where the passage narrows, high currents foster dense colonies of particularly large bryozoans, black corals and red corals. There are no apparent threats to these values.

- ***Nine Fathom Passage, Cooper Island***

  Values: More spectacular scenery than the Cook Channel china shop. Where the passage narrows, high currents foster dense colonies of particularly large bryozoans, black corals and red corals.

  Threats: Anchoring.

  Measures: Anchoring can take place at the end of Cooper Island or Fanny Bay.

➢ **Chalky Inlet**

- ***Edwardson Sound***

  Values: A forest of huge black coral trees with abundant gorgonians and other species typical of the southern sounds is located opposite Divide Head along the west wall at the entrance of Edwardson Sound. The water is very clear due to a lack of freshwater. The sloping rocky reef substrate ends in a drop off.

  Threats: There is nowhere to anchor but visitor numbers are a threat.

  Measures: A code of practice needs to be developed for the site.

➢ **Preservation Inlet**

- ***The Narrows***

  Values: An outstanding abundance of sea pens occurs on the sand with scallops located among them. Holothurians (strawberry fields), red coral and white brachiopods are also outstanding features of the Narrows.

  Threats: Scallop dredging, diver damage, divers disturbing the sediment that settles on the sea pens with long term detrimental effects, increased visitor use and rock lobster pot storage are all threats.

  Measures: Ban scallop dredging. Introduce a no take area for scallops to stop divers gathering amongst the sea pens. Create a no anchoring zone. Ban the storage of rock lobster pots and the use of recreational rock lobster pots from the area. Develop a code of practice for this site.

4.4 Identification and consideration of representative areas

The location of representative areas is shown on Figure 5. For individual fiords, areas are shown in Figures 6-18. Primarily, representative area status is to ensure that community structure and biodiversity are not unduly compromised by human influence.

Although there are a variety of measures in legislation that could be used to achieve the type of protection envisaged (Government's Marine Protected Area initiative), the Guardians' support the use of the marine reserves tool for the representative areas identified below conditional on:

- the final form of the revised marine reserves legislation;
- Kaitiakitanga being appropriately expressed in Fiordland, as customary fishing rights will possibly be extinguished with the permanent removal of harvesting from these areas;
- anchoring provisions in some very extensive waterways under marine reserve status, as there are safety issues associated with the exposed and isolated nature of much of Fiordland's marine environment.

Representative areas shown in Figure 5 include inner fiord (vertical rock wall, broken rocky reef and soft bottom habitats) and entrance (semi sheltered and sheltered habitats) that support significant values from both a national and international perspective.

Unlike the inner fiords, the outer Fiordland coast habitat does not support special values of an equivalent nature - indeed this exposed habitat has been described as having similar characteristics as the rest of the southern coastline. Rather than using the marine reserve statute, a combination of marine protected area management tools provides an appropriate management choice for outer coast habitats.

- **Sutherland Sound**

  - ***Entire Sound*** (inside fiord - soft substrate)

    The sill that defines Sutherland Sound is very shallow, emerging at low tide. Behind the sill lies a unique muddy estuarine area where leaf material has accumulated due to a lack of flushing. Spiky dogfish, stargazers, flounder and red decorative crabs are all common in this pristine habitat.

- **Bligh Sound**

  - ***Turn Point to Clio Rocks*** (inside fiord - vertical rock wall)

    Linking Turn Point and Clio Rocks by including the rock walls between the two china shops to create an area representing inside fiord, vertical rock wall habitat.

    Divers would no longer be able to harvest rock lobster in the area and would need to move to alternative areas.

- **Charles Sound**

  - ***Gold Arm*** (inside fiord - vertical rock walls, broken rocky reefs, soft substrate)

    In addition to the extraordinary set of values exhibited within the Gold Arm china shop, diverse rock wall communities throughout the rest of the arm provide an excellent representative area of rock wall habitat.

    Depending on the management measures adopted, the storage of rock lobster and coff pots needs to be accommodated within Gold Arm. These are not associated with the rock wall habitat. Commercial, recreational and customary fishing would be removed.

- **Bradshaw Sound**

  - ***Gaer Arm*** (inside fiord - vertical rock walls, soft substrate)

    The influence of freshwater from the power scheme is at a minimum in Gaer Arm. The Sound still supports cockle beds as well as highly diverse rock wall communities including opal fish, seapens and soft coral. Special features of the china shop at the head of the fiord include the presence of groper, tarakihi, other finfish and rock lobsters, some of which have been observed in coral trees.

    Customary fishing and a popular area for recreational fishing would be removed.

- **Doubtful Sound**

  - ***Te Awaatu Channel*** (inside fiord)

    Currently, Te Awaatu (The Gut) Marine Reserve extends along the Te Awaatu Channel from the inner end of Bauza Island to the narrowest part of the channel. The wall community is the special feature of this area where currents and depth provide ideal habitat. Diver damage has occurred here because of the confined nature of the special features. To relieve diver pressure within the marine reserve an extension of the boundary was considered. Limited information about the type of habitat seaward of the marine reserve revealed a bouldery substrate, large kelp beds and rock lobster stocks. These features are not sort after by divers within Te Awaatu and for this reason an extension of the marine reserve boundary would be unlikely to spread diver pressure. Accordingly a seaward extension of the marine reserve to the habitat line requires further investigation of both the habitat features and management measures.

    Recreational, customary and commercial fishing would be removed from this area should the marine reserve be extended.

- **Acheron Passage**

  - ***Wet Jacket Arm*** (inside fiord - vertical rock walls, broken rocky reefs, soft substrates)

    As a representative area, Wet Jacket Arm encompasses all inside fiord habitats within a single fiord entity. Ken Grange reports the highest densities of black coral from all his Fiordland studies are in Wet Jacket Arm. Steve Wing has study sites in the Arm and reports that the best brachiopod beds and suspension feeding communities are around Oke Island. Recreational, commercial and customary fishing would be removed.

- **Dusky Sound**

  - ***Inside Five Fingers Peninsula*** (fiord entrance, outer coast habitats)

    The area suggested inside Five Fingers Peninsula, takes in Cormorant Cove, Facile Harbour and Pigeon and Parrot Islands and includes rocky reef, sandy bottom, estuarine and kelp habitats. The type and diversity of habitats makes this area very suitable for representative status.

    Recreational, commercial and customary fishing would be removed from this area that is particularly valued for shelter.

- **Preservation Inlet**

  - ***Long Sound*** (inside fiord - vertical rock walls, broken rocky reefs, soft substrate)

    The area includes Long Sound and the Narrows to a line across the entrance from Revolver Bay. Long Sound is regarded as one of the most pristine sounds. Poor stocks of recreational fish species have meant that fishing pressure has never been high. The Sound is very important for splendid perch, an emergent fish species (normally only found at depth in the ocean). Wall communities are representative. Long Sound is used to transport hunters, fishers and charter boat clients into and out of the fiords via Cascade Basin. Anchoring takes place in Cascade Basin, however this operation does not appear to adversely impact the underwater habitat of Long Sound.

    Recreational and customary fishing would be removed.

4.5 Management considerations

The location and distribution of representative areas and china shops highlights the national and international importance of inside fiord habitat, communities and biodiversity.

Based on local knowledge, available information and scientific advice, seven representative areas have been identified, including one entire fiord system and four entire fiord arms. In addition to being classed as representative, Sutherland Sound, Wet Jacket Arm and Long Sound have been regarded as distinctive in their own right since the early 1990s. Collectively, these seven areas support a range of habitats, communities and marine biodiversity.

Of the tools in the Marine Protected Areas basket that might be used to look after these eight areas, the Guardians considered the marine reserve tool could be appropriate, contingent on the final form of the revised Marine Reserves Act. Marine reserve status was also considered to be appropriate for the area bounding the five china shops south of Elizabeth Island in Doubtful Sound, as long as the threats to the special values could be adequately controlled. The use of marine reserve provisions is also contingent on kaitiakitanga being appropriately expressed.

Altogether 23 china shops have been identified for consideration. Collectively these areas support a wide range of outstanding features and values. Suggested management measures are based on particular values and whether these are under threat from existing or future activities.

Eleven china shops are located within identified representative areas and therefore management may well be by the marine reserve mechanism. Threats were identified for every one of these china shops, including increased visitor numbers, diving, anchoring, dredging and fishing. Proposals for dealing with these threats have been developed and need to be able to be implemented under the provisions of the revised marine reserves legislation. However, one principle of the draft Bill - promoting marine reserves as places for public use and enjoyment - would seem to be at odds with the need to restrict visitor use and recreation. Increased numbers of divers, visitors and anchoring are the very activities that threaten the special values identified. Thought needs to be given to whether a marine reserve is the most appropriate tool for looking after special values and biodiversity that are vulnerable to non-fishing recreational activities such as increased visitor numbers, anchoring and diving.

No apparent threats were identified for nine of the remaining 12 china shops located outside representative areas. Anchoring or increased numbers of visitors were identified as threats to three china shops and the Guardians proposed alternative anchoring sites to protect these values. There are potential opportunities to manage issues within these areas and associated threats by way of Historic Heritage mechanisms under the Resource Management Act and/or the Southland Coastal Plan.

Finally, Tricky Cove, a china shop with historic scientific values may also be able to be protected as a Historic Heritage Scientific site under provisions in the Resource Management Act. It is important that what is to be achieved drives the selection of the most appropriate management tool or combination of tools. The boundaries of both china shops and representative areas will be clearly marked and publicised.

5.0 Risks to the Marine Environment

Key Objective

- **Avoid where possible, remedy, or mitigate the adverse impacts of human activities on fisheries and the marine environment.**

5.1 Identification of potential risks

Potential risks were identified from Figure 2, the schematic diagram of Fiordland's marine environment values and issues that could potentially downgrade these values. The following list of issues and associated causes was compiled:

- ***Bioinvasion***
  - Ballast water
  - Ships' hulls
  - Introduced pests
- ***Pollution***
  - Oil spills
  - Sewage
  - Rubbish/plastics
- ***Physical damage***
  - Structures
  - Anchoring
  - Ship's wakes
  - Land slips
- ***Altered flow/sediment dynamics***
  - Power generation (Meridian)
- ***Impact of increasing access (people) on wilderness values and expectations of visitors***
  - Kayaks
  - Private boats
  - Charter boats
  - Yachts
  - Cruise ships
  - Helicopters
  - Planes

Each potential issue was discussed to develop a better understanding of the risk it might present for Fiordland's marine environment. Clearly the management authorities and agencies are involved with these issues so current management initiatives were considered before the Guardians decided whether the issue warranted further consideration. Agreement that the issue did require attention resulted in an evaluation of what was needed and what the Guardians could contribute.

For issues involving risks to the marine environment, the Guardians' approach is to evaluate these on a case by case basis and adopt an advocacy role with the relevant agency where this could be useful. For instance, we have not dealt with the export of water from Deep Cove issue in this strategy because we have responded at the resource consent stage. Furthermore, the Group has not commented on aquaculture because it is listed as a prohibited activity for Fiordland in the draft Coastal Plan.

The Guardians have no intention of writing a resource management strategy or attempting to duplicate Environment Southland's role. Rather we intend to work with Environment Southland and hope to add value on the basis of the group's collective knowledge and experience. A number of the issues discussed below do not have a definitive answer. Issues such as these tend to evolve over time. The Guardians recognise the importance of playing an ongoing role in these issues.

5.2 Bioinvasion

Should an unwanted marine organism be introduced to the fiords, settle on the fiord walls for instance, and then aggressively predate the wall communities it would be catastrophic. So too would the type of organism that manages to settle and successfully expand, either out competing or suffocating the adjacent community. Such scenarios in Fiordland would be of major significance both nationally and internationally. The unusual nature of the fiord communities is no protection and the fiords remain just as vulnerable to bioinvasion as any other part of the coast. Of all likely threats to Fiordland's fisheries and marine environment, bioinvasion is possibly the most serious.

In fact, three species of algae have already been introduced to and become established in Fiordland, probably through early whaling and sealing operations in the late 18th and early 19th centuries.[9] *Champia affinis*, a native of Tasmania and South Australia, was first recorded from Stewart Island in 1855 and lives in the sheltered waters of Preservation Inlet. *Polysiphonia brodiaei*, a native of Ireland and Northern Europe, is found in Dusky Sound. In contrast, *Sargassum verruculosum*, also from Tasmania and southern Australia, has a wider distribution, being found in relatively small quantities in Bligh, Thompson, Doubtful, Breaksea and Dusky Sounds as well as Chalky and Preservation Inlets.

Fortunately none of them qualifies as a serious threat to native biodiversity - unlike *Undaria pinnatifida* that could have a devastating impact on the composition of Fiordland's kelp and animal communities.

[9] W. A. Nelson., et al. Marine Macroalgae of Fiordland, New Zealand (2002) Tuhinga 13:117-152

5.2.1 Where's the threat coming from?

As the number of people interacting with Fiordland increases so does the number and variety of potential pathways by which exotic species could be introduced. New Zealand has already received at least 150 accidentally introduced exotic marine species. These represent a wide range of organisms including algae (kelps included), sponges, jellyfish, corals, worms, molluscs, crabs and other crustaceans.

Organisms could arrive in Fiordland either directly or indirectly in a variety of ways:

- organisms could arrive *naturally* on flotsam and jetsam, on migrating animals or as planktonic forms in the currents. This is less likely than the following means;

- *fouling* (or encrusting) organisms growing on the bottoms of boats. If a boat arrives in New Zealand with fouling organisms on it, it is possible that those organisms will be knocked off, or breed in New Zealand waters, resulting in an introduction. Devastating exotic species such as the Northern Pacific sea star are fouling organisms;

- other organisms are moved around in water associated with the boat such as *ballast water*. Ballast that is pumped into a ship in one port will invariably contain organisms from that port. These can include planktonic organisms, larval stages of organisms and even whole fish. When the ballast water is discharged, those organisms are discharged and may establish in the host environment;

- transfer of organisms in equipment such as sea chests, anchor lockers, ropes, buoys and dive equipment is another known pathway.

5.2.2 W*hat's the impact?*

The full cost either to the New Zealand environment or to the New Zealand economy of exotic species is not known. However, overseas examples confirm that the impacts can be substantial. In New Zealand, algal blooms have caused the closure of some shellfish beds and been blamed for health problems in some New Zealanders. These algal blooms may have resulted from organisms brought to New Zealand in ballast water. *Undaria* has moved from port to port out competing and replacing benthic communities in associated harbours and bays. Any aggressive exotic species that invaded Fiordland could have major repercussions for the fishing and tourism economy as well as natural biodiversity.

5.2.3 *Hull fouling/cleaning*

Exotic marine organisms may be introduced to, or spread around, New Zealand on fouled vessels and associated structures. These organisms may be transferred from the vessel hull to the marine environment by falling off or being scraped off when, for instance, the vessel bumps against wharves. Organisms on the hulls could also be fertile and release spores, larvae or other propagules into the environment. Domestic vessels that have become fouled in one area of New Zealand and spend some time in another part of the coast may further spread exotic marine organisms. This could possibly be exacerbated if the vessels are cleaned in the other area. Hull cleaning

management control options are currently being developed by MFish and MfE to minimise the risk of fouling material cleaned from hulls being returned to coastal waters.

The most commonly known exotic marine species in New Zealand is undaria (*Undaria pinnatifida)* or Japanese kelp. This seaweed is already in Bluff and Stewart Island - Fiordland's backdoor. Undaria is a difficult organism to manage. MFish and DoC have initiated a programme aimed at slowing the spread of undaria around the mainland through awareness and education. Codes of practice are being developed to minimise the possibility of undaria being introduced to remote locations.

There are two potential risks for Fiordland associated with the proposed hull cleaning controls. First, national hull cleaning controls that are appropriate for the majority of New Zealand may not be stringent enough to protect Fiordland from fouling organisms. Second, individuals may not comply with the hull cleaning guidelines being developed and the isolation of Fiordland potentially increases this risk.

The Guardians have been concerned about undaria and other unwanted introductions from hull fouling for some time. The Group supports the adoption of the following code of practice to minimise the risk of introducing unwanted organisms from hulls into Fiordland:

- ***No cleaning hulls below water line and running gear within the fiords***

  Whilst this is already part of the agreement with cruise ships, the policy needs to be adopted for all vessels. The current tourist vessel practice of cleaning the superstructure and hulls above water line with biodegradable cleaners is not part of this code.

- ***Cleaning on shore must occur above the high tide mark and ensure that no fouling material or contaminated water could re-enter the sea***

  Being above the high tide mark makes this a policy for DoC's National Park Management Plan or the district plan.

- ***All vessels/structures intending to temporarily reside in the fiords for more than 24 hours to have their hulls inspected for Undaria and other unwanted organisms. Any detected unwanted organisms to be removed from the vessel/structure and disposed of on land***

  This approach is in line with the voluntary code of practice being developed between MFish and vessels operating in the sub-Antarctic and Chatham Islands. However, the situation in Fiordland is more complex, given the variety of different types of vessels visiting and no way of identifying or tracking these.

- ***All vessels/structures intending to permanently moor in the fiords to be cleaned and anti fouled before being transported to the fiords***

Note: *The Deep Cove slipway is generally only used for maintenance and emergency work - not defouling.*

5.2.4 *Ballast water*

Foreign vessels

Under the Biosecurity Act, the discharge of ballast water originating in any other country is controlled by the Import Heath Standard that only permits vessels that have either exchanged ballast water on the high sea or are carrying freshwater ballast to discharge ballast water into New Zealand's territorial sea. This poses two potential problems for Fiordland:

- freshwater ballast could harbour species that may survive in the waters of Fiordland.

- mid-ocean exchange, the only widely available quarantine procedure for reducing the risk of spreading invasive species in ballast water, is not 100% effective.

As a result, the current mandatory requirements would not completely eliminate the risk of introducing foreign ballast water, and therefore foreign organisms, into Fiordland. The majority of cruise ships do not carry ballast water and therefore are not a risk from that point of view.

Domestic vessels

Currently, there are no mandatory controls on the movement of domestic ballast water around New Zealand. As well as toxic algal blooms, ballast water can potentially spread a number of existing exotic species around New Zealand (e.g. *Undaria pinnatifida* was thought to have arrived in ballast water). The discharge of domestic ballast water into the fiords could pose a significant threat of spreading existing undesirable species.

The Guardians recognise how serious a major invasion of an unwanted exotic organism would be in Fiordland and support the following actions in relation to ballast water:

- the development of a voluntary practice that no foreign ballast water - regardless of whether it has been exchanged on route to New Zealand - is to be discharged into the fiords. This practice will need to include the caveat that compliance with this practice must be consistent with the safety of the crew and the vessel.

- the development of a voluntary practice that no domestic ballast water is to be discharged into the fiords. This practice will need to include the caveat that compliance with this practice must be consistent with the safety of the crew and the vessel.

5.2.5 *Minimising the risk of bioinvasion in Fiordland*

Like many of the issues in this strategy, there is no definitive answer to preventing bioinvasion in Fiordland but there is a positive way forward. To build on the suggestions made above, a special task force is required to develop a targeted plan specifically for the Fiordland situation. Such a group would need to involve the MFish Biosecurity Group, Environment Southland and the Guardians.

5.2.6 *Risk surveillance*

Irrespective of what a taskforce might develop, surveillance to detect unwanted visitors should not be delayed. The importance of detecting and responding to unwanted organisms has resulted in MFish establishing a surveillance programme that relies heavily on people who are informed about the issue and work or recreate in the marine area. Isolated areas such as Fiordland are difficult for management agencies to access on a regular basis. Therefore the Guardians and their associated groups have a vital role to play in detecting new exotic marine organisms in Fiordland.

The Guardians are keen to participate in the public surveillance network for exotic marine pests. To carry out this role effectively, educational and identification material will be needed from MFish's Biosecurity Group and this can be distributed to members.

5.2.7 *Action on detection*

Responding to the presence of an exotic marine pest is difficult for the responsible agencies in an isolated location such as Fiordland. The expertise and advice of those with local knowledge will prove invaluable for devising the most effective approach. Preparing a ready reaction response plan is fundamental to being properly prepared.

In the event of an exotic marine organism being located in Fiordland, the Guardians recognise that they have a responsibility to work cooperatively with the Ministry of Fisheries and Environment Southland to ensure the best possible outcome for the Fiordland's fisheries and marine environment.

5.3 Pollution

5.3.1 *Oil spills*

Spills of heavy oil that cause damage to wildlife and the marine environment may be unlikely but cannot be ruled out in Fiordland at this time. Some large vessels, such as cruise ships, still use heavy fuels whereas others operate on medium fuels. In the case of a spill, Environment Southland and Maritime Safety Authority (MSA) have comprehensive Oil Spill Response Management Plans for dealing with this threat. Generally Environment Southland will respond in the first instance, but in the case of large spills the response will be escalated and the MSA will manage the response. MSA and Environment Southland are currently developing an Oil Spill Contingency Plan for the Fiordland region and the Guardians' strategy is being used to provide relevant information about Fiordland's marine environment.

The Guardians also raised concerns about the possible impact of using certain oil dispersants in the fiords, particularly around the china shops. Because of the freshwater layer there is apparently only one dispersant that could be used. Depending on the circumstances, the group could provide logistical support and advice to either the Regional or National On Scene Commander depending on how serious the spill is.

5.3.2 *Sewage*

Given the exposed nature of the environment along the outer coast, sewage will be broken down in a relatively short period. However, the same will not be true for the inside fiord environment. If wall communities do depend on filtering out material from the forest, exposure to enriched material such as sewage may cause changes to both the habitat and those communities.

More than 12 nautical miles from the coast, sewage treatment and disposal systems used by large ocean going vessels and cruise ships must meet international MARPOL standards. Inside 12 nautical miles cruise ships have agreed not to dispose of sewage. Otherwise sewage disposal is managed according to the Resource Management Act (Marine Pollution Regulations). Although a national set of rules governing the discharge of raw or treated sewage are contained in these regulations, the special nature of Fiordland is acknowledged and Environment Southland has been able to adopt more stringent controls for sewage disposal in its Coastal Plan. For instance, the discharge of sewage (black water) from large ocean-going vessels cannot take place inside 12 nautical miles. For smaller boats, black water from tanks cannot be discharged within 500 m of the shore either within the fiords or along outer coast.

Through resource consent requirements Environment Southland has input about the sewage disposal methods used by charter vessels. However no such controls exist for private boats or yachts. Informing this group particularly, about ways to minimise the impact of discharging sewage into the fiord environment needs to be a high priority.

On national park land adjoining the fiords, sewage disposal ranges from sophisticated systems to a shovel at some kayakers' camps. Future plans for managing sewage treatment and disposal from land adjoining the fiords needs to be documented in the Fiordland National Park Management Plan.

5.3.3 *Rubbish*

Rubbish is just about the last thing that comes to mind when imagining Fiordland's marine environment. The "take it in - bring it out" philosophy for rubbish disposal is widely promoted and appreciated. However, accounts of rubbish left around huts, the Blanket Bay incinerator full of non-flammable rubbish and rubbish thrown overboard indicate that rubbish disposal is an issue.

Commercial fishers who are now very conscious of bringing out their rubbish, regularly report transporting rubbish (half a tonne at a time) discarded by others, to facilities on shore. The group discussed the infrastructure and facilities for rubbish disposal at access points. Waste disposal containers at the wharves in Milford are managed by the Milford Sound Development Authority and DoC and disposed of to the Southland District Council transfer station at Milford. In contrast, Deep Cove has no such facilities and the closest rubbish containers are at Manapouri. Given the tendency of some to leave rubbish at Deep Cove, notices and educational material promoting the removal of rubbish must be worthwhile. Onshore facilities for rubbish disposal in the national park require DoC approval.

Accounts of cans, bottles and plastics being found in quantities on the seabed is indeed disappointing. One charter operator proposed a novel way of cleaning up such rubbish by offering cost-only recreational diving trips where two of the three dives are to clear rubbish from the bottom.

This suggestion has evolved into a full scale high profile clean up initiative being project managed by Environment Southland. There are two components to the project - shoreline and below water clean ups. The shoreline component will remove water borne rubbish that has been washed up from terrestrial, coastal and offshore sources. Below water, divers will direct their attention primarily to cleaning up anchorages. Initially the focus of the project is along the southern coast with attention moving north until the whole of the Fiordland marine environment has been covered – something that is estimated will take five years.

Logistically the project has grown enormously with many different agencies, organisations and individuals contributing volunteers, funding and undertaking promotional activities. Several Guardians are involved in this exciting initiative - one that is demonstrating the enormous potential for resolving very difficult issues such as rubbish when all those involved share a common goal and goodwill.

As well as dealing to existing rubbish, such a project is a superb way of raising awareness and changing the behaviour of those who are responsible for the problem. It is important to capitalise on this project with initiatives to inform those who visit Fiordland about their responsibility to "take out what they bring in".

5.4 Physical damage

5.4.1 *Structures*

Establishing structures within the Fiordland marine environment such as wharves and moorings, and a range of servicing facilities require resource consents from Environment Southland. Consent applications may be approved, approved with conditions or declined. When notified resource consent applications are processed there is an opportunity for interested parties to make submissions/objections and be heard. Appeals against decisions can be taken to the Environment Court. If a structure extends above mean high water and is on DoC administered land a concession may also be required from DoC.

The Guardians have made submissions on, and objected to, various consent applications considered to be against the interests of Fiordland's fisheries and marine environment. On the basis of experience to date the group feels that provisions in the resource consent process can safeguard environmental values from physical damage. Furthermore, the Guardians recognise the value of working with Environment Southland over these issues.

5.4.2 *Anchoring*

Anchoring is a very specific requirement in Fiordland. Whereas safety is of fundamental importance, so too is preventing damage to the features that make the fiords special. Anchoring was identified as one of the main threats to special values within the china shop areas. Whether it be a china shop, representative area or other part of the fiords

there is good reason to anchor in locations that are not vulnerable to damage. Identifying suitable places to anchor within the china shops led to the suggestion that a map of suitable anchoring sites should be produced for the whole of Fiordland. Such a guide could contain other helpful information such as the most effective ways to anchor in different situations and advice about conditions likely to be experienced in Fiordland. This would build on Environment Southland's list of anchorages for Fiordland contained in the Southland Coastal Plan.

5.4.3 *Ships' wakes*

Cruise ships entering Fiordland are large vessels and there is a trend towards increasing size. The possibility of damage to rock wall communities caused by the ship's wake as the vessel passes through confined passages was considered. Environment Southland's agreement with the cruise ship companies and the number of available pilots currently limits the number of vessels entering Fiordland and the number that can be inside particular fiords at any one time. Vessel speed and the associated wake are controlled inside the fiords by Maritime Safety Authority speed restrictions. A navigational bylaw is replacing the water recreational regulations contained in the draft Coastal Plan that serve the same function for all vessels.

The Guardians concluded that damage from vessel wakes was not an issue at this time.

5.4.4 *Land slips*

Land slips are a natural occurrence that has been a feature of Fiordland for a very long time. From observations, colonisation of underwater landslip debris by marine communities can take place within a few years. Despite this, an unnatural increase in land slips is not desirable for marine habitats and communities. An increase in deer and possum density could increase the regularity of these events.

Responsibility for possum and deer control in the national park rests with the Department of Conservation. Whilst recognising that resources for animal control are limited, the Guardians consider the potential impact of possums and deer on the marine habitat in certain places is an issue. Local knowledge about the spread of possums and presence of deer in numbers is provided to DoC so that decisions about priority areas for control are better informed.

5.5 Altered flow / sediment dynamics

5.5.1 *Power generation (Meridian)*

The flow regime in Doubtful Sound has been modified since the Manapouri power scheme became operational and freshwater was diverted from Lake Manapouri into Deep Cove. During construction of the scheme, some workers were reputedly attracted to Deep Cove because of the quality fishery in Doubtful Sound. Accounts of plentiful catches were documented at that time and again in the 1980s but since then the state of the fish stocks has been a cause of increasing concern.

The fisheries measures proposed in this strategy assume that over harvesting is the reason for the state of the fish stocks in Doubtful Sound. Road access into Doubtful Sound and increasing numbers of fishers lend weight to that view. However, to be confident that the management measures are the most appropriate it is important to know what, if any influence the changed flow regime is having on the habitat and stocks of harvested species. Current research has revealed something of the impacts on sedentary species and it is likely that more information will become available.

The altered flow regime issue is solely to do with identifying factors that are contributing to the depleted state of harvested fish stocks in Doubtful Sound. The Guardians are anticipating that current research will provide more information about this situation.

5.6 Impact of increasing access (people) on wilderness values and visitor expectations

The most visible increase in numbers visiting the Fiordland marine environment is taking place in Milford and Doubtful Sounds. Road access, together with a fleet of tourist vessels, encourages thousands of day visitors into both Sounds, though Milford is certainly more crowded than Doubtful Sound. Crowding on the water and in the airspace over Milford Sound has reached the point where concern is being openly expressed that the values visitors' come to experience are at risk of being compromised. Public and navigational safety has also been identified as a concern. A Mayoral task force was set up to consider the visitor issue at tourist destinations including the Southern lakes and Milford Sound. As a result, a specific project was set up involving a co-ordinated inter-agency initiative to look at strategic issues associated with managing the Milford Sound situation. Environment Southland was nominated as lead agency at a recent workshop.

The increase in numbers of people visiting Fiordland is not limited to Milford and Doubtful Sounds. Increasingly innovative ways are being used to access every part of Fiordland. For instance, helicopters are being used to transport kayaks and their occupants into the most remote fiords. Charter boats, private boats, yachts, kayaks, helicopters and planes are now common throughout the whole of Fiordland. Although Environment Southland has certain controls over commercial surface water activities by way of resource consents, there are no controls on private boats, yachts or kayaks. Similarly, commercial operators require concessions from DoC to land in the national park, but no such requirement exists for private operators. Environment Southland recognises a number of different categories of visitor: the day visitor - largely restricted to Milford and Doubtful Sounds, the backcountry, comfort seeker who requires quality facilities generally provided by commercial operators and the backcountry adventurer who hunts, fishes, kayaks and tramps with the minimum of support facilities. Identifying the patterns and needs of different visitor groups is an important prerequisite to developing sensible strategies for managing the visitor issue.

From a fisheries and marine environment perspective, the measures contained in this strategy for fisheries, values of special significance and risks to the marine environment are aimed at minimising the effects of increased use on the marine environment. For instance, a number of the proposed fisheries measures are designed to manage the effects of increased fishing pressure associated with improving access. Similarly, the

kinds of diving and anchoring provisions associated with china shops and representative areas are to ensure that increasing visitor use does not destroy the very values that are attracting more visitors.

Apart from the impacts of increased numbers of people on wilderness values and the potential increase in such activities as tourism, fishing and diving, more people mean more rubbish, more sewage and more servicing facilities. Unless these issues are effectively managed, Fiordland's fisheries and marine environment are at risk. Managing numbers of visitors directly is a complex issue and one in which local knowledge held by the Guardians and associated groups will be a vital ingredient in finding practical solutions. Fiordland wide, increasing visitor pressure has such significant long term implications that an integrated approach between the relevant authorities, agencies and community is the one the Guardians' consider holds the most promise.

6.0 Expressing Kaitiakitanga

Key Objective

- **That kaitiakitanga (stewardship) be appropriately expressed for Fiordland's fisheries and marine environment.**

6.1 What is kaitiakitanga?

The Ngäi Tahu Whanui (defined under the Te Runanga o Ngai Tahu Act 1996 as the primary hapu of Ngai Tahu, Kati Mamoe and Waitaha) were principally a hunter-gatherer people dependent on seasonal harvesting. As a consequence a sophisticated system of management skills was developed based on the continuing sustainability of resources. Kaitiakitanga derives from tiaki. In a natural resources context tiaki incorporates notions of guarding, keeping, conserving, fostering, sheltering, and watching over resources. The kaitiaki - keepers or caretakers of knowledge relating to those natural resources - are appointed by the Tängata Whenua. Kaitiakitanga is the process whereby kaitiaki carry out responsibilities such as managing resources, protecting taonga and taking care of Tängata Whenua interests. In relation to natural resources, exercising guardianship in accordance with tikanga Ngäi Tahu Whanui (customary values and practices) is both a privilege and an obligation. Indeed it is an inherited obligation that cannot be alienated.

Safeguarding sustainability, looking after tauranga ika (special fishing grounds), protecting spawning grounds, and maintaining juvenile habitats were just a few of the reasons for managing mahinga kai (customary food gathering). Such practices as controlling the amount harvested were the responsibility of kaitiaki, as were setting in place rähui, or temporary closures, to rest areas or species from harvesting.

The ability to provide manaaki (hospitality) to visitors is a fundamental principle of tino rangatiratanga that reflects the status, economic power, reputation and social standing of the host people. Being able to offer an abundance of food to visitors is a sign of the wealth and mana of the Tängata Whenua and their success as rangatira and kaitiaki in preserving their local resources and cultural traditions. An inability to provide kai from your rohe is regarded as a failure to do your duty.

6.2 How is kaitiakitanga provided for in legislation today?

Through the process of settling Treaty of Waitangi claims, a number of legislative provisions that recognise and provide for customary fishing rights are now available.

In 1989, the concept of taiäpure - local fisheries, was introduced with the Maori Fisheries Act. Taiäpure are coastal waters of special significance to iwi or hapu as a source of food or for spiritual/cultural reasons. A management committee nominated by the local Maori authority has the role of recommending fishing controls for the area. In other words, taiäpure is an area management tool.

In 1992, customary fishing rights were further clarified in the Treaty of Waitangi (Fisheries Claims) Settlement Act. This took the form of an obligation to develop policies to help recognise customary use and management practices for non-commercial fishing. The Act deals with the requirement for regulations to be made to define how customary fishing could take place and defines Tängata Whenua rights and responsibilities to manage their own customary fisheries.

In 1998, the Fisheries (South Island Customary Fisheries) Regulations were introduced. The appointment of tangata tiaki/kaitiaki to manage customary fishing and the creation of mätaitai, a second type of area management tool, were among the tools that recognised the traditional fisheries management role of Tängata Whenua.

Another relevant provision under the Fisheries Act is s186B (temporary closure). This tool allows temporary closures of areas and restrictions of fishing methods much the same as traditional rähui. The difference is that rāhui remain in place for the length of time required to achieve the result whereas s186B (temporary closure) is limited to a two year period with a possible two year extension.

6.3 Ngäi Tahu Whanui association with the Fiordland coastal marine area

Ngäi Tahu Whanui association with Fiordland is long and significant, as is evidenced by numerous Maori place names that describe landscape features, routes both inland and along the shore, landing places and important events. In addition to Maori place names, other important sources of information about the association include oral traditions and archaeological evidence. The association with Fiordland was formally recognised in the Statutory Acknowledgment for Te Mimi o Tu Te Rakiwhanoa (Fiordland Coastal Marine Area) in the Ngäi Tahu Claims Settlement Act 1998 (Appendix 3).

Popular routes (now classed as Great Walks), sheltered canoe landing places, nohoanga sites where people stayed and harvested mahika kai - indeed all aspects of living in Te Mimi o Tu Te Rakiwhanoa - are recounted and explained in the statutory acknowledgment, documented in full in Appendix 3.

6.4 Expressing kaitiakitanga in Fiordland's coastal marine area: whose role is it?

Responsibility for kaitiakitanga within Fiordland's marine coastal area lies with the Tängata Whenua represented by Oraka/Aparima, the kaitiaki runanga with authority over all but a small area at the northern boundary. Support for the Oraka/Aparima role comes from three other runanga (Awarua, Waihopai and Hokonui) that belong to Murihiku (Southland) and Makaawhio. Te Runanga o Ngäi Tahu, the tribal authority representing all 18 papatipu runanga, provides an oversight/support role.

After the South Island customary fishing regulations came into law, the four Murihiku runanga appointed tangata tiaki/kaitiaki. Altogether 32 tangata tiaki/kaitiaki were appointed and each has the right and responsibility to manage customary fishing across Murihiku. Of the 32 tangata tiaki/kaitiaki, 10 are from the Oraka/Aparima runanga.

6.5 How can kaitiakitanga be appropriately expressed in Fiordland?

The whole of Fiordland holds special significance and cultural relevance for Ngai Tahu Whanui. Accordingly, an active involvement in managing Fiordland's fisheries and marine environment by Oraka/Aparima, the kaitiaki runanga and others they may select from Murihiku is clearly an appropriate way for kaitiakitanga to be expressed. Managing customary fishing by way of authorisations is already the responsibility of the tangata tiaki/kaitiaki in Fiordland. However, managing fisheries within an area by way of customary fisheries provisions such as s186B (temporary closures), mātaitai or taiāpure have all been considered as ways of implementing aspects of the Guardians' integrated strategy.

6.5.1 *S186B (temporary closure)*

S186B (temporary closures) are recommended for the harvesting of blue cod in both Milford and Doubtful Sounds. These closures are similar to rahui, but unlike rahui s186B (temporary closures) are time limited - initially for two years but this may be extended for a further two years.

6.5.2 *Mataitai*

Concern that paua can no longer be hand gathered close to shore along the southern Fiordland coastline resulted in the Waitutu Land Incorporation initiating discussions about establishing a mataitai along the coast abutting their land. A mataitai application was lodged by the Oraka-Aparima Runanga and the Waitutu Land Inc for this part of the coastline. The outcome of the application is not known at this time.

6.5.3 *Taiāpure*

Taiāpure is considered to be a suitable fisheries management mechanism for expressing kaitiakitanga over areas of significance within the Fiordland marine environment. Areas of significance to Ngai Tahu Whanui that require flexible fine scale management could benefit significantly under a taiāpure management mechanism.

The main advantages are:

- taiāpure is the only available mechanism whereby local management of Fiordland fisheries can be implemented under a single tool;
- the taiāpure - local management committee has statutory status;
- the committee is nominated by local Iwi (who are already members of the Guardians), and can include non-Maori members;
- the committee can accommodate a wide range of interests - just as the Guardians do currently;

- taiäpure allows flexibility that will be an advantage in managing discrete areas that require fine scale management;
- other management mechanisms may be able to be accommodated within a taiāpure.

Drawbacks include:

- the timeframe for processing taiäpure applications can be in the order of 2-8 years, with the longer processing times compromising the purpose of the mechanism;
- there are no resources for taiäpure committees;
- the isolated nature of the area imposes additional requirements on the management committee.

6.5.4 *Taiäpure as the overarching mechanism*

The possibility of a taiäpure fulfilling the overarching and co-ordination function for Fiordland's fisheries and marine environment has been discussed by the Guardians throughout the development of the strategy. The group supports taiäpure particularly for the expression of kaitiakitanga and provision of local management. As the strategy took shape and the non-fisheries components were developed it became clear that a complex range of functions from a number of different statutes had to be able to be co-ordinated by the overarching mechanism. Due to the nature and complexity of the co-ordinating function the Guardians recognised that legal advice was required. Advice received suggests that taiäpure may not be an appropriate mechanism to co-ordinate non fisheries aspects of the strategy and further that the expression of kaitiakitanga could be compromised in the process of appointing a management committee to carry out management functions for the Fiordland marine environment.

Note: *The purpose for which taiäpure was defined in the 1989 Maori Fisheries Act is in no way compromised by views about the suitability of this tool as an over arching mechanism.*

7.0 Implementing the Strategy

Key Objective

- **The negotiated package of measures contained in the strategy be implemented as a whole without compromising underlying principles and balances.**

7.1 The balance negotiated between groups

This strategy contains a package of management measures negotiated by the Guardians. What was required of those who currently fish in Fiordland was determined on the basis of sustainable fish stocks and the maintenance of values of special significance. Then, considerable debate took place over the contribution each group would make to ensure the outcome. The resultant package represents a balance of gifts and gains negotiated between commercial and recreational fishers, Ngäi Tahu Whanui, charter operators and environmental and community interests, and is considered to be fair and reasonable by the Guardians.

Gifts and gains: A variety of rights apply to groups involved in Fiordland's fisheries and marine environment. From the clearly defined 'property' rights of commercial fishers and inheritance based customary fishing rights, to those that have not yet been clearly defined, such as the rights of recreational fishers and environmental interests, there is considerable diversity. If these rights were equivalent, trading as envisaged in a property rights scenario might be possible. However, the rights are not equivalent and informal discussions involving all the groups proved to be the most pragmatic way of arriving at agreements about what each group was prepared to offer in the interests of Fiordland's marine environment. Gifts and gains seemed the most appropriate terms to convey the generosity and goodwill of those negotiations.

For instance, offering to withdraw fishing operations and bulk harvesting methods from inside the habitat lines represents a very generous gift on the part of the commercial fishers. Similarly, significant reductions in daily bag limits and strict controls on accumulation clearly demonstrate the commitment of recreational fishers and charter operators to the Fiordland fishery and marine environment. Ngäi Tahu Whanui (customary) contribution includes observing a voluntary rahui on the issuing of customary fishing authorisations inside the habitat lines. All groups support the package of restrictions to look after the china shops and representative area as well as the variety of measures associated with minimising risks to the marine environment. Ensuring this balance is safeguarded when the strategy is implemented is critical. Should it be compromised the integrity of the entire strategy will be compromised.

7.2 The package - more than a sum of its parts

Provisions in this strategy are not solely directed at fisheries, values of special significance and risks to the marine environment. Together, they provide a powerful combination that applies to the whole of Fiordland's marine environment. In other words, collectively the provisions ensure greater safeguards than the individual contributing parts might indicate.

Those who focus primarily on one aspect of the strategy may not appreciate the extent to which the package of management provisions advocated throughout the strategy will contribute to conserving the values of particular importance to them.

For instance, recommendations for representative areas and some china shops include management controls associated with marine reserves. That commercial, recreational and customary fishers are prepared to relinquish their rights and withdraw from the areas identified to conserve biodiversity (the purpose of the Marine Reserves Bill) is a major gift.

Recommendations about sustainability of fish stocks actioned under fisheries legislation also have positive implications for conserving biodiversity. The withdrawal of commercial fishing from inside the habitat lines of all the fiords and the adoption of "fish for a feed - no accumulation" by recreational and customary fishers for these same areas is a key contribution.

As well as marine reserve and fisheries tools (including the South Island Customary Fishing Regulations), relevant provisions in the Resource Management Act and the Southland Coastal Plan have also been identified and recommended to protect the fiord habitat and communities.

Arguably the most significant threat facing the Fiordland marine environment is the invasion by unwanted organisms such as undaria. Given the impact such an occurrence could have along the whole of Fiordland's coastline, a task force to develop hull cleaning and ballast codes, a risk surveillance network and ready response plan is considered a top priority for protecting the marine environment.

Similarly, minimising the impact of oil spills by developing contingency plans is strongly supported, as are rubbish clean up initiatives and the management of sewage disposal. Physical damage to the habitat from structures and anchoring are also the subject of recommendations. By managing the effects of activities at specific sites, or more generally, the potential impact on habitat values can be avoided or minimised.

Given that some of the above provisions are generic to Fiordland's marine environment and others are specific to individual fiords, every fiord has its own particular package of management measures.

For instance, the package for Charles Sound includes:

- possible marine reserve provisions and the withdrawal of commercial, customary and recreational fishing from the whole of Gold Arm that includes both a china shop and representative area;
- in Emelius Arm, provisions of the Historic Heritage provisions of the Resource Management Act may be appropriate for ensuring the values of the china shop located there;
- a rahui on customary fishing authorisations inside the habitat lines;
- commercial harvesting withdrawn from inside the habitat lines;
- amateur bag limits reduced significantly inside the habitat lines and some reductions outside the lines;
- a cap on accumulation;
- removal of bulk harvesting methods applies both inside and outside the habitat lines;
- codes of practice regulating hull cleaning and ballast exchange, a risk surveillance network and ready response plan;
- an oil spill contingency plan;
- rubbish clean up exercises;
- sewage disposal codes;
- structure and anchoring provisions.

Such a package for each fiord addresses a wide range of actual and potential risks to the values that make Fiordland's marine environment special. The Guardians are confident that these special values can be effectively safeguarded by a package of measures tailored to individual fiords.

An evaluation of the package of measures recommended by the Guardians for Fiordland's fisheries and marine environment revealed that:

1. every provision in the strategy fits into the Marine Protected Areas toolbox.

2. every provision in the strategy contributes to the conservation of biodiversity.

3. together, all the provisions in the strategy provide a local working example of Oceans Policy - a holistic approach to managing a highly valued part of our marine environment by a community/agency group that crosses agency and statutory boundaries.

7.3 Overarching co-ordination of existing statutory provisions

Central to the draft strategy is one of the Guardians' premises - that existing statutory mechanisms should be used to implement the package. Indeed, existing statutory provisions are sufficient to implement all components of the draft strategy.

Provisions within the fisheries legislation, including customary regulations, cover the proposals contained in the fisheries and kaitiakitanga (fisheries) components. For example, method restrictions, daily bag limit changes, accumulation provisions and temporary closures are all provided for within the fisheries legislation. Management of customary take, s186B, mataitai and taiäpure - local fisheries are provided for in the customary regulations and fisheries legislation respectively.

Conservation and resource management legislation contain provisions that are relevant for implementing the values of special significance and risks to the marine environment components of the draft strategy. For instance, the revised marine reserves' legislation is likely to be appropriate for the representative areas and the Resource Management Act for the china shops outside representative areas.

The need for some form of overarching co-ordination is clear, given the number of legislative provisions and agencies that might be involved in implementing the strategy should it be adopted. Ensuring the integrity of the package during implementation is an absolute must for the Guardians. Issues such as significantly different timeframes associated with implementing different management measures within the strategy will involve the Guardians in an important ongoing role.

During discussions about overarching legislative provisions, the Fisheries Plan provision contained in the 1996 Fisheries Act was raised. Although the fisheries component of the strategy might qualify as a Fisheries Plan this provision is not suitable as an overarching mechanism. Fisheries Plans are restricted to fisheries matters and there is no formal link to conservation or resource management provisions. Furthermore, there is no provision for a group that develops a Fisheries Plan to be recognised as a management committee. Given the length of commitment and expertise involved in developing this draft strategy, the Guardians anticipate an ongoing role through implementation and into the longer term. Certainly, this continuity is required for the strategy to be successfully put in place.

Although there are currently no overarching statutory provisions in legislation, the Guardians discussed two possibilities for conferring advisory/management status over an area of the coast on a local group: taiäpure and special legislation. The Guardians have considered both options in detail and decided on the basis of legal advice that the taiäpure mechanism may not be appropriate for fulfilling the overarching function.

7.3.1 *Special legislation*

Because special legislation offers flexibility, the major issue with this option is defining what needs to be incorporated. For instance, over-arching legislation needs to guarantee the balance of gifts and gains that underpins the strategy, incorporate the expression of kaitiakitanga and provide for joint community/agency management. According to legal advice this option could be complex but feasible.

The Guardians decided that defining what the group felt was needed in the legislation was the most constructive action they could take at this time, recognising that the development of special legislation is the role of government and officials (should the strategy be adopted).

Special legislation must:

- guarantee the balance of gifts and gains that underpins the strategy;
- incorporate the expression of kaitiakitanga;
- define how special legislation links across the existing legislative provisions;
- provide a framework for implementing recommendations using existing statutory mechanisms;

- define the establishment and statutory functions of a combined community/agency management group;
- define membership of the community participants according to a set of criteria that reflects the strengths of the current Guardians (local knowledge, experience and expertise with particular emphasis on an active involvement in the fiords);
- define regional co-ordinating functions and the agency/authority responsible for this role;
- incorporate the need to adequately resource the management committee;
- provide flexibility for future management needs.

Note: *The name given to an area managed under special legislation is simply the choice of those advocating that status. For instance, this Fiordland Marine Conservation Strategy could be afforded statutory status by special legislation. Similarly, special legislation was used to establish the Hauraki Gulf Marine Park.*

The term "marine park" is simply a name for the area - there is no Marine Parks Act. What is common between this Fiordland Marine Conservation Strategy and examples of marine parks is the range of activities that are accommodated whilst providing for the conservation and protection of the marine environment. To the Guardians' the title Fiordland Marine Conservation Strategy expresses the motivation of the group and the values of Fiordland's marine environment more appropriately than the term "marine park".

7.4 Implementing statutory and non-statutory recommendations

To implement recommendations that are subject to existing statutory provisions, the agencies/authorities with responsibility for administering fisheries, conservation and resource management legislation need to evaluate the recommendations against statutory management tools. Officials need to work with the Guardians to ensure the most appropriate and effective tools are used.

Implementing recommended actions that are not controlled by statutory mechanisms could be carried out in the short term by the Guardians/agencies/authorities or in the longer term by the community/agency management group established under the special legislation.

8.0 Compliance with the Strategy

Key Objective

- **Encourage voluntary compliance and reinforce the view that non-compliance is unacceptable behaviour[10]**

8.1 Compliance needs in Fiordland

The Guardians recognise that high levels of voluntary compliance of existing law and new legislative provisions are critical to the success of the management regime proposed for Fiordland's fisheries and marine environment in this strategy.

From a compliance perspective Fiordland is a very challenging environment - it is isolated, the coastline is extensive, access is limited, even with a vessel, and the weather can be unrelenting. However, feedback from the wider groups represented on the Guardians makes it clear that effective compliance and enforcement in Fiordland are fundamental if rules are to be seen to be fair to everyone. Laws will not be observed unless the users accept the law is both necessary for achieving an important goal and adequately enforced.

The package of voluntary and statutory management mechanisms proposed is diverse, reflecting the very different needs of an extraordinary combination of low productivity animal dominated communities inside the fiords and productive kelp based communities at the entrances and along the outer coast. The diversity in management measures is also a consequence of integrating very different components of the Fiordland marine environment together into the strategy. Implementing such a range of measures will involve a number of different statutes. The more important of these are administered by three agencies: the Ministry of Fisheries, Department of Conservation and Environment Southland. When the management package is implemented, compliance of the new rules will be the responsibility of the agency that administers the relevant statute. Therefore an innovative and co-operative approach to compliance is needed on the part of the agencies involved, the Guardians and those who are regularly in Fiordland. Such an approach is necessary if the integrity of the management package is to be ensured.

[10] **Compliance - a comprehensive account**
Because the issue of effective compliance in Fiordland is one of the Guardian's highest priorities, a comprehensive account of every aspect has been compiled and is included as Appendix 4. The legislative mandate, objectives, approaches and resources of each key agency with responsibilities in Fiordland are documented. So too is the role that fishers and marine environment users can play. To become better informed about compliance, Appendix 4 is required reading.

8.2 The fundamentals of compliance

Irrespective of whether compliance is carried out by MFish, DoC or Environment Southland, the following two basic principles underlie the approach of these agencies.

- the preferred outcome is voluntary compliance with the rules, encouraged by information and education.
- voluntary compliance must be backed up by an effective deterrent against illegal activities, such as the fear of prosecution.

This carrot and stick approach generates a number of compliance activities, including:

- informing and educating fishers and other users about the rules in the management package.
- being the eyes and ears on the water (surveillance).
- supporting enforcement action (prosecution).

8.3 A support role for the Guardians

From the Guardians' perspective there is a crucial support role to play in these compliance activities:

8.3.1 *Informing and educating fishers and other users about the management package*

Those who either work in, or visit Fiordland regularly can play a major role in encouraging voluntary compliance with fishing and other rules. Key groups include charter boat and helicopter operators, commercial fishers, private vessel syndicates and sport fishing and diving clubs. The majority of first time fishing in Fiordland takes place from a charter vessel, private syndicate vessel or during an organised fishing or dive club visit. For this reason it is important that the operators or trip organisers take ownership and responsibility for informing those on board about the rules and ensuring that activities take place within the rules.

Explanations can be positively reinforced by information contained in attractive pamphlets and posters. The Guardians 1996 code of practice entitled *"Beneath the Reflections: Caring for Fiordland's Fisheries"* includes a guide to taking care of the fish and the marine environment. This has been widely distributed to recreational charter vessels fishing clubs, businesses associated with Fiordland, access and transport points into Fiordland and a range of agencies. The agencies also hold a variety of helpful educational pamphlets and codes of practice covering such topics as "*Handling and measuring rock lobster*" and "*a care code for divers*", part of the Fiordland Marine Reserves pamphlet.

An important component of implementing this strategy will be the production of material describing and explaining the package of management measures. Given that some fisheries provisions will relate to fine scale management of Fiordland fish stocks while others, such as area closures, will apply to particular fiords, informing fishers and other users of the local rules will be of critical importance.

It is clear that a booklet or pamphlet will be needed - and this would best be a combined effort on the part of the Guardians, MFish, DoC and ES. In addition to a single document containing all the information, there is the potential to produce codes of practice for particular parts of the strategy, such as the china shops, or for particular fiords that are subject to a variety of provisions. A co-ordinated approach to informing and educating Fiordland visitors about the management package is a task the Guardians and the agencies intend to focus on once the draft strategy is finalised.

8.3.2 *Being the eyes and ears on the water*

In remote areas like Fiordland, where agency resources are limited, the importance of networks with key users and commercial operators is critical. For those visiting the fiords, engaging the eyes and ears is a worthy way of caring for Fiordland's fisheries and marine environment. Observing what's happening and passing relevant information on to the agencies as soon as possible provides a very valuable service. The agencies rely on such information. Building successful information networks and collecting accurate and timely information about possible illegal activity enables effective follow up and results.

MFish, DoC and ES all recognise the value of "eyes and ears" in the community and out on the water. Establishing effective networks, liaison, protocols, and strategic alliances with the other agencies for the purpose of information sharing is also seen to be vital. Working together and with the community is regarded as the best way of covering the extensive Fiordland coastline.

8.3.3 *Supporting enforcement action*

Providing relevant information to compliance may result in the detection of an offence. However, being prepared to go the next step and give evidence at a prosecution could make the difference between a successful and unsuccessful outcome for Fiordland. The agencies need both types of support if prosecutions are to be successful and the necessary deterrent to illegal activities maintained.

8.4 Local knowledge and compliance planning

The remoteness and isolation of Fiordland imposes considerable logistical difficulties and high costs on enforcement agencies in carrying out both proactive and reactive enforcement. Enforcement in all reality remains a necessary back up to an effective education and awareness programme, with enforcement resources targeting, where possible, repeat and aberrant offenders.

These types of limitations make a co-operative compliance effort the only sensible approach for Fiordland. Support from the wider groups represented on the Guardians must play a major part if effective compliance is to be achieved along this part of the coast. The group considers that a joint effort should be fostered between the agencies and the Guardians over aspects such as developing and distributing information, surveillance, reporting and providing evidence at prosecutions.

Just as the Guardians and agencies have worked together to develop this integrated management strategy, the detailed local knowledge held within the group should prove very helpful to the agencies in designing an integrated compliance strategy for Fiordland. Inter-agency co-operation and improved co-ordination of enforcement resources is essential to ensure limited agency resources and funds are utilised in the most efficient manner. The Guardians support an integrated enforcement approach by the various agencies to ensure that the best results and compliance outcomes are achieved for Fiordland.

9.0 Monitoring the Performance of the Strategy

Key Objective

- **Evaluate whether the package of management measures is achieving the objects of the integrated management strategy.**

As with many strategies, evaluating success can be difficult and expensive. However, it is a task that is fundamental to understanding how well the strategy is performing. Without this information, there is nothing on which to base future management decisions. There is also a responsibility to monitor the strategy when significant resources have gone into developing it and livelihoods are being affected.

9.1 Indicators

To monitor the effectiveness of the Guardians' Fiordland Marine Conservation Strategy should it be adopted and implemented, potential indicators of success were identified for each component of the strategy. These indicators are only initial suggestions and considerable work will be required to develop and implement appropriate indicators should the strategy be adopted.

Note: *The resources required to monitor all the indicators throughout Fiordland is bound to be prohibitive. Accordingly a selection system to achieve the most effective cover will need to be developed.*

9.1.1 *Fisheries indicators*

- The state of the blue cod, rock lobster and groper stocks and fisheries in Milford and Doubtful Sounds is improving.
- The state of the blue cod, rock lobster and groper fisheries inside the habitat lines in selected northern and southern fiords is improving.
- Recreational and charter boat fishers are familiar and complying with the rules.
- Fishers understand and appreciate why the rules have changed.

9.1.2 *Values of special significance indicators*

- Special values in china shops are maintained or enhanced.
- Damage is not evident to special values in china shops.
- Educational material about how to look after the china shops is widely available.
- People using china shops are familiar with codes of practice and adhere to them.

- There is no evidence (direct/indirect) of activities such as fishing or recreational diving that was excluded from representative areas taking place.

- Special values within representative areas are maintained/enhanced.

- Representative areas are properly marked and information freely available.

- Visitors understand and appreciate the role of the representative areas and why restrictions are in place.

9.1.3 *Risks to the marine environment indicators*

- Knowledgable community input into decisions about issues that impact on Fiordland's fisheries and marine environment increases (e.g. submissions on consent applications).

- Guardians' principles about risks to the marine environment are apparent in documentation and practice.

- Impacts of damaging practices are being controlled and not increasing.

9.1.4 *Expressing kaitiakitanga indicators*

- Oraka/Aparima Runanga, tangata tiaki/kaitiaki and Te Rünanga o Ngäi Tahu are comfortable with the way kaitiakitanga is being expressed in Fiordland.

- Representatives of Oraka/Aparima Runanga take part in implementing management mechanisms associated with the strategy.

- Kaitiakitanga is understood and appreciated by locals and visitors to Fiordland.

9.1.5 *Overview indicators*

- The whole package of management measures has been implemented.

- The stakeholders feel positive about the success of the plan 3-5 years on.

- The strategy has met the expectations of the Guardians.

9.2 Measuring indicators

Once indicators have been identified, methods that best measure each indicator can be explored and evaluated. For some indicators, such as 'damage not evident to values in china shops', direct observations/measurements are possible. For others, such as "the state of the rock lobster stocks and fisheries in Doubtful Sound are improving", indirect methods must be used. Measurements that evaluate such things as "whether people know and understand the rules", are based on the assumption that well informed fishers are more likely to observe the rules than those who are poorly informed. This type of measurement will be meaningful assuming the grounds on which it is based are correct.

9.2.1 *Baseline information*

To gauge whether Fiordland's fisheries and marine environment are undergoing beneficial changes, information about the current situation is needed. Without this baseline data there will be very little to compare future monitoring data with. Accordingly, the potential of current research to provide baseline data about the indicators listed above needs to be assessed.

Current research - Fisheries indicators

1. *The state of the blue cod, rock lobster and groper stocks and fisheries in Milford and Doubtful Sounds will be improving.*

   - A recreational fisheries research project, "to determine the feasibility of estimating areas fishes, species targeted and caught, methods used and to estimate the total recreational harvest from Milford Sound and the Doubtful Sound complex from private boats" is being funded by MFish and conducted by Rick Boyd, Kingett Mitchell.

   - This project will provide an indirect measure of the current state of the blue cod, rock lobster and groper stocks and a direct measure of the fisheries within Milford and Doubtful Sounds. Baseline information on other fish stocks and fisheries will also be gathered.

   - A second recreational fisheries research project, "to determine areas fished, species targeted and caught, methods used and to estimate the total recreational harvest from charter boats for the whole of Fiordland" is also being conducted by Rick Boyd, Kingett Mitchell. This will provide the charter boat fishing component of recreational harvests for both Milford and Doubtful Sounds.

2. *The state of the blue cod, rock lobster and groper fisheries inside the habitat lines of selected northern fiord and southern fiords will be improving.*

   - The charter boat research project will provide information about the current state of blue cod, rock lobster and groper stocks and fisheries inside a number of fiords, both inside and outside the habitat lines.

   - A project studying "the relative abundance and movement of blue cod in Fiordland" is being funded by MFish and conducted by Glen Carbines, NIWA. Relative abundance of blue cod has been assessed from the head to the mouth of Dusky Sound using a cod pot method. Results demonstrate this technique is suitable for application in other sounds, particularly those further north that are considered to be subject to, or at risk from local depletion. In the movement component of the study blue cod have been tagged from the head to the mouth of Dusky Sound. Returns from recreational fishers and follow up cod potting is showing how little blue cod move within the sound. Together the study is providing an insight into the state and behaviour of blue cod stocks both inside and outside the habitat lines in what is regarded as the best sound for blue cod in Fiordland (see Section 3.3.2).

- The development of spatial population models for blue cod (*Parapercis colias*) and sea urchin (*Evechinus chloroticus*), two indicator organisms, is also the subject of a research study by Steve Wing, University of Otago.

Current Research - Environmental indicators

1. *A Geographical Information System (GIS) to support management of marine resources and biodiversity in Fiordland.*

   Stephen Wing, University of Otago and Franz Smith, Department of Conservation Science and Research are developing a Geographical Information System (GIS) to support the management of marine resources and biodiversity in Fiordland. Funding for this programme has come from the Department of Conservation and the Ministry for the Environment.

   Incorporating layers of data about a variety of habitat features into the GIS will allow the identification of spatial patterns of Fiordland's marine resources and biodiversity. Layers include: bathymetry, hydrography (encompassing climatological temperature, salinity, and wave exposure), type of substrate, shallow water habitat types as well as distribution of habitat forming organisms (macro algae, suspension feeding communities), distribution and abundance of "critical" species, indicator species and species of special concern.

   The GIS is a tool that incorporates baseline data for habitat and community definitions and evaluations. Depending on the ongoing collection of baseline data it should prove a very useful tool for assessing and monitoring changes to key indicator species and communities, particularly changes that result from implementing management actions proposed in this strategy. Ecological information to support the development of future proposals about biodiversity and other habitat and fisheries issues is also expected.

10.0 Implementation and Beyond – What role for the Guardians?

The Guardians are demonstrating the value of combining local skills and knowledge with agency advice. This is proving to be a credible alternative to existing management approaches as the group provides a forum for the agencies to step outside their own boundaries and think about the issues collectively. That the Guardians are facilitating a more holistic approach that is inclusive of the stakeholders enables the group to provide oversight for the management of Fiordland's fisheries and marine environment.

The group has a vision, is demonstrating leadership and has processes in place. Furthermore, an enormous commitment was required to develop the draft strategy. For instance, during 2001/2002 members took time off work to attend 12 all day meetings and eight information/feedback meetings with stakeholders throughout Southland and Otago. Whilst this level of commitment may be sustained in the short term, performing an overarching co-ordinating role effectively will require the local advisory/management group to be formally recognised and funded.

10.1 Necessary functions identified from the strategy

It is difficult to anticipate all the possible roles the Guardians might usefully perform during and beyond implementation if the strategy is adopted. However, the following list of functions has been extracted from the strategy and provides an indication of the need for an ongoing role:

10.1.1 *Implementing the overarching mechanism*

Provide input and advice to those with responsibility for designing/implementing the overarching mechanism to ensure the balance of gifts and gains is safeguarded.

10.1.2 *A major involvement advocating for and advising on legislative provisions to implement the package of management measures proposed in the strategy*

This would involve:

1. advising both local and national authorities and agencies about the rationale for the recommended provisions, and in particular the gifts and gains that are inherent in the management measures. Without an appreciation of the gifts and gains negotiated by the Guardians' within the package, implementing particular provisions could well compromise that balance;

2. Evaluating draft legislative provisions and providing feedback.

3. Advising about the practicality of particular legislative provisions in the Fiordland situation.

These functions would ensure the following measures are implemented in the most effective and practical manner:

- *Fisheries measures* - a whole range of regulatory measures including area, bag and accumulation limits and method restrictions.

- *China shops* - Resource Management Act provisions for a number of china shops including anchoring and diving measures. Marine reserve provisions for china shops located within representative areas. Codes of practice tailored to each china shop.

- *Representative areas* - marine reserve provisions with appropriate measures for each area.

- *s186B/mataitai/ taiäpure* - work with the Oraka Aparima rununga and the Murihiku tangata tiaki/kaitiaki to progress s186B, temporary closures for blue cod in Milford and Doubtful Sounds and mataitai/taiapure applications.

10.1.3 *Approaches and information/education associated with the strategy proposals*

- **Risks to the marine environment:**

  1. *Bioinvasion* - work with ES and MFish's, Biosecurity Group to develop an appropriate approach to hull cleaning and ballast for Fiordland.

  2. *Risk surveillance* - carry out surveillance to detect new organisms.

  3. *Emergencies such as oil spills.* - Provide logistical support and advice.

  4. *Rubbish* - Provide information and education.

  5. *Anchorages and anchoring* - produce information about the distribution of anchorages throughout Fiordland (based on the maps in the Coastal Plan) and advice about Fiordland marine conditions that can impact on safe anchoring.

  6. *Possums/deer* - provide information about possum/deer distribution to DoC.

  7. *Access* - contribute ideas on the issue and take part in initiatives if invited.

- *Compliance* - information and education about the new rules.

- Information and education about the strategy and new provisions - a very significant task.

10.1.4 *Compliance*

The eyes and ears in Fiordland, providing information to the agencies, integrated agency / Guardians approach to compliance.

10.1.5 *Monitoring*

Identify the most effective monitoring tools and approaches and providing input.

10.1.6 *Identify information gaps and needs - advocate for projects to fill the gaps*

e.g. relative abundance studies of blue cod in the accessible fiords.

10.1.7 *Provide contacts for surveys and research*

Ensure that the methods and approach are realistic for Fiordland.

10.1.8 *Work with members' wider groups to address issues of relevance*

e.g. rock lobster pot storage.

This list of possible roles will undoubtedly change and evolve with time and is very much dependant on whether the Government decides to implement the strategy and in what way this is achieved. What is certain is the importance of retaining local experience and knowledge from those actively involved in Fiordland's fisheries and marine environment.

10.2 The strategy - future flexibility

The package of measures contained in this strategy is considered to be in the best interests of Fiordland's fisheries and marine environment at this time. The Guardians are well aware that neither Fiordland's fisheries nor the marine environment will remain static. Aspects of the environment and patterns of use are bound to change over time. Accordingly, management must be flexible and responsive. For instance, it would be unrealistic to imagine that every provision contained in this strategy would remain as relevant to the needs of Fiordland's fisheries and the marine environment in say 10 years as it is now.

That is the purpose of the monitoring programme - an integral part of the strategy. Implementing the strategy will take time - time in which baseline monitoring of the indicators could usefully be initiated. Monitoring indicators will provide information about how effective the management measures are. Furthermore, monitoring, together with the observations of those who spend time in the fiords will detect changes that may need future attention. Such changes might include the identification of further areas of outstanding abundance and diversity (china shops) or an increase in one or more of the harvested fish species that justifies a revision of the management rules.

If a newly constituted community/agency group is created to fulfil management functions specified in the Guardians' strategy, each issue will need to be considered on its merits and in the context of the balance of gifts and gains that might be appropriate at that time. In other words, the balance of gifts and gains is not set in concrete but will depend on the issues, the information and goodwill among those negotiating.

Just as this strategy draws together many threads in the best interests of Fiordlands fisheries and marine environment, in the future the same approach may produce a strategy that looks quite different but is still in the best interests of Fiordland's fisheries and marine environment at that time.

Acknowledgements

The Guardians wish to thank all those who so generously shared their knowledge with the group in the interests of Fiordland's fisheries and marine environment. Many of the proposals in the strategy have benefited from this information. Chris Paulin and Paddy Ryan addressed the Guardians when producing "Fiordland Underwater" and Chris deserves a special mention for his part in shaping the Guardians views. Thanks also go to both Trevor Willets and the owners of Kisbee Lodge for their presentations to the group.

Similarly, we are very grateful for the feedback received about the suggestions the Guardians presented during the information meetings held in Southland and Otago and also the many submissions received on the draft strategy. This provided valuable input to the proposals contained in this strategy.

To our three peer reviewers: Ken Grange (NIWA), Nici Gibb (SeaFIC) and Nigel Scott (Ngai Tahu), your thoughtful, constructive input to the draft has added real value and we thank you most sincerely.

Invaluable support and advice has been a consistent feature of the agencies involved in this initiative over the past two years. Environment Southland, DoC, MFish and more recently MfE have all contributed very significantly - it's been a real pleasure working with this group of agency people and it's also been fun.

We were very fortunate that Hayley Suter was available to carry out the analysis of submissions - a challenging job delivered brilliantly. Janelle McDonald managed all the support aspects of the submission process and the result was a well organised and efficient process. Vital administrative support has been provided by Sharon Woodward and more recently by Janelle without whom the Guardians operations would have been rather more challenging and this strategy may not have seen the light of day.

Our "Beneath the Reflections" image is the product of Mike Hodges' artistic talent - and is something we are delighted to incorporate into every aspect of the Guardians' communications.

And for the occasional special gestures that keep voluntary groups together and smiling, such as celebrating important achievements and that end of the year BBQ, we thank the Fiordland Lobster Company.

To those who have helped fund the development of our draft strategy we are greatly indebted. The generous MfE Sustainable Management Fund grant, the Pacific Development and Conservation Trust grant and the contributions from MFish, DoC, and Environment Southland have all bought the reality of an integrated management strategy for Fiordland's fisheries and marine environment that much closer.

And finally, to the contributions of groups represented on the Guardians - the CRA8 Management Committee, NZ Paua Management Company, Fiordland Travel, the Waverly, Gore Boating Club, South Coast Underwater Divers Club and Mataura Licensing Trust. Your investment in the group will hopefully bring major benefits for Fiordland's fisheries and marine environment.

Appendix 1

Figures 6 - 18: Maps of individual fiords showing habitat lines, china shops, representative areas and associated rock lobster pot storage areas

Appendix 2

Amateur fishing rules: present and recommended

Table 4: Present daily fish species limits (for main species) and bag limits applying within Fiordland and the Southland Fisheries Management Area (FMA5)

Finfish Species	Daily Species Limit per Person	3 days Accumulation per Person	7 days Accumulation per Person
Blue cod	30	90	210
Trumpeter	15	45	105
Seven gilled shark	1	3	7
Combined bag limit	30	90	210
Jock Stewarts	No Limit	-	-
Groper*	5	15	35

***Note**: The daily bag limit for groper is over and above the combined finfish bag limit of 30.*

Table 5: Present daily shellfish species limits (for main species) and bag limits applying within Fiordland and the Southland Fisheries Management Area (FMA5)

Shellfish Species	Daily species limit per person	3 days Accumulation per person	7 days Accumulation per person
Rock lobster	6	18	42
Paua	10	30	70
Scallops	10	30	70

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Table 6: Recommended amateur/customary fishing measures within the Fiordland area

Finfish/Shellfish Species	Daily Species Limit/ person inside Milford and Doubtful Sound Habitat Lines	Daily Species Limit/Person inside Fiord Habitat Lines	Daily Species Limit/Person outside Fiord Habitat Lines	Accumulation provisions
Blue cod	*** s186B(2+2?years)	3	20	No accumulation
Groper*	2	3	5	No accumulation
Jock Stewarts**	10			No accumulation
Combined fish bag limit	30			No accumulation
Rock lobster	2	3	6	Maxm. 3 days accumulation of 15****
Paua	10			No accumulation
Scallops	10			No accumulation

* Groper species daily limit included in combined finfish bag limit of 30.
** New daily limit for Jock Stewart (Sea Perch) inside the combined finfish bag.
*** s186B is a customary measure that provides for temporary closures relating to a fishery.
**** Allows for a maximum daily take limit of 6 rock lobster with a maximum possession and accumulation limit of 15 rock lobster per person for trips of three days or more.

Note:*Capping accumulation of rock lobster to a maximum of 15 for three days or more and removing accumulation for finfish and the two main shellfish species can be implemented by a regulation change to the current amateur fishing defence provisions.*

Appendix 3

Schedule 102

Sections 205, 312 and 313

Statutory Acknowledgement for Te Mimi o Tu Te Rakiwhanoa (Fiordland Coastal Marine Area)

Statutory Area

The statutory area to which this statutory acknowledgement applies is Te Mimi o Tu Te Rakiwhanoa (Fiordland Coastal Marine Area), the Coastal Marine Area of the Te Anau constituency of the Southland region, as shown on SO Plan 11503, Southland Land District, as shown on Allocation Plan NT 505 (SO 19901).

Preamble

Under section 313, the Crown acknowledges Te Runanga o Ngäi Tahu's statement of Ngäi Tahu's cultural, spiritual, historic, and traditional association to Te Mimi o Tu Te Rakiwhanoa as set out below.

Ngäi Tahu Association with Te Mimi o Tu Te Rakiwhanoa

The fiords of this region represent, in tradition, the raised up sides of Te Waka o Aoraki. The waka (canoe) foundered on a submerged reef and its occupants, Aoraki and his brothers, Raraki, Rakiroa and others, were turned to stone. They stand now as the highest peaks of Ka Tiritiri o te Moana (the Southern Alps). The fiords at the southern end of the Alps were hacked out of the raised side of the wrecked waka by Tu Te Rakiwhanoa, in a effort to make it habitable by humans. The deep gouges and long waterways that make up the fiords were intended to provide safe havens on the rugged coastline, and stocked with fish, forest and birds to sustain travellers.

For Ngäi Tahu, traditions such as these represent the links between the cosmological world of the gods and present generations, these histories reinforce tribal identity and solidarity, and continuity between generations, and document the events that shaped the environment of Te Wai Pounamu and Ngäi Tahu as an iwi.

Particular stretches of the coastline also have their own traditions. The visit of Tamaahua to Piopiotahi (Milford Sound) in search of Poutini, who had absconded with his wife Waitaiki, is linked to the creation of Pounamu further north on Te Tai Poutini (the West Coast). The koko-takiwai which is found in Piopiotahi has its basis in a visit to Piopiotahi by the waka Tairea. A woman, Koko-takiwai, and her children, known as Matakirikiri, were left behind by the Tairea and were turned into varieties of pounamu.

Place names along the coast record Ngäi Tahu history and point to the landscape features that were significant to people for a range of reasons. For example, in his voyage around the Sounds in the waka Takitimu Tamatea gave the chiselled terrain the name "Te Rua-o-te-moko", likening the deep gouges adorning the impressive cliff faces of the fiords to the tattoos on a chief's face. Martins Bay (Whakatipu-waitai or Kotuku) to the north of the fiords was the site of an old settlement, located to control the pounamu resources to be found here. An area of Doubtful Sound is known as Kahui-te-kakapo, while Dagg Sound had a canoe harbour known as Te Ra. Breaksea Island (within Breaksea Sound - Te Puaitaha) is known as Te Au Moana, referring to the ocean current that sweeps around the inlet. Cape Providence is known as Orariki, a cliff near here is called Taka-o-te-karehu-Tamatea, referring to an episode when some tattooing ink belonging to Tamatea washed over board. Chalky Sound is known as Taiari and a rock in the Sound is known as Te Kakahu-o-Tamatea, a place where Tamatea had his clothes spread out to dry after being drenched by the salt spray. Preservation Inlet has the name Rakituma.

The area was visited mainly by Ngati Mamoe and Ngäi Tahu, who had various routes and nohoanga for the purpose of gathering koko-takiwai and manu (birds), particularly the kakapo. The area played a significant role in the history of conflict between Ngäi Tahu and Ngati Mamoe, with a number of Ngati Mamoe taking refuge in the isolation of the fiords in order to escape the unforgiving attitudes of some sections of Ngäi Tahu. The noted rangatira Tarewai from Otago Heads met his end here at the hands of Ngati Mamoe, having pursued them from the Otago Peninsula to Rakituma. Tarewai and his warriors were successfully ambushed by those they were pursuing, with the result that no-one ever returned to Otago from this battle. Te Whare Pa in Rakitimu was the scene of one of the last major battles between Ngati Mamoe and Ngäi Tahu.

Another dark piece of history occurred at Te Tauraka o te Hupokeka (Anita Bay). Hupokeka and his whanau (family) regularly visited Piopiotahi, travelling from Murihiku to gather koko-takiwai, and staying at a nohoanga in Anita Bay. It was here, in the 1820s, that he and his whanau were slaughtered by sealers in retribution for an incident of which they were quite innocent.

Because of its attractiveness as a place to establish permanent settlements, including pa (fortified settlements), the coastal area was visited and occupied first by Ngati Mamoe and later by Ngäi Tahu. Through conflict and alliance these two iwi have merged in the whakapapa (genealogy) of Ngäi Tahu. Battles sites, urupa and landscape features bearing the names of tupuna (ancestors) record this history. Prominent headlands, in particular, were favoured for their defensive qualities and became the headquarters for a succession of rangatira and their followers. Notable pa and nohoanga occurred in many areas on the Fiordland coast including: Milford (Lake Marchant) and Caswell Sounds; Kahui-te-kakapo (Doubtful Sound), known as the gathering place of the kakapo, in reference to the gathering of kakapo meat and feathers which was one of the key reasons that Ngäi Tahu Whanui regularly travelled to the fiords; Dagg Sound gets the sun all day, and consequently is well known as a nohoanga site, it also has a good canoe harbour known as Te Ra; Rakituma is the site of several pa or nohoanga including one at Matauira and another at Te Whare Pa.

It was the koko-takiwai and kakapo that primarily attracted Ngäi Tahu to Fiordland. The koko-takiwai is favoured as a softer type of pounamu, more easily shaped into a finer quality of end product. It was therefore particularly sought-after for the making of ornaments, such as

hei-tiki. The area also offered many other mahinga kai to sustain parties on their arduous expeditions, including a range of manu (birds), fish and kaimoana resources.

The tupuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other taonga, ways in which to use the resources of the area, the relationship of people with the coastline and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngäi Tahu today.

There are two principal trails linking the Fiordland coast with the rest of Te Wai Pounamu (the South Island). A sea route around the fiords links Piopiotahi to Murihiku, and was the main route by which the koko-takiwai gathered from that end of the fiords was transported. The inland route for transporting koko-takiwai by back pack lay over what is now known as the Milford track, over Omanui (McKinnon Pass), down the Waitawai (Clinton River) to the head of Te Ana-au (Lake Te Anau). From there, the pounamu would be transported by mokihi to the head of the Waiau River, and from there down the Waiau to Te Ara a Kiwa (Foveaux Strait). In addition, a trail from Martins Bay, up the Hollyford Valley and over into the Routeburn Valley to the pounamu source at the head of Lake Whakatipu-wai-Maori, was commonly used by Tai Poutini iwi, who regularly travelled south via this route to obtain koko-takiwai.

Hence tauranga waka (landing places) occur up and down the coast and wherever a tauranga waka is located there is also likely to have been a nohoanga, fishing ground, kaimoana resource, with the sea trail linked to a land trail or mahinga kai resource. The tupuna had a huge knowledge of the coastal environment and weather patterns, passed from generation to generation. This knowledge continues to be held by whanau and hapu and is regarded as taonga. The traditional mobile lifestyle of the people led to their dependence on the resources of the coast.

The fiords are the repository of many koiwi tangata, secreted away in keeping places throughout the region. There are also many other wahi tapu in the area, including examples of rock art in Chalky Sound. Urupa are the resting places of Ngäi Tahu tupuna and, as such, are the focus for whanau traditions. Urupa and wahi tapu are places holding the memories, traditions, victories and defeats of Ngäi Tahu tupuna, and are frequently protected in secret locations.

The mauri of Te Mimi o Tu Te Rakiwhanoa represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngäi Tahu Whanui with the area.

Purposes of Statutory Acknowledgement

Pursuant to section 215 and without limiting the rest of this schedule, the only purposes of this statutory acknowledgement are—

(a) to require that consent authorities forward summaries of resource consent applications to Te Rünanga o Ngäi Tahu as required by regulations made pursuant to Section 207 (clause 12.2.3 of the deed of settlement); and

(b) to require that consent authorities, the Historic Places Trust, or the Environment Court, as the case may be, have regard to this statutory acknowledgement in relation to Te Mimi o Tu Te Rakiwhanoa, as provided in Sections 208 to 210 (clause 12.2.4 of the deed of settlement); and

(c) to enable Te Runanga o Ngäi Tahu and any member of Ngäi Tahu Whanui to cite this statutory acknowledgement as evidence of the association of Ngäi Tahu to Te Mimi o Tu Te Rakiwhanoa as provided in section 208 (clause 12.2.5 of the deed of settlement).

Editorial Note

It appears that the above reference to "section 208" should be read as a reference to "Section 211" because Section 208 of the Ngäi Tahu Claims Settlement Bill, relating to the use of statutory acknowledgement with submissions, became section 211 of this Act.

Limitations on effect of Statutory Acknowledgement

Except as expressly provided in sections 208 to 211, 213, and 215,—

(a) this statutory acknowledgement does not affect, and is not to be taken into account in, the exercise of any power, duty, or function by any person or entity under any statute, regulation, or bylaws; and

(b) without limiting paragraph (a), no person or entity, in considering any matter or making any decision or recommendation under statute, regulation, or bylaw, may give any greater or lesser weight to Ngäi Tahu's association to Te Mimi o Tu Te Rakiwhanoa (as described in this statutory acknowledgement) than that person or entity would give under the relevant statute, regulation, or bylaw, if this statutory acknowledgement did not exist in respect of Te Mimi o Tu Te Rakiwhanoa.

Except as expressly provided in this Act, this statutory acknowledgement does not affect the lawful rights or interests of any person who is not a party to the deed of settlement.

Except as expressly provided in this Act, this statutory acknowledgement does not, of itself, have the effect of granting, creating or providing evidence of any estate or interest in, or any rights of any kind whatsoever relating to, Te Mimi o Tu Te Rakiwhanoa.

Appendix 4

Compliance within Fiordland's Marine Environment

compiled by Stephen Logie, MFish Invercargill

About this Appendix

This all encompassing account of compliance within Fiordland's marine environment was compiled for the Guardians by Stephen Logie. A wealth of information has been gathered about compliance generally, and the role of the various agencies and stakeholders in particular. It was essential that such a comprehensive account of this issue was available to the readers of the draft strategy. Accordingly, the account has been included in full in this appendix.

Aspects that specifically reflect the Guardians views about compliance, including ways the group can assist the relevant agencies appear in Section 8. Views have been taken from this account and from other sources.

Introduction

In developing an integrated management strategy, the Guardians recognise high levels of voluntary compliance of existing law and new regulations are critical to the success of the management regime. Since the Guardians inception compliance advice has been sought and received from key Government agencies. Stakeholder feedback received thus far confirms compliance and enforcement as being extremely important to ensure that rules are fairly administered. No law is effective unless the users accept the law is necessary and that the law is adequately enforced. Therefore adequate provision must be made for education and enforcement services to encourage voluntary compliance by fisheries and marine environment users in Fiordland.

Enforcement and compliance in Fiordland's marine environment is the chief domain of three principal agencies responsible for the administration of several important public statutes. The principal Government agencies are the Ministry of Fisheries, Department of Conservation and the regional government authority Environment Southland. In developing an effective compliance strategy it is important to recognise the various legislative roles, specialist responsibilities and agency capacity to deliver enforcement in Fiordland.

MFish Compliance Role

Legislation Mandate

The Ministry of Fisheries is responsible for the sustainable utilisation and management of New Zealand's marine fisheries resources. The MFish vision is sustainable fisheries in a healthy aquatic ecosystem, which recognises New Zealand's fisheries resources are not unlimited and that they are part of a wider aquatic eco-system.

These important principles are recognised in the Fisheries Act 1996, which provides for the utilisation of fisheries resources while ensuring sustainability. This entails maintaining the potential of fisheries resources to meet the reasonable foreseeable needs of future generations and the need to avoid, remedy or mitigate any adverse effects of fishing on the aquatic environment.

Another important statute administered by the Ministry of Fisheries is the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992, which recognises the partnership between the Ministry and Maori and obligations to give effect to Treaty principles. The Ministry of Fisheries seeks to work co-operatively with tangata whenua, fisheries stakeholders and interested parties including:

- commercial fishers and fishing industry
- recreational fishers
- customary Maori (non commercial)
- environmental groups
- local government and other Government agencies with an interest in coastal and fisheries matters.

The Ministry of Fisheries (MFish) advises the Minister of Fisheries and Government on fisheries policy and develops laws to manage New Zealand's marine fisheries. MFish administers the Quota Management System that regulates New Zealand's commercial fishing industry. Introduced in 1986 the Quota Management System (QMS) controls how much fish can be harvested based on the annual assessment of individual fish stock size, species recruitment and abundance. The success of the QMS regime relies upon sound fisheries management decisions, effective administrative systems, information monitoring and effective enforcement to ensure compliance.

MFish is charged with delivering criminal enforcement services that:

- inform fisheries stakeholders of their legal obligations and the consequences of not meeting those obligations; and
- detect and where appropriate prosecute those persons who are operating outside the law.

MFish Compliance Objectives

A high level of voluntary compliance with fisheries laws is critical to the success of any fisheries management regime. MFish aims to achieve optimal levels of compliance with fisheries laws by:

- maximising voluntary compliance by encouraging fishers to comply voluntarily with fisheries laws; and
- creating an effective deterrent against illegal activity.

The strategies for maximising voluntary compliance require fisheries stakeholders to:

- be involved in developing the rules
- understand and accept the rules as fair and necessary
- accept the duties and responsibilities of being fisheries rights holders

- be involved in developing compliance strategies; and
- believe the rules are being administered fairly and equitably.

To achieve the second compliance goal, fisheries stakeholders and users need to believe:

- there is a reasonable chance of any cheating being detected
- there is a high probability of being successfully prosecuted or penalised
- the cost of being caught cheating outweighs the benefits.

MFish Compliance Services

In terms of MFish enforcement capability a team of seven Fishery Officers based in Invercargill services the Southland and Fiordland area. The Invercargill MFish District Compliance team is primarily responsible for policing inshore fisheries between Awarua Point, South Westland and Long Point on the South-East Otago coast and includes all of Fiordland, Foveaux Strait and Stewart Island.

Principle enforcement responsibilities include:

- detecting commercial and non-commercial offences against fisheries regulations through monitoring and surveillance of fishing activity and fish product flow;

- inspection of fishing vessels, vehicles, Licensed Fish Receivers and Dealers in Fish premises;

- audit and investigative examination of commercial fishing business records;

- investigation of illegal fishing activities including poaching and black-market;

- answering queries and providing compliance advice to fisheries stakeholders and the general public;

- delivery of educational material, including signage and information brochures to promote voluntary compliance by non-commercial fishers;

- managing a small Honorary Fishery Officer volunteer network to assist enforcement by delivering education information to non-commercial fishers.

In relation to fish stock management, Fiordland lies within the Southland fisheries management area (FMA) 5 bounded between Awarua Point in the north and Slope Point in the South. Fiordland is also a significant area within the commercial rock lobster CRA 8 fisheries management area bounded between Abut Head, South Westland and Long Point on the South-East Otago coast.

Enforcement activities within Fiordland are severely constrained by isolation and the wide geographic spread of the Fiordland coastline. Normal Fishery Officer access is by routine road patrols to main access points at Manapouri, Te Anau and Milford Sound, mainly checking commercial fisher landings and Licensed Fish Receivers. Dedicated patrols are carried out to inspect recreational fisher landings during peak holiday periods. Access to the Fiordland coast is limited to expensive aerial patrols by floatplane and helicopter. While the local MFish office, now possess a trailer borne 5.9-metre Stabi-Craft patrol vessel, ready deployment is limited to

Milford Sound and Doubtful Sound, the latter being logistically difficult for deployment at short notice. Annual sea patrols coinciding with peak season commercial activity, normally necessitates the hire of the Department of Conservation (16.5 metre length) vessel "Renown" and less frequently the use of inshore naval patrol craft, with the alternative of private charter vessel hire. As with fishing, all sea patrols on the outer Fiordland coast are weather and sea conditions dependant, which can severely limit operations.

Customary Fisheries Compliance

The Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 requires the Minister of Fisheries to act in accordance with the principles of the Treaty, by consulting with Tängata Whenua and developing policies to help recognise the use and management practices of Mäori in the exercise of non-commercial fishing rights.

Under the terms of the 1992 Settlement Act, the Fisheries (South Island Customary Fishing) Regulations 1999 (replacing the original 1998 regulations) were introduced to recognise customary food gathering by Mäori and the special relationship between Tängata Whenua and those places, which are of customary food gathering importance (including tauranga ika and mahinga mätaitai), to the extent that such food gathering is neither commercial nor for pecuniary gain or trade.

Customary Regulations enable Tängata Whenua to apply for the establishment of mätaitai reserves, within any part of their rohe (area). Tangata tiaki/kaitiaki (Guardians) are appointed by Tängata Whenua to manage the reserve through the making of bylaws approved by the Minister of Fisheries. Bylaws can be made specifying the species, quantity, size limit, method, and area where the species may be taken. Generally commercial fishing is prohibited within mätaitai unless specifically exempted by regulation. The establishment of any mätaitai requires MFish to provide adequate signage and pamphlet information material to educate and inform fishers of the mätaitai reserve bylaws. Tangata tiaki/kaitiaki work closely with MFish to promote voluntary compliance of the bylaws, with enforcement carried out by MFish Fishery Officers and Honorary Fishery Officers through proactive patrols and reactive investigation to reports of illegal fishing. In dealing with remote areas such as Fiordland, it is important to build an effective information network to provide accurate and timely information to enable effective follow up and results. The Customary regulations provide for offences and court imposed penalties including maximum fines of $10,000 for a first offence and $20,000 for any subsequent offences.

Similarly taiäpure provisions in Part IX of the Fisheries Act 1996 provide for the establishment of taiäpure – local fishery areas that are customarily of special significance to an iwi or hapu as a source of food or for spiritual or cultural reasons. A taiäpure management committee recommends the making of fisheries regulations applying within the taiäpure, with offence and penalty provisions similar to amateur and commercial fishing regulations. The Fisheries Act 1996 also provides for section 186B rähui/temporary closure of fisheries or restrictions of fishing method in an area to improve the size and availability of fish stocks and/or to recognise and provide for the use and management practices of the Tängata Whenua. Offence and penalty provisions relating to fishing in breach of rähui provide for a maximum fine of $100,000 on the conviction of commercial offenders and $5,000 for non-commercial offenders.

Compliance Education and Awareness

Fisheries compliance relies upon influencing people's behaviour through effective communication and use of information tools to promote local fishing rules and to encourage responsible fishing practices. Therefore an important component to any compliance regime is the provision of targeted educational material to inform fisheries users of the local fishing rules and their obligations. This will be especially important for any fisheries regulations that are specifically enacted for fine scale management of Fiordland fish stocks and for any particular Fiord restrictions and area closures.

With the commercial industry electing to fund their own industry compliance education, MFish has concentrated on producing education material for recreational fishers and more recently customary fishers. Traditionally this has relied upon the use of recreational fishing information signage erected at limited strategic locations, such as launching ramps, wharfs and Department of Conservation huts in coastal locations within the Fiordland National Park.

MFish signage information is supported by the wide spread distribution of recreational fishing brochures, namely the "*Guide to Marine Recreational Fishing Rules*", containing relevant fishing rules applying to the Southern Region Fishery Management Area (FMA), which includes the Southland FMA, Sub-Antarctic FMA and the South-East FMA. More recently MFish has produced several species and method specific brochures including the "*Guidelines for gathering paua*", "*Handling and measuring rock lobster*", "*Guidelines for releasing undersize fish*" and a "*Set net code of practice*". A local MFish initiative was the production of a fish ruler sticker to encourage fishers to measure their finfish and shellfish catch.

To further encourage responsible fishing practices in Fiordland, the Guardians of Fiordland Fisheries have produced a code of practice entitled "*Beneath the Reflections: Caring for Fiordland's Fisheries*", which is also distributed for recreational fishers and recreational charter vessel use. Information material is usually disseminated by Fisheries Officers and local Honorary Fishery Officers in the field and relies upon the joint co-operation of fishing clubs, local businesses and charter vessel operators to assist distribution and to reinforce voluntary compliance of the rules.

Enforcement and Compliance

It is important to recognise that "enforcement is an activity and compliance is a desired outcome". The Fisheries Act 1996 and associated Commercial, Customary and Amateur Fisheries Regulations place legislative restrictions and requirements on all fisheries users. The Quota Management System relies upon output controls, to govern and constrain commercial catch, as well as a number of necessary input controls relating to minimum fish size lengths, gear restrictions, closed season and closed areas.

Recreational and customary fisheries are not directly controlled by the QMS and instead rely on input controls that regulate non commercial harvesting of fish and shellfish species by imposing daily species and bag limits, minimum size lengths, method restrictions, closed seasons and closed area controls.

The introduction of any new fisheries regulation's that are specific to the Fiordland area will require changes in behaviour. Improving compliance education and raising levels of awareness is an important tool in promoting a high level of acceptance of fishing rules. However, a strong

enforcement deterrent regime is required to deter those people, who carelessly or deliberately breach fisheries regulations.

Whilst the Fisheries Act 1996 contains tough financial penalties for serious commercial fishing non-compliance there is often a high burden of proof where the prosecution is required to satisfy the Court that an offence was "knowingly" committed, with extreme environmental limitations posing a challenge to gathering of best evidence.

Compliance levels can be seriously undermined if regular infringements are not penalised by any meaningful sanction. The recent introduction of Fisheries infringement notices, as an alternative to court proceedings for less serious amateur offences, has increased the likelihood of amateur offenders receiving a financial sanction. The Fisheries Act 1996 and amendments to the Amateur Fishing Regulations now provide for new categories of offending and differing tiers of infringement fees ($250 and $500), along with increased maximum court fines ($10,000 and $20,000) and provision for custodial sentencing for serious amateur offences.

For example the following penalties apply for exceeding amateur bag limit offences:

- taking and possession of fish up to and including 2 x daily limit = $250 infringement
- taking and possession of fish up to and including 3 x daily limit = $500 infringement
- taking and possession of fish in excess of 3 x daily limit = $20,000 maximum fine.

While there is provision for less serious commercial offences to be dealt with by infringement notices, most commercial offences including serious poaching and black-market offences will be referred to the courts, with increased maximum fines up to $250,000 and up to 5 years imprisonment.

Department of Conservation Compliance Role

Legislation Mandate

The Department of Conservation (DoC) is the central government organisation charged with conserving the natural and historic heritage of New Zealand on behalf of all New Zealanders. The Department has primary responsibility for the conservation of New Zealand's unique indigenous biodiversity, through protection and management of natural areas such as national parks, forest parks, reserves, off shore islands, marine protected areas and marine reserves. The Department encourages recreation and permits tourist activities on the conservation estate by providing facilities, management and granting of concessions in relation to access and commercial use.

The Conservation Act 1987 is the principal Act of 25 Acts administered by the Department of Conservation. In terms of Fiordland and the marine coastal environment these include the National Parks Act 1980, Reserves Act 1977, Wildlife Act 1953, Trade in Endangered Species Act 1989, Marine Reserves Act 1971 and Marine Mammals Protection Act 1978.

Marine and coastal conservation is an important responsibility of the department. It is responsible for Marine Reserves and for protecting marine mammal such as dolphins, whales, sea lions and fur seals and administers the regulations governing the whale and dolphin watching industry. The department is also responsible for the New Zealand Coastal Policy Statement, which promotes the sustainable management of the natural and physical resources of the foreshore, seabed, coastal water and airspace from the high tide mark out to the 12-nautical mile

limit of the Territorial Sea. Restricted coastal activities identified in the New Zealand Coastal Policy Statement must be included in Regional coastal plans required under the Resource Management Act 1991, which are administered and enforced by local Regional Councils, who manage and approve coastal consents for restricted coastal activities.

Fiordland National Park

The Southland Conservancy includes the Fiordland National Park (New Zealand's largest at 1.257,000 ha), which forms part of the Te Waipounamu – Southwest New Zealand World Heritage Area, and includes the Waitutu forest and the off shore Solander Island group, with its sea borne boundary extending to the mean high water mark. The Southland Conservancy Office is situated in Invercargill with the day-to-day operational management in Fiordland undertaken by the Te Anau DoC Area Office. The Te Anau Area Office/ Fiordland National Park Visitor Centre receives 150,000 visitors annually. The Southland Conservancy issues and administers approximately 140 concessions for commercial activity within the DoC estate including tourist landing and access and marine mammal watching. The Southland Conservancy operates an annual budget of approximately $8.7 million, which is partly funded from revenue generation of $2.9 million derived from concession licences, rentals and hut fees. The Conservancy employs about 90 permanent staff and up to 50 temporary and seasonal staff.

Marine Reserves

There are currently two Marine Reserves in Fiordland. Te Awaatu Channel (The Gut) Marine Reserve covers 93 ha near the eastern end of Bauza Island in Doubtful Sound and Piopiotahi Marine Reserve covers 690 ha along the northern shore of Milford Sound. Section 3 (1) of the Marine Reserves Act 1971 states that marine reserves are established "*for the purposes of preserving, as marine reserves for the scientific study of marine life, areas that contain underwater scenery, natural features or marine life, of such distinctive quality, or so typical or beautiful or unique that their continued preservation is in the national interest.*"

In administering marine reserves the Department places considerable effort on advocacy and education by providing opportunities for the public to learn about the marine life and habitats of the marine reserve. This is primarily achieved through the production of a *Fiordland Marine Reserves* pamphlet incorporating *a care code for divers*, boat ramp signage and interpretation panels erected at the Milford tourism booking office and West Arm information centre.

DoC Compliance

Present DoC policy is to provide effective compliance and law enforcement for each gazetted marine reserve. A *Compliance and Law Enforcement Action Plan* has been developed for both Fiordland marine reserves setting out the standard operating procedure for investigating complaints of illegal fishing inside the marine reserve.

Under the Marine Reserves Act 1971 it is an offence to:

- take any plant or animal:
- wilfully damage or injure marine life:
- erect any structure in, or over a marine reserve:
- wilfully interfere with or disturb marine life, foreshore or seabed, or natural features:
- discharge any substance or article injurious to marine life in, or into the reserve:
- introduce any living organism that does not naturally occur in the reserve.

While all fishing or taking of fish is prohibited inside marine reserves, all relevant fisheries regulations still apply in regards to possession of fish relating to minimum size and amateur daily bag limits.

Marine Reserves legislation provides for court penalty on conviction of up to 3 months imprisonment and/or maximum fines of $250,000, $50,000, $10,000, $5,000 and $2,500 for differing categories of offending. For example the taking and removal of marine life for commercial purposes has a maximum fine of $250,000, while wilful damage or injury of marine life attracts a maximum fine of $10,000. Obstruction of an enforcement officer has a maximum fine of $2,500 or up to 3 months imprisonment.

Warranted Officers/Rangers

Conservation enforcement is undertaken by warranted officers appointed pursuant to Section 59(9) of the Conservation Act 1987. In the Murihiku Region nominated conservancy staff are trained and warranted to carry out part time Compliance and Law Enforcement (CLE) duties. Provision exists for the appointment of Honorary Rangers under Section 17(1) of the Marine Reserves Act 1971, while subsection (7) provides that every member of the New Zealand Police and every Fishery Officer (appointed pursuant to the Fisheries Act) is deemed to be a Ranger appointed by the Director-General to exercise the duties of a Ranger in marine reserves throughout New Zealand. General enforcement powers relating to stop, search, questioning and seizure are exercisable within a marine reserve, but can only be used outside a marine reserve if the ranger is in fresh pursuit of an offender. This severely limits enforcement responses such as random vessel stopping, search and conducting enquiries outside the reserve.

Both Fiordland marine reserves are relatively isolated with accessibility limited primarily to boats, necessitating the use of sea-borne patrols for any proactive enforcement monitoring. Identified threats are illegal fishing and diving for rock lobster by recreational fishers and potential damage of marine life from inexperienced scuba divers.

The Department operates the 16.5 metres length GV *Renown* to perform programmed research and conservation project servicing around the Fiordland National Park. When the occasion arises the present skipper of the *Renown* is warranted to check boats that he observes inside the marine reserve and is also warranted as an HFO to exercise Fishery Officer powers both inside and outside the reserve. However ready deployment of the *Renown* to investigate illegal activity within the two present reserves is often impractical depending on where the vessel is operating and the steaming time to reach the reserve. In the absence of any dedicated enforcement patrols and the lack of warranted DOC staff to regularly monitor each reserve, the Department recognises the importance of tourist operators and commercial fishers who regularly pass through or near marine reserves to be their eyes and ears to report offences. Reports of illegal activity and offences are passed onto a designated CLE co-ordinator for appropriate response action including follow up investigation, the issuing of warning letters for first offences and prosecution action.

Similarly the Marine Mammals Protection Act 1978, Section 11(1), provides for every warranted officer appointed pursuant to the Conservation Act 1987 and every Fishery Officer appointed under the Fisheries Act and every Police Constable to be Marine Mammal Officers for the purposes of enforcing the Act. Subsection (9) states the Director-General shall issue to every Marine Mammal Officer (except a constable) a warrant showing the officers authority to exercise the enforcement powers conferred by the Act.

Environment Southland Compliance Role

Legislation Mandates

Local government responsibility for administering and enforcing coastal use activities in the Fiordland and Southland coastal area is the responsibility of Environment Southland which administers several important Acts requiring enforcement and compliance actions:

- Local Government Act 1971 (currently being reviewed)
- Resource Management Act 1991
- Maritime Transport Act 1994
- Bio-security Act 1993.

In Resource Management Act terms, the Coastal Marine Area (CMA) for which the Council has responsibility with the Department of Conservation is from the mean high water spring (MHWS) mark out to the 12-nautical mile limit of the territorial sea.

Delivery of Enforcement and Compliance Services

In the coastal context, the majority of Environment Southland enforcement and compliance work is activated through the Resource Management Act and the regional Coastal Plan. The Act sets up the management framework and the Plan sets out the rules that have to be complied with.

Compliance is dealt with in a number of ways from activities, which are permitted without any further intervention from the Council, through to those that are prohibited. The consents process is one of the compliance mechanisms that sanction activities where the Plan or the Act determines that consent is required before they commence.

Failure to comply with the conditions of consent; failure to comply with the provisions of the Plan; or failure to comply with the provisions of the Act can all initiate a compliance response. In some cases a compliance response is initiated by way of a complaint from the public about a certain activity or effect that is being caused in the environment.

The regional Navigation Safety Bylaws also provide a compliance tool relating to a range of activities around the operation of vessels within the coastal marine area.

The components of the compliance task can include some or any of the following compliance tools being used (in priority order):

- education/advocacy;
- warnings;
- instant fines;
- Abatement Notices;
- Enforcement Orders;
- prosecution under the regional Coastal Plan and/or the regional Navigation Safety Bylaws (resulting in a criminal conviction and fine. Imprisonment is an option for the Court if needed);
- review of consent conditions;
- cancellation of consent (through the Environment Court).

Environment Southland Capacity/Resourcing

The compliance and enforcement function is undertaken primarily through the Council's Compliance Division but also to some extent through the Consents Division. The Maritime Manager/Harbourmaster also has a compliance role under the Resource Management Act and bylaws relating to maritime navigation and safety.

The present Environment Southland compliance resource capability is as follows:

- Compliance Division – 6 personnel
- Consents Division – 4 personnel
- Maritime Manager – 1 personnel

Other Environment Southland staff, when carrying out their normal duties, can also provide the first contact with an issue that requires compliance or enforcement action. In those cases, the Compliance Division is notified. Environment Southland recognises additional "eyes and ears" out in the community can be a valuable asset. Establishing effective networks, liaison, protocols, and strategic alliances with other agencies for the purpose of information sharing is important. Working more closely together helps in covering such a vast area such as the Southland and Fiordland coastline.

Guardians Approach to Compliance

Compliance Networks

The remoteness and isolation of Fiordland imposes considerable logistical difficulties and high costs on enforcement agencies in carrying out both proactive and reactive enforcement. Enforcement in all reality remains a necessary back up to an effective education and awareness programme, with enforcement resources targeting where possible repeat and aberrant offenders.

Meaningful responses to reports of illegal activity, requires timely and accurate reporting of offences to the appropriate enforcement authority. Directed policing and ready accessibility is hampered by the isolated geographic spread of Fiordland, combined with the dispersed and sometimes irregular human occupation allowing some opportunist offending to go undetected. However past experience has shown any sustained illegal activity is eventually reported by law-abiding operators.

Therefore it is important for enforcement agencies to cultivate effective information networks with key users and commercial operators encouraged to immediately pass on intelligence and any reports of illegal activity.

Guardian's Advocacy and Stakeholder Ownership

The Guardian's of Fiordland's Fisheries Inc being representative of key stakeholder groups in Fiordland are well placed to fulfil a strong advocacy role to negotiate the adequate provision and delivery of enforcement services by the appropriate enforcement agencies and by providing valuable feedback and advice on compliance effectiveness.

Key stakeholders and regular fisheries users within Fiordland can play a major role in encouraging voluntary compliance of fishing rules. Key user groups include sport fishing and diving clubs, charter boat operators, private vessel syndicates and commercial fishers. As the majority of first time fishing interaction for many fishers visiting Fiordland takes place from either a charter vessel, private syndicate vessel or during an organised fishing or dive club visit, it is important that each user group accepts responsibility to ensure all fishers are made aware of the fishing rules and that all fishing is conducted within the rules.

This requires all regular fisheries users and charter vessel operators to take ownership and responsibility to promote the fishing rules by distributing brochures, displaying information posters and most importantly briefing and supervising fishers on board their vessels. Where possible any observed breaches of illegal activity should be promptly reported to MFish or the appropriate enforcement agency. In addition to supporting fishing regulations the potential use of voluntary codes of practice for charter boats and syndicate vessels, require all participants to play the game responsibly, with peer sector pressure a strong and positive motivator to conform.

Enforcement Agency Co-operation

With the introduction of any new rules, voluntary compliance requires the production and distribution of concise and informative pamphlet and signage material to clearly detail the appropriate rules applying both generally and to specific areas within the fiords. Interagency co-operation in co-production and shared funding of education material will be of major benefit to ensure visitors and users receive targeted information.

The primary agencies for delivering enforcement services relating to fisheries and the marine environment are the Ministry of Fisheries, Department of Conservation, Maritime Safety Authority and Environment Southland, along with co-operation with the New Zealand Police, New Zealand Customs Service and the New Zealand Defence Force. While each government agency is responsible for carrying out enforcement activities in support of administering specific departmental legislation, where possible, inter agency co-operation should be encouraged in relation to the sharing of intelligence relating to offenders and illegal activity.

Interagency co-operation could extend to planning of joint agency responses in carrying out proactive maritime and aerial surveillance patrols and to investigate reported offences. Presently, the facility exists for appropriate Department of Conservation Officers to be warranted as Honorary Fishery Officers with limited training provided to assist in the delivery of non-commercial fisheries enforcement and education. Reciprocal facility exists under the Marine Reserves Act for Fishery Officers to carry out enforcement powers of Marine Reserves rangers within marine reserves in support of Department of Conservation rangers.

Interagency co-operation and improved co-ordination of enforcement resources is deemed necessary and essential to ensure limited agency resources and funds are cost effectively utilised. The Guardians support an integrated enforcement approach should be taken by the various agencies to ensure the best results and compliance outcomes are achieved for Fiordland.