National Plan of Action to Reduce the Incidental Catch of Seabirds in New Zealand Fisheries

April 2004

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and Department of Conservation

MINISTRY OF FISHERIES
Te Tautiaki i nga tini a Tangaroa

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TABLE OF CONTENTS

Executive Summary

New Zealand is an important breeding ground for approximately eighty seabird species and the greatest variety of albatross and petrel species in the world. All but seven seabird species in New Zealand are absolutely protected under the Wildlife Act 1953,[1] which means it is an offence to hunt or kill them.

Seabird species globally are facing the threat of incidental catch from fishing activity. For example, since 1996, 13 albatross and 17 petrel species have been recorded as having been caught during commercial longline and trawl fishery operations in New Zealand. The Fisheries Act 1996 requires that any adverse effects of fishing on the aquatic environment from the utilisation of fisheries resources be avoided, remedied or mitigated. It also states that, in relation to the utilisation of fisheries resources or ensuring sustainability, any associated or dependent species, such as seabirds, should be maintained above a level that ensures their long-term viability.

As a member of the United Nations International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries (IPOA), New Zealand has developed a National Plan of Action (NPOA) to reduce the incidental catch of seabirds in our fisheries. The NPOA sets out a long-term, strategic approach to reducing the incidental catch[2] of seabirds that integrates and builds on New Zealand's existing legal and policy framework for addressing this issue. The NPOA addresses:

- all seabird species absolutely or partially protected under the Wildlife Act;
- commercial and non-commercial fisheries;
- all New Zealand fisheries waters; and
- high seas fisheries in which New Zealand flagged vessels participate, or where foreign flagged vessels catch protected seabird species.[3]

Two goals set the overall direction of the NPOA. They are:

1. To ensure that the long-term viability of protected seabird species is not threatened by their incidental catch in New Zealand fisheries waters[4] or by New Zealand flagged vessels in high seas fisheries; and

2. To further reduce incidental catch of protected seabird species as far as possible, taking into account advances in technology, knowledge and financial implications.

Together the two goals establish the NPOA as a long-term strategy. The second goal builds on the first goal by promoting and encouraging the reduction of incidental catch beyond the level that is necessary to ensure that seabird species are not threatened. The goals recognise

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1 Black-backed gull *Larus dominicanus* - not protected; black shag *Phalacrocorax carbo* and sea hawk *Catharacta lonnbergi* - partially protected; and mutton bird *Puffinus griseus*, grey-faced petrel *Pterodroma maroptera*, little shag *Phalacrocorax melanoleucos brevirostris* and pied shag *Phalacrocorax varius* - may be hunted or killed subject to Minister's notification.

2 For the purposes of the NPOA, "incidental catch" means the incidental catch or accidental catch of any protected seabird species that occurs in the course of fishing.

3 "Protected seabird species," means any seabird species absolutely or partially protected under the Wildlife Act 1953.

4 'New Zealand fisheries waters' are defined in the Fisheries Act 1996.

that while seabird deaths may be accidentally or incidentally caused by fishing, the majority of seabirds are absolutely protected under the Wildlife Act. The second goal balances the need to continue reducing incidental catch against the factors that influence how this can be achieved in practice (i.e. advances in technology and knowledge, and financial implications).

Five key management measures will be used to build on the initiatives already being undertaken by the fishing industry to reduce incidental catch, while at the same time ensuring that extra steps are taken where necessary to achieve the goals and objectives of the NPOA. They are codes of practice, input controls, economic instruments, legal action against individual vessels, and bycatch limits. A mix of both mandatory and voluntary measures will be used. Actions to encourage a reduction in the incidental catch of seabirds by foreign vessels fishing in high seas fisheries focus on education and awareness building. This is consistent with New Zealand's ability to influence the behaviour of foreign vessels in high seas fisheries.

The NPOA divides fisheries in to three groups based on the level of interaction they have with seabirds and the existing framework within which they are managed. The groups are fisheries with known seabird interactions, high seas fisheries, and all other fisheries. A package of management measures commensurate with the level of impact that each group has on seabirds is outlined.

Fisheries with known seabird interactions include the snapper, ling, bluenose, joint venture and domestic tuna longline fisheries, the ling autoline fishery and the squid, hoki and scampi trawl fisheries. The package of management measures for these fisheries includes the implementation of voluntary codes of practice, including voluntary input controls, voluntary bycatch limits for albatross and petrels that decrease overtime, and initiatives for undertaking education and awareness building within the fishery. The requirement to adopt codes of practice, input controls and bycatch limits will be mandatory where there is insufficient uptake of codes or where the measures outlined in codes are inadequate to achieve the goals and objectives of the NPOA. In addition, mandatory input controls and bycatch limits for individual seabird species will be implemented where there is sufficient information to implement these measures effectively.

As well as the measures outlined above, the following additional measures will be developed further in consultation with stakeholders:

- options for the use of economic instruments to further reduce incidental catch below any set bycatch limits;
- the ability to take legal action against individual vessels that fail to take reasonable steps to avoid, remedy or mitigate incidental catch; and
- proposals for the mandatory use of tori lines all longline fisheries.

For New Zealand vessels fishing in high seas fisheries, measures will be derived primarily from New Zealand's obligations arising from international and regional agreements and conventions. In fisheries where no international or regional agreements exist, or where the existing measures are not of a sufficiently high standard to achieve the goals and objectives of the NPOA, New Zealand may choose to adopt measures unilaterally for specific fisheries through a code of practice. In addition, New Zealand will continue to actively participate within international and regional organisations to promote appropriate measures for achieving a reduction in incidental catch.

In the group of fisheries called ‘other fisheries’, which include all commercial and non-commercial fisheries not included in the other two groups, the key objective is to develop better knowledge and understanding of their interaction with seabirds so that the appropriate management measures can be put in place.

A range of supporting measures will also be implemented to complement and reinforce the management measures. The supporting measures will focus on education and awareness building, information gathering and research. They will provide the information and knowledge necessary to ensure that the management measures are successful in achieving their intended purpose. The supporting measures will also assist with monitoring progress in reducing the incidental catch of seabirds, and ensuring that the NPOA reflects the latest and best knowledge and information about the impact of fisheries on seabird species and how this can be reduced.

Two groups will be established to oversee the implementation and monitoring of the NPOA – the NPOA Technical Working Group and the NPOA Seabirds Officials Group. The Technical Working Group will consist of members from the Ministry of Fisheries (MFish), the Department of Conservation (DoC) and stakeholder groups. The Officials Group will consist of members from MFish and DoC. In addition to making decisions in relation to the implementation of the management and supporting measures, the groups will undertake annual and five-yearly reviews of the NPOA to ensure that the goals and objectives are being achieved and that it continues to be an effective way of reducing the incidental catch of seabirds in New Zealand fisheries.

Section 1: Introduction

New Zealand's extensive coastline, productive ocean and numerous inshore and offshore islands make it an important breeding ground for many seabird species. Approximately eighty seabird species breed in New Zealand, and more than a third of these are endemic (i.e. breed nowhere else in the world). New Zealand is also the breeding ground for the greatest variety of albatross and petrel species in the world. All but seven seabird species in New Zealand are absolutely protected under the Wildlife Act 1953, which means that it is an offence to hunt or kill them.

Seabird species globally are facing a number of threats. These include the loss of habitat, changing climatic patterns and ocean pollution. One of the key threats is the incidental catch of seabirds from fishing activity. For example, since 1996, thirteen albatross and sixteen petrel species have been recorded as having been caught during commercial longline and trawl fishery operations in New Zealand fisheries waters.[5] Nineteen of the albatross and petrel species caught are threatened to some degree, and fifteen are endemic to New Zealand. There are also reports of petrels, penguins, gannets and shags being caught in set nets and pots, and during recreational line fishing.

Many of the seabird species that breed in New Zealand spend large parts of their lives in national and international waters far away from their breeding locations. This means that they have the potential to interact with international fisheries as well as New Zealand fisheries. This 'trans-border' movement adds to the challenge of managing the impact of fishing activity on New Zealand seabird species.

The impact of fishing activity on seabird species is managed primarily through the Fisheries Act 1996. The Act enables constraints to be placed on fishing activity to avoid, remedy, or mitigate the effect of fishing related mortality on any protected species, including seabirds. Initiatives such as the New Zealand Biodiversity Strategy, and the Ministry of Fisheries' draft Strategy for Managing the Environmental Effects of Fishing, the Observer Programme, and the Conservation Services Programme (CSP) also address the incidental catch of seabirds. Other initiatives such as Southern Seabird Solutions and mitigation measures voluntarily adopted by the commercial fishing industry also make an important contribution.

New Zealand seeks to address the reduction of incidental catch at the international level by being a signatory to a number of international conventions and agreements that manage threats to seabird species. One of the key agreements to which New Zealand is a signatory is the United Nations Food and Agriculture Organisation's International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries (IPOA). As signatory to this agreement, New Zealand has developed a National Plan of Action (NPOA) to reduce the incidental catch of seabirds in New Zealand fisheries, which is set out in this document. The NPOA will ensure that New Zealand takes a co-ordinated, long-term strategic approach to reducing the impact of fishing activity on seabird species.

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[5] Refer to Appendix 1 for a list of these seabird species.

Section 2: Background

2.1 INCIDENTAL CATCH OF SEABIRDS

Information on the level of incidental catch of seabirds is collected through the requirement under the Wildlife Act 1953 that all seabird deaths caused by fishing be reported to DoC. It is also collected through the independent fisheries observer programme run by MFish. Observers are placed on a number of vessels within a particular fishery and the information collected is used to estimate the overall level of incidental catch for the whole fishery. The accuracy of the estimates depends on how representative the observed proportion of total fishing effort is of the whole fishery, and the priorities of the observer's duties on board the vessels.[6]

Observer coverage of fisheries has been highly variable in the past. For example, the joint venture tuna longline fishery has historically had a high level of observer coverage, initially due to concerns over the level of incidental catch in the fishery. In 2002, there was almost 100% observer coverage of the five large vessels in the fishery. In comparison, the domestic tuna longline fishery has had low levels of observer coverage, with the highest in recent years being in 1996-97, when 12% of hooks were observed.[7] There has been no (or very low) observer coverage in the snapper or bluenose longline fisheries in the past.

The variability of observer coverage means that estimates of total incidental catch are not available for some fisheries, and for those fisheries where estimates are available caution is required when interpreting the results. However, some fisheries are known to interact with seabird species because of the geographical locations within which they occur and the types of fishing methods used. Fishing methods that seabirds are known to be at risk from include demersal (i.e. on or near the seafloor) and pelagic (i.e. at or near the surface) longlining and trawling. Appendices 1 and 2 provide a list of the species reported caught in each fishery during the 1996–2001 period. Section 2.1.1 to 2.1.4 discuss the current state of knowledge of seabird interactions within different fisheries in New Zealand waters, and the impacts of this on seabird species.

2.1.1 Incidental Catch in Longline Fisheries

The main commercial longline fisheries that interact with seabirds include the tuna, bluenose, snapper and ling fisheries. Seabirds, particularly albatrosses and petrels, are vulnerable to longlining because they take baited hooks, sometimes diving beneath the water's surface, while the lines are being set. In certain conditions, the birds can get hooked or tangled in the line and drown. Mortality in longline fisheries affects 25 out of the 30 species listed in Appendix 1 as species killed in fishing operations in New Zealand waters. The majority of birds returned for identification from longline fisheries include campbell, gibson's antipodean, light-mantled sooty, salvin's and buller's albatrosses, flesh-footed shearwaters, and petrels from the genus *Procellaria*. While captures of rare species such as the chatham albatross and parkinson's petrel may not be numerous in these fisheries, they have the

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6 For example, observers in the trawl fisheries may not be able to observe all seabird bycatch as they may be involved in doing other tasks.

7 *Review of Albatross and Petrel Interaction with New Zealand Trawl and Longline Fisheries.* 1998. Ministry of Fisheries and Department of Conservation.

potential to have a significant impact on these very small populations. Reported examples of incidental catch in longline fisheries include the following:[8]

- In the joint venture tuna longline fishery, the incidental catch of seabirds during 1990–98 peaked in 1992–93, when an estimated 891 birds were caught by the joint venture and foreign licensed tuna longliners.[9] In 1999-2000, when there was 100% observer coverage on the joint venture vessels, 40 birds were observed caught, 35% of which were released alive. The reduction in birds caught can be attributed to the adoption of voluntary codes of practice by the fishery in 1997.

- In the domestic tuna longline fishery, 234 seabirds were observed captured in 1991–2000, 81% of which were released alive. However, observers covered only a small percentage of the fishery's effort over this period (sometimes as low as 6% of hooks), so the total incidental catch cannot be estimated. The survival rate of the released birds is not known.

- In the ling longline fishery, observed incidental catch has been reported since 1994-95. In 1999–2000, 203 seabirds were reported captured. Of these, 12 were released alive. However, no estimates of total captures are available as observers only covered part of the fishery. It should also be noted that, because of the nature of their duties on ling longline vessels, observers might not view all seabirds caught.

- Limited information is available for the snapper longline fishery. In April-May 2001, an observer was placed on five vessels. During this time, 26 petrels were recorded caught on two vessels, and no captures were recorded on the other three vessels.

- Incidental catch figures are not available for the bluenose longline fishery as there is currently no observer coverage of this fishery.

2.1.2 Incidental Catch in Trawl Fisheries

The trawl fisheries with the greatest reported interaction with seabirds are the squid, scampi and hoki fisheries. Some incidental catch has also been recorded in the trawl fisheries for barracouta, hake, jack mackerel, oreo, orange roughy, southern blue whiting, and warehou. Seabirds are killed in trawl fisheries when they collide with or become entangled in fishing equipment.

The main seabird species that have been caught in trawl fishing operations since 1995 are sooty shearwaters and buller's, salvin's and white-capped albatrosses. Other species caught include campbell, southern royal and black-browed albatrosses, and northern giant, parkinson's, grey-faced, black-bellied storm, and white-chinned petrels. Reported examples of incidental catch in trawl fisheries include the following:

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8 *"Review of Albatross and Petrel Interactions with New Zealand Trawl and Longline Fisheries"*, prepared by the Ministry of Fisheries and Department of Conservation in December 2001.

9 Baird, S.J., Francis, M., Griggs, L., Dean, H. 1998. *Annual review of bycatch in Southern Bluefin tuna and related tuna longline fisheries in the New Zealand 200 n. mile Exclusive Economic Zone.* Report prepared for the Ministry of Fisheries.

- In the Stewart-Snares Shelf trawl fisheries[10] in November 1998, when 16% of trawls were observed, one bird was observed caught. From this, the estimated number of birds caught was six. In April 1999, when 19% of tows were observed, 82 birds were observed caught. From this, the estimated number of birds caught was 482.[11]

2.1.3 Incidental Catch in Other Fisheries

The incidental catch of seabirds has been reported in set net fisheries, which primarily target in-shore fish stocks including various shark species, tarakihi, butterfish, moki and flatfish. Seabirds that dive for food can become entangled in the net and drown. The limited scientific research to date indicates that species that propel themselves through the water using wings rather than feet are the most vulnerable to being caught in set nets. Species that have been caught in set nets include, huttons, fluttering, and sooty shearwaters; yellow eyed and blue penguins; spotted, pied, little, Stewart Island, and New Zealand king shags; and gannets.

There are also reports of shags and shearwaters being caught in pots, and anecdotal reports of recreational line fisheries catching shags, shearwaters and gannets. A lack of information means that it is currently difficult to assess the extent of incidental catch of seabirds in the pot and recreational line fisheries.

2.1.4 The Impact of Incidental Catch on Seabird Species

Knowledge about the impact of the incidental capture of seabirds on seabird species varies for different species. The impact depends on a number of factors, including the current population size, the number of breeding localities, the population structure (for example, the male to female ratio of adults), and population growth parameters (for example, productivity, juvenile recruitment and adult survival). The level of incidental take of seabirds from fishing activity must also be known.

As noted in section 2.1, there is currently limited information about the level of incidental catch of different seabird species. Combined with limited knowledge of the population characteristics of some seabird species, this makes quantifying the overall impact of fishing activity on seabird species difficult. A key objective of the NPOA is to improve this information and gain a better understanding of the impact of incidental catch on seabird species. However, the current lack of quantitative information is not considered a barrier to taking action to reduce incidental catch. Sufficient information is known about the interaction between fisheries and seabird species to put in place measures to ensure that incidental catch is reduced. Ongoing research programmes run by DoC and MFish are addressing specific seabird-fishery interactions.

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[10] Target species include barracouta, hake, hoki, jack mackerel, oreo, orange roughy, southern blue whiting, scampi, squid, smooth oreo and silver warehou.

[11] S.J. Baird., *Estimation of the incidental capture of seabird and marine mammals species in commercial fisheries in New Zealand waters, 1998-99.* New Zealand Fisheries Assessment Report, October 2000.

2.2 THE CURRENT MANAGEMENT FRAMEWORK

New Zealand's current approach to managing the incidental catch of seabirds from fishing activity can be divided into four inter-related parts. These are:

- legislation under which seabirds are protected and which provide for the management of the impact of fishing activity on seabird species;
- policy and operational initiatives that give effect to the Government's goals and objectives in relation to reducing the incidental catch of seabirds;
- international agreements and conventions to which New Zealand is a signatory that seek to protect seabirds; and
- other initiatives, such as Southern Seabird Solutions and initiatives adopted voluntarily by the fishing industry.

2.2.1 Relevant Legislation

There are two key pieces of legislation in New Zealand that deal with the impact of fishing activity on seabirds. These are the Wildlife Act 1953 and the Fisheries Act 1996. Together, these Acts provide the legal framework under which regulations and policies are established to reduce the impact of fishing activity on seabird species.

2.2.1.1 Wildlife Act 1953

The Wildlife Act 1953 absolutely protects all but seven seabird species, and partially protects two other species (i.e. black shags and sea hawks).[12] Section 63A of the Act makes it an offence to hunt or kill absolutely and partially protected seabirds.

The Act recognises that fishing activity can result in the death of protected seabirds by providing a specific defence under section 68B(4) if the person proves that death or injury was accidental or incidental, or that the death or injury took place as part of a fishing operation. In both instances, the defence is only available if the death or injury is reported. A further defence is provided under section 68AB(3) of the Act if the person proves that they did not intend to commit the offence and that they took all reasonable steps to ensure that anything prohibited was not done or that anything required to be done was done.

The penalties available under the Wildlife Act include fines, and in some instances, terms of imprisonment. There is no authority or power to revoke or suspend a fishing permit under the Wildlife Act, which means that despite prosecution, fishers can continue to fish and potentially catch seabirds.

The Wildlife Act provides for a population management plan (PMP) to be developed for any species of marine wildlife. PMPs can address a range of matters, including an assessment of the biology and status of the species, an assessment of any known fisheries interactions with the species and recommendations to the Minister of Fisheries on measures to mitigate the

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[12] Black-backed gull *Larus dominicanus* - not protected; black shag *Phalacrocorax carbo* and sea hawk *Catharacta lonnbergi* - partially protected; and mutton bird *Puffinus griseus*, grey-faced petrel *Pterodroma maroptera*, little shag *Phalacrocorax melanoleucos brevirostris* and pied shag *Phalacrocorax varius* - may be hunted or killed subject to Minister's notification.

fishing related mortality of the species. PMPs can also set a maximum allowable level of fisheries-related mortality (MALFIRM) for seabird species. So far, no PMPs have been developed for any seabird species, due to insufficient information about individual seabird species to enable an effective PMP to be developed. However, a PMP is currently being progressed for wandering albatross, for which more information is available. PMPs may be a useful management tool for other seabird species in the future.

2.2.1.2 Fisheries Act 1996

The Fisheries Act 1996 requires that the effect of fishing on seabird species be actively managed. In particular, the purpose of the Act is to provide for the utilisation of fisheries resources while ensuring sustainability. 'Ensuring sustainability' is defined in the Act as maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations, and avoiding, remedying, or mitigating any adverse effects of fishing on the aquatic environment, which includes seabirds. Further impetus to manage the impact of fishing on seabirds is provided through section 9 of the Act, which requires decision makers, when achieving the purpose of the Act, to take into account the environmental principles in the Act, which include:

- associated or dependent species[13] (which includes seabirds) should be maintained above a level that ensures their long-term viability; and

- biological diversity of the aquatic environment should be maintained.

Section 5 of the Fisheries Act requires that it be interpreted in a manner consistent with New Zealand's international obligations relating to fishing. It also requires all persons exercising or performing functions or duties under the Act to act in a manner consistent with these obligations. Relevant international obligations include those relating to the incidental catch of seabirds during fishing activity, such those set out in the IPOA.

Where a PMP is developed for any species of marine wildlife under the Wildlife Act and a MALFIRM is set, the Fisheries Act requires that all reasonable steps be taken to ensure that the MALFIRM is not exceeded. The Minister of Fisheries also has a range of powers under the Fisheries Act to take measures to avoid, remedy, or mitigate the effect of fishing related mortality on seabirds. For example, the Minister can put in place a seabird bycatch limit through regulation. In addition, the Minister can, by Gazette, prohibit all or any fishing or fishing methods in an area to mitigate the effects of fishing-related mortality on seabirds. The Minister can also impose reporting obligations in respect of seabirds and require information on fishing related mortality of seabirds to be given by fishers in a specified manner and form.

Examples of regulations that have been put in place under the Fisheries Act to reduce the incidental catch of seabirds from fishing include the banning of drift net fishing in 1991 and the banning of the use of net sonde monitoring cables in trawl fisheries in 1992. In addition, regulations requiring the use of tori lines (seabird scaring devices) in all tuna longline fisheries were established in 1992.

The Fisheries Act enables legal action to be taken against individuals who do not comply with the Act or associated regulations. Penalties available under the Act include fines, terms of imprisonment, forfeiture of property, and suspension and revocation of a fishing permit.

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[13] The Fisheries Act defines 'associated or dependent species' as any non-harvested species taken or otherwise affected by the taking of any harvested species.

Section 241 provides a general statutory defence to any offence committed under the Fisheries Act. To have the benefit of the defence, a person must:

- prove that the contravention was due to an accident or to some other cause beyond the person's control and the person took reasonable precautions and exercised due diligence to avoid the contravention; and

- in the case of taking any aquatic life in contravention of the Act, have immediately returned the aquatic life to the sea (except where prohibited by the Act) and complied with the requirements of the Fisheries Act in relation to recording and reporting of the taking, return, or landing of aquatic life.

2.2.2 Policy and Operational Initiatives

A range of policy and operational initiatives are currently in place to address the incidental catch of seabirds in New Zealand fisheries. Policy initiatives include the New Zealand Biodiversity Strategy and the Ministry of Fisheries' draft Strategy for Managing the Environmental Effects of Fishing. Operational initiatives include the Observer Programme, the Conservation Services Programme (CSP), and research programmes.

2.2.2.1 The New Zealand Biodiversity Strategy

The need to reduce the incidental catch of seabirds from fishing activity is reflected in the New Zealand Biodiversity Strategy. The Strategy has been prepared to address the decline of New Zealand's indigenous biodiversity. It also reflects New Zealand's commitment, through ratification of the international Convention on Biological Diversity, to help stem the loss of biodiversity worldwide.

The purpose of the Strategy is to establish a strategic framework for action, to conserve and sustainably use and manage New Zealand's biodiversity. This includes biodiversity in the marine and coastal environment. The Strategy sets out the following objectives that are particularly relevant to addressing the issue of the incidental catch of seabirds from fishing activity:

- *"Protect biodiversity in coastal and marine waters from the adverse effects of fishing and other coastal and marine resource uses"*; and

- *"Protect and enhance populations of marine and coastal species threatened with extinction, and prevent additional species and ecological communities from becoming threatened"*.

2.2.2.2 Strategy for Managing the Environmental Effects of Fishing

The Ministry of Fisheries is currently developing a strategy for managing the environmental effects of fishing. The draft strategy is designed to implement an ecosystem approach to fisheries and to make significant improvements in managing the environmental effects of fishing. It will also help to ensure that MFish can meet its environmental obligations under the Fisheries Act and other legislation in an efficient and effective manner. The draft strategy proposes some significant changes to the way that environmental effects are managed, including:

- improved assessment and reporting on the status of species and habitats affected by fishing;

- a proactive approach to managing and protecting species and habitats;
- a requirement for environmental risk assessments to be undertaken for fisheries; and
- use of government-set environmental standards to establish the limits within which fisheries must operate and providing flexibility for how the standards will be met.

The strategy will be linked to and supported by a number of other, more specific strategies such as the Marine Protected Area Strategy, the Seamount Strategy, and the NPOA for seabirds.

2.2.2.3 Observer Programme

The Observer Programme has been in place since 1986. The purpose of the Observer Programme is to monitor the activities of New Zealand fishing vessels. This includes providing an incidental catch sampling service for research on the main quota species and monitoring the incidental catch of marine mammals and seabirds. Observers are able to record the number of seabirds caught by commercial fishing vessels. The Observer Programme is run by MFish and funded through levies on the commercial fishing industry.

2.2.2.4 Conservation Services Programme (CSP)

The CSP has been in place since 1995. The purpose of the CSP is to investigate and mitigate the adverse effects of commercial fishing on protected species (including seabirds). The CSP is administered by DoC and funded through Crown funding and levies on the commercial fishing industry. The types of activities undertaken by the CSP include:

- retrieval of carcasses of protected species and autopsy;
- observer coverage targeted at the incidental catch of seabirds in selected fisheries;
- research and development of mitigation measures;
- analysis of incidental catch data and estimation of total incidental catch;
- monitoring of certain populations of protected species caught incidentally;
- research into the effects of fishing on protected species; and
- the development of PMPs.

2.2.2.5 Research Programmes

MFish and DoC run various research programmes in relation to the impacts of fishing on protected species, such as seabirds. Research is also undertaken on measures to mitigate the adverse effects of commercial fishing on protected species. Research programmes are funded through the CSP and levies on the commercial fishing industry under the Fisheries Act.

2.2.3 International Agreements and Conventions

The migratory nature of many seabird species and their movement across international boundaries means that the management and protection of seabirds is a matter of international concern. New Zealand is a signatory to a number of international conventions and agreements that include provisions for managing the impact of fishing on seabirds, including:

- The Convention for the Conservation of Migratory Species of Wild Animals;
- The Convention for the Conservation of Southern Bluefin Tuna;
- The United Nations Agreement on Straddling Fishstocks and Highly Migratory Fishstocks;
- The Agreement on the Conservation of Albatrosses and Petrels;
- The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR);
- The Convention on Biological Diversity;
- The United Nations Convention on the Law of the Sea; and
- The International Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries (IPOA).

New Zealand fishing vessels fishing in New Zealand waters are subject to the requirements of all relevant international conventions and agreements to which New Zealand is a signatory. In addition, New Zealand flagged vessels and nationals fishing in high seas fisheries are subject to the requirements of any international conventions and agreements relating to those fisheries to which New Zealand is a signatory. Examples of high seas fisheries where international agreements apply include the Ross Sea Antarctic toothfish longline fishery, the albacore fishery in the Central Pacific Ocean, the pelagic longlining fishery in the Pacific Ocean, the orange roughy trawl fishery on the South Tasman Rise, and the orange roughy trawl fishery in the Southern Indian Ocean.

Environmental standards can be set either through an international agreement or by the relevant regional fisheries management organisation (RFMO). Where no relevant RFMO or agreement exists, or the environmental standards set by the RFMO or international agreement are considered to be inadequate, the New Zealand government can set environmental standards for New Zealand vessels. Environmental standards are set for New Zealand flagged vessels in international fisheries, through permits issued under Part 6A of the Fisheries Act, or by a permit issued under other legislation implementing international treaties in New Zealand law such as the Antarctic Marine Living Resources Act 1981. The Chief Executive of the Ministry of Fisheries may suspend or revoke a high seas fishing permit on conviction of the fisher for contravention of a permit condition.

2.2.3.1 International Plan of Action (IPOA)

A key driver for the establishment of New Zealand's NPOA is the IPOA. The IPOA was developed by the United Nations Food and Agriculture Organisation, and approved by the UN's Committee on Fisheries in early 2000.

The IPOA is a voluntary agreement and applies to states in the waters of which longline fisheries are being conducted by their own or foreign vessels, and to states that conduct longline fisheries on the high seas and in the EEZs of other states.[14] It requires member countries to develop a national plan of action (NPOA) for reducing the incidental catch of seabirds in their own longline fisheries. The IPOA sets out the following guidelines for what can be included in a NPOA:

- a prescription of appropriate mitigation methods;
- plans for research and development of effective mitigation measures;
- programmes to increase awareness among fishers and other relevant groups of the incidental catch problem; and
- programmes to promote the implementation of the NPOA, such as the collection of data.

As of March 2003, the USA and Japan had completed their NPOA. Australia, South Africa, Brazil, the Falkland Islands, Namibia, Chile and Taiwan were still developing NPOAs.

2.2.4 Other Initiatives

As well as legislation, policy and operational initiatives, and international agreements and conventions, there are a number of other initiatives in place that play an important role in reducing the incidental catch of seabirds in New Zealand fisheries. These include Southern Seabird Solutions and initiatives adopted voluntarily by the commercial fishing industry.

2.2.4.1 Southern Seabird Solutions

In July 2002, MFish and DoC held a two-day workshop to enlist the support of New Zealand stakeholders to begin working co-operatively with other countries to reduce the incidental catch of seabirds. As a result, a group called Southern Seabird Solutions was formed. In November 2003, Southern Seabird Solutions was established as a Trust.

The purpose of Southern Seabird Solutions is to promote responsible fishing practices that avoid the incidental capture of seabirds, both in New Zealand and the wider southern ocean. Membership includes representatives from the commercial fishing industry, environmental and conservation groups, and the government. Projects currently underway by Southern Seabird Solutions include:

- the production of an English and Spanish language educational video about seabirds and fishing;
- a Chilean fishing crew exchange programme;
- provision of New Zealand designed tori lines to Australia;
- collation of information on where New Zealand seabirds migrate and their overlap with fisheries;

[14] FAO Fisheries Report 958, 1999.

- refinement and testing of an underwater bait-setting capsule; and
- ongoing discussions with overseas governments about joining the Agreement on the Conservation of Albatrosses and Petrels.

2.2.4.2 Industry Initiatives

The commercial fishing industry undertakes various initiatives to reduce the incidental catch of seabirds. These include funding research into new or improved mitigation measures, voluntarily adopting codes of practice, and adopting best practice ways of fishing.

For example, codes of practice have been in place in the joint venture tuna longline fishery since 1997-98. Amongst other things, the codes require longlines to be set at night and establish a voluntary upper limit on the incidental catch of seabirds. The bycatch limit has been steadily reduced from 160 'at risk' seabirds in 1997-98, to 75 seabirds in 2003-04.

Most vessels in the domestic longline tuna fishery have also voluntarily adopted night setting, and codes of practice are in place for the ling auto-line fishery (since 2002-03). The remainder of the ling fishery and the bluenose longline and hoki trawl fisheries are developing codes of practice.

Examples of other voluntary initiatives undertaken by some commercial fishers include reduced deck lighting, the use of thawed rather than frozen baits, sound deterrents, discharging of offal away from setting and hauling, weighted branch lines, different gear hauling techniques and line shooters.

Section 3: Setting the Direction

3.1 PURPOSE

The purpose of the NPOA is to set out a long-term strategy to reduce the incidental catch of seabirds in New Zealand fisheries. It sets out New Zealand's goals and objectives in relation to the reduction of incidental catch and puts in place management measures for their achievement. The NPOA also establishes a process by which new information on incidental catch and how to mitigate it can be generated and fed back into the plan to ensure that reductions in the level of incidental catch can be improved over time.

The NPOA plays an important role in New Zealand's overall approach to managing the impacts of fishing activity on seabird species. In effect, the NPOA provides a working explanation of how the legislation, international agreements and conventions, and policies described in section 2.2 will be used together in a co-ordinated and coherent way to reduce the incidental catch of New Zealand seabirds from fishing activity. The NPOA responds directly to New Zealand's international obligations under the IPOA to reduce the incidental catch of seabirds in longline fisheries.

3.2 SCOPE

The NPOA addresses:

- all seabird species absolutely or partially protected under the Wildlife Act;
- commercial and non-commercial fisheries;
- all New Zealand fisheries waters; and
- high seas fisheries in which New Zealand flagged vessels participate, or where foreign flagged vessels catch protected seabird species.[15]

The inclusion of all absolutely or partially protected seabird species and all commercial and non-commercial fisheries within the scope of the NPOA enables a comprehensive and systematic approach to be taken to the reduction of incidental catch. However, the limited resources available to both the government and the fishing industry for reducing incidental catch means that, in the first instance, emphasis will be placed on management measures that target seabird species that are the most threatened and fisheries that have the greatest interaction with seabirds. Overtime, it is expected that the reduction of incidental catch in the 'high-priority' fisheries and an improved knowledge about seabird interactions with fisheries, will free up resources to enable additional species and fisheries to be addressed.

High seas fisheries are fisheries in waters outside the national fisheries jurisdiction of any country, including outside New Zealand's EEZ. Although the NPOA is defined as a 'national' plan of action, it includes high seas fisheries for several reasons. In particular, seabird species that breed in New Zealand are caught in high seas fisheries by both

[15] "Protected seabird species," means any seabird species absolutely or partially protected under the Wildlife Act 1953.

New Zealand flagged vessels and foreign flagged vessels. If a reduction of incidental catch only occurs within New Zealand waters, and no action is taken in high seas fisheries, then the overall benefit to seabird species may be less effective. By taking action outside as well as inside New Zealand waters, there is a better chance of addressing the impact of fishing activity on seabird species.

A further reason why high seas fisheries are included in the NPOA is that some vessels fish both within and outside New Zealand's EEZ. Ensuring a consistent approach to the reduction of incidental catch in both areas will help to eliminate any incentives for vessels to change fishing grounds to avoid costs associated with reducing seabird incidental catch in one area. Also, the inclusion of high seas fisheries within the scope of the NPOA provides an opportunity for New Zealand to take an active leadership role in relation to the reduction of incidental catch from fishing activity in the international environment. Because New Zealand has no jurisdiction over the activity of foreign flagged vessels in high seas fisheries, the types of measures adopted under the NPOA for encouraging a reduction of incidental catch by these vessels will be different than those adopted within New Zealand waters. Measures for high seas fisheries are discussed further in section 4.4.2.

The scope of the NPOA is broader than suggested by the IPOA in that it includes all fisheries, not just longline fisheries. The reason for this is that scientific evidence shows that seabirds are also caught in other fisheries, such as trawl and set net fisheries. As such, it is not considered equitable to place the sole burden of reducing incidental catch on longline fisheries. Nor is it considered that focusing solely on longline fisheries will effectively reduce the overall impact of fishing activity on seabird species.

As noted in Section 1, there are a number of other threats to seabird species in addition to fishing activity. It is not within the scope of the NPOA to address these threats. Threats to seabird species other than fishing activity are identified in DoC's *'Action Plan for Seabird Conservation in New Zealand'*.[16] Management measures to address these threats are undertaken by DoC as part of their ongoing conservation management programme.

3.3 GOALS

The goals set the overall direction of the NPOA and specify the outcomes it aims to achieve. They will also guide future decisions about the adoption of management measures to reduce the incidental catch of seabirds in New Zealand fisheries. The goals are:

1. To ensure that the long-term viability of protected seabird species is not threatened by their incidental catch in New Zealand fisheries waters[17] or by New Zealand flagged vessels in high seas fisheries; and

2. To further reduce incidental catch of protected seabird species as far as possible, taking into account advances in technology, knowledge and financial implications.

3.3.1 Explanation of the Goals

The first goal has several implications. As discussed above, New Zealand has no jurisdiction over the activity of foreign vessels in high seas fisheries. While New Zealand can directly

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[16] Taylor (2000) *Action Plan for Seabird Conservation in New Zealand*. Part A: Threatened seabirds (*Threatened Species Occasional Publication No. 16*); Part B: Non-threatened species (*Threatened Species Occasional Publication No. 17*).

[17] 'New Zealand fisheries waters' are defined in the Fisheries Act 1996.

influence the activity of our own vessels in the high seas (and sometimes nationals) to ensure that they are fishing in a way that promotes the achievement of goal one, we cannot do this for foreign vessels fishing in the high seas and catching protected seabird species. However, New Zealand can do a number of things to encourage foreign vessels to adopt fishing practices that enable them to make a positive contribution to the achievement of goal one. Such measures include active promotion of adoption of measures within regional fisheries management organisations and in international fora, building awareness about the incidental catch problem and sharing knowledge and experiences about how to effectively address it. Measures for high seas fisheries are discussed further in section 4.4.2.

Goal one also recognises that the threat to long-term viability is different for different seabird species. Some species are more endangered than others, and therefore must be managed accordingly. For example, some very endangered species cannot remain viable even with very low levels of incidental catch, whereas other species are abundant and moderate levels of incidental catch will not pose a threat to their long-term viability. This means that the package of management measures available under the NPOA needs to be sufficiently broad and flexible to address the different levels of threat facing different seabird species.

As noted in section 2.1.4, information on the impact of incidental catch on seabird species and the threat to their long-term viability is limited for a number of seabird species. Limited information should not be a barrier to implementing management measures in fisheries where there is known or suspected incidental catch of seabirds, however. Targeting of management measures will improve over time as better information on seabird species and incidental catch becomes available.

The second goal builds on the first goal by promoting and encouraging the reduction of incidental catch beyond the level that is necessary to ensure that the long-term viability of seabird species is not threatened. It recognises that while seabird deaths may be accidentally or incidentally caused by fishing, the majority of seabirds are absolutely protected under the Wildlife Act. The second goal balances the need to continue reducing incidental catch against the factors that influence how this can be achieved in practice. In particular, advances in technology and knowledge, and financial implications will be taken into account in decisions about the further reduction in the incidental catch of seabirds. This goal also reflects the idea that, over time, new and innovative ways will be developed that allow the fishing industry to continue to reduce incidental catch.

It should be noted that an outcome of zero incidental catch is possible under both goals. For some very endangered seabird species, zero incidental catch may be required under goal one to ensure that the long-term viability of the species is not threatened. In addition, although a reduction of incidental catch as far as possible under goal two is unlikely to result in zero incidental catch at present, future technological developments may mean that zero incidental catch is both economically and practically feasible in the future.

Together, the two goals establish the NPOA as a long-term strategy. This reflects the fact that ensuring that the level of incidental catch of seabirds in New Zealand fisheries is such that the long-term viability of seabird species is not threatened is an ongoing task.

3.4 OBJECTIVES

The objectives of the NPOA will help to give effect to the two goal statements. They will also guide future decisions about the management measures and actions that will be implemented under the NPOA. The objectives are to:

1. Implement efficient and effective management measures to achieve the goals of the NPOA, using best practice measures where possible;

2. Ensure that appropriate incentives and penalties are in place so that fishers comply with management measures;

3. Establish mandatory bycatch limits for seabird species where they are assessed to be an efficient and effective management measure and there is sufficient information to enable an appropriate limit to be set;

4. Ensure that there is sufficient, reliable information available for the effective implementation and monitoring of management measures;

5. Establish a transparent process for monitoring progress against management measures;

6. Ensure that management measures are regularly reviewed and updated to reflect new information and developments, and to ensure the achievement of the goals of the NPOA;

7. Encourage and facilitate research into affected seabird species and their interactions with fisheries;

8. Encourage and facilitate research into new and innovative ways to reduce incidental catch;

9. Provide mechanisms to enable all interested parties to be involved in the reduction of incidental catch;

10. Promote education and awareness programmes to ensure that all fishers are aware of the need to reduce incidental catch and the measures available to achieve a reduction.

The above objectives are discussed further throughout the NPOA.

Section 4: Changing Behaviours

4.1 OVERVIEW

To successfully achieve the goals and objectives of the NPOA, management measures must be put in place to change behaviours of fishers in relation to the incidental catch of seabirds. This means putting place in measures to reduce incidental catch where they don't currently exist, and ensuring that those measures that are in place will achieve the goals and objectives of the NPOA.

Section 4.2 describes the management measures that are available to reduce the incidental catch of seabirds in New Zealand fisheries. It outlines the outcome that each management measure can achieve and the advantages and disadvantages associated with its use. Section 4.3 explains the benefits of using the management measures together, as a package, rather than individually. In summary, the management measures are:

- codes of practice;
- input controls;
- economic instruments;
- legal action against individual vessels; and
- bycatch limits.

For management measures to be effective in changing behaviour, incentives must be created to ensure that they are implemented and enforced. This can be achieved in two ways – through regulation, in which case management measures become a mandatory requirement, and through voluntary arrangements. Codes of practice, input controls and bycatch limits can be implemented on either a mandatory or voluntary basis. Economic instruments and legal action against individual vessels are implemented through regulation and legislative amendment.

The main advantage of using regulation to implement management measures is that compliance can be enforced through sanctions and penalties. In addition, regulation provides certainty for fishers as to expected behaviour. However, a regulatory approach is generally inflexible, meaning that the same management measures and costs apply to all fishers, regardless of individual circumstances. A regulatory approach can also discourage the development of new and innovative ways of reducing incidental catch.

Conversely, the main advantage of a voluntary approach is that it provides flexibility, which allows for innovation and 'least cost' methods to be applied. Voluntary measures cannot be enforced through legal sanctions, however. Enforcement of voluntary measures can be achieved through independent monitoring and review of progress against commitments, and through pressure from stakeholders. The threat of regulation taking the place of voluntary arrangements, and the potential costs associated with regulation, also act as incentives for compliance with voluntary management measures.

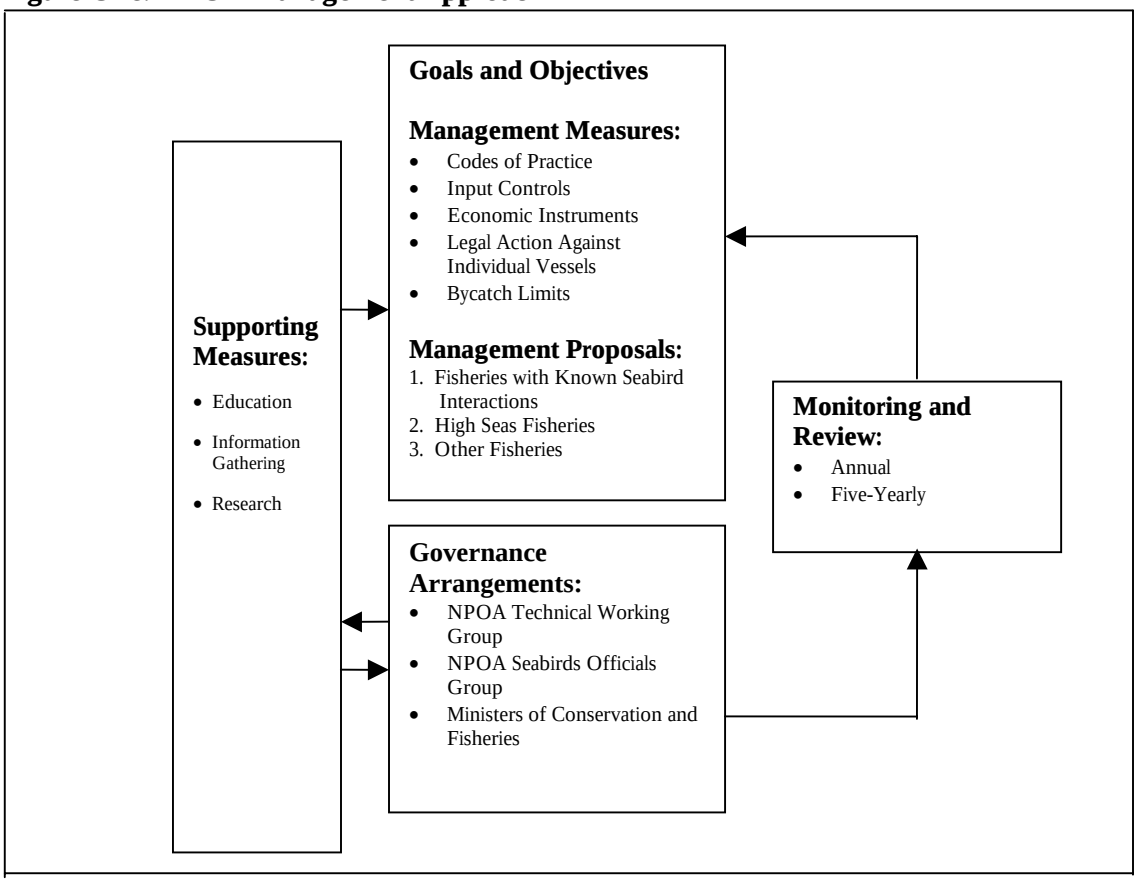
Given the advantages and disadvantages of both approaches, the NPOA proposes a combination of both voluntary and mandatory management measures. Section 4.4 outlines

the voluntary and mandatory management measures that will be used to achieve the goals and objectives of the NPOA across three groups of fisheries – fisheries with known seabird interactions; high seas fisheries; and other fisheries.

In addition to the five key management measures, a range of supporting measures will be implemented to complement and reinforce the management measures. These are discussed in section 4.5. The supporting measures will focus on education and awareness building, information gathering and research. They will provide the information and knowledge necessary to ensure that the management measures are successful in achieving their intended purpose. The supporting measures will also assist with monitoring the progress in reducing incidental catch, and ensuring that the NPOA reflects the latest and best knowledge and information about the impact of fisheries on seabird species and how this can be reduced.

Two groups will be established to oversee the implementation and monitoring of the NPOA – the NPOA Technical Working Group and the NPOA Seabirds Officials Group. The Technical Working Group will consist of members from MFish and DoC and stakeholders groups. The Officials Group will consist of members from MFish and DoC. As well as making decisions in relation to the implementation of management and supporting measures, the groups will undertake annual and five-yearly reviews of the NPOA. Section 4.5.4 provides details on the roles of the groups and their membership. Figure One illustrates the NPOA management approach.

Figure One: NPOA Management Approach



4.2 MANAGEMENT MEASURES

This section describes the management measures that are available to achieve the goals and objectives of the NPOA, and the advantages and disadvantages associated with their use.

4.2.1 Codes of Practice

Codes of practice are a commonly used management tool that set out the way in which a group agrees to behave or operate. They can include goals and standards that the group wants to achieve and behaviours that the group wants to exhibit. In the case of fisheries, codes of practice can constitute an expression of 'best fishing practice' and can be used to set industry standards for achieving a reduction in the incidental catch of seabirds. Codes of practice are often used as a form of industry self-regulation.

Voluntary industry led codes of practice relating to seabird interaction have been in place in the joint venture tuna longline fishery since 1997 and the ling auto-line fishery since 2002. The remainder of the ling fishery and the bluenose longline and hoki trawl fisheries are currently developing codes of practice.

4.2.1.1 Advantages and Disadvantages of Codes of Practice

A key advantage of using codes of practice to help achieve the goals and objectives of the NPOA is that they can provide an opportunity for the fishing industry to identify and implement the most effective and least-cost ways of reducing incidental catch. This means that fishers are able to implement the mitigation measures that are the most effective for mitigating incidental catch of the species they interact with and in the specific areas they fish. As such, codes of practice provide an opportunity to make effective use of the information that fishers are likely to have about the best ways of reducing incidental catch.

The development of codes of practice encourages individual fishers to share information and knowledge about effective ways of reducing incidental catch. This promotes the adoption of best practice methods across the fishery. Codes of practice can also facilitate continuous improvement in fisheries management by setting new goals and standards for the fishing industry. In addition, the implementation of codes of practice can have economic benefits for the fishing industry by providing an opportunity to market fish products caught using 'best practice' fishing methods. A further advantage of using codes of practice to achieve the goals and objectives of the NPOA is that it will build on the progress that has already been made in developing fisheries codes of practice.

A key disadvantage of using voluntary codes of practice is that they may not go far enough in ensuring that the goals and objectives of the NPOA are achieved. This is because fishers may not have the incentive to set stringent enough constraints on fishing activity through a code if the constraints result in financial costs to the fishery. One way to address this is to make the development and implementation of codes subject to a transparent process of independent monitoring and review. The requirement to adopt a code, and its contents, can also be set in regulation.

Another disadvantage is that in order to be fully effective all participants in a fishery need to sign up to a code of practice. Otherwise, those that do not comply with the code benefit at the expense of those that do comply, removing the incentives for anyone to comply. Codes of

practice can also take time to negotiate and implement, particularly where a large number of individuals with different interests are involved.

4.2.2 Input Controls

Input controls seek to control the impact of fishing activity by specifying the amount or type of fishing activity that can or cannot be undertaken in a particular fishery. They can be designed to achieve a range of outcomes. For example, some input controls can protect specific wildlife habitats and others can protect non-target species or particular stages of the target species' life cycle (for example, juveniles or egg-bearing animals). A range of input controls can be used for fisheries management, including closed areas or seasons, method restrictions, minimum legal sizes, and minimum escape gap requirements.

There are currently two mandatory input controls relating to the incidental catch of seabirds in New Zealand. They are the prohibition on the use of net sonde monitoring cables by trawl vessels, and the mandatory use of standard tori lines in the tuna longline fishery. A number of voluntary input controls are also used. For example, the joint venture and domestic tuna fleets set longlines at night when seabirds are less likely to be present. The use of reduced deck lighting, discharging offal away from setting and hauling, and using thawed rather than frozen baits are other examples of voluntary input controls.

4.2.2.1 Tori Lines

One possible option for the further use of mandatory input controls to reduce incidental catch is making tori lines mandatory in all longline fisheries. Tori lines are currently used in the domestic tuna, joint venture tuna, ling, and CCAMLR fisheries to deter seabirds from taking baits sitting close to the surface. They have been found to reduce seabird mortality by between 30-70% in pelagic longline fisheries, although their effectiveness is dependent on design specifications, which vary by vessel, fishing operation and location.[18]

4.2.2.2 Advantages and Disadvantages of Input Controls

A key advantage of mandatory input controls is that they provide an effective mechanism for implementing and enforcing existing best practice in fisheries management. Where a fishing method or activity has been shown to be particularly effective at reducing incidental catch, mandatory input controls can be used to ensure that all participants in the fishing industry engage in that activity.

A further advantage of input controls is that they can be implemented relatively quickly, which means that they can be used to take immediate action to address fisheries management concerns. For example, they can be used to stop the use of fishing methods that have the potential to result in high levels of incidental catch.

On the other hand, a key disadvantage of using mandatory input controls is that they impose the same costs on all fishers, regardless of the level of impact they have on seabird species or the level of effort they already undertake to avoid incidental catch. Mandatory input controls can also stifle innovation, constraining improvements in fisheries management. This is because they generally specify a certain type of technology or method that must (or must not)

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[18] *Seabird Interaction with Fisheries in the New Zealand Exclusive Economic Zone.* Draft prepared by the Ministry of Fisheries and the Department of Conservation. June 2000.

be used to achieve a particular outcome. This can discourage the development of new and improved ways of reducing incidental catch.

Mandatory input controls may also create an upper limit on the level of effort that fishers will be prepared to exert to achieve a reduction in incidental catch, even when exerting further effort might still be cost-effective. In addition, mandatory input controls can become outdated and cement inefficient and outdated practices in the fishing industry. Enforcement of the use of input controls is also necessary to ensure that they are being implemented correctly and having the intended effect.

A number of the disadvantages of mandatory input controls can be overcome by the use of voluntary input controls. For example, by using voluntary input controls, fishers can adopt controls that take into account the impact they have on seabird species and update input controls as new and improved methods of achieving the same outcome become available.

4.2.3 Economic Instruments

In the context of the NPOA, the term 'economic instrument' refers to a management tool that uses financial costs or benefits to create incentives for fishers to modify their behaviour in a way that has positive outcomes for the achievement of the goals of the NPOA. Economic instruments can be penalty- or reward-based, and they can utilise existing charges in the industry (such as levies) or create new charges. For example:

- A bond could be paid at the beginning of a fishing season and refunded based on the number of seabirds caught; or

- A charge could be imposed on each fisher at the end of the season, based on the number of birds caught.

MFish and DoC are currently considering the contribution that economic instruments could make to the achievement of the goals and objectives of the NPOA. It is envisaged that any economic instrument would be implemented through regulation. A number of factors need to be considered before a final decision is made about the use of economic instruments, however. In particular, it is necessary to first consider the advantages and disadvantages of economic instruments, as well as the practicalities associated with their use.

4.2.3.1 Advantages and Disadvantages of Economic Instruments

A key advantage of economic instruments is that they can be used to create incentives for fishers to further reduce incidental catch beyond statutory or voluntary bycatch limits. This means that they can make an important contribution to the achievement of the second goal of the NPOA. A further advantage is that economic instruments are often considered to result in 'fair' (or equitable) outcomes. This is because they can be designed to ensure that those who make the greatest contribution to the problem pay the greatest cost, and those who make the most effort to mitigate the problem receive the greatest benefit.

If designed well, economic instruments can give fishers the flexibility to implement the most efficient and effective mitigation methods given their individual resource constraints. Economic instruments can also encourage the development of new and innovative mitigation techniques as fishers have the incentive to identify the least-cost method of reducing incidental catch.

A key disadvantage of economic instruments is that a large amount of information may be required to develop an effective instrument. In some cases, the necessary information may be difficult to collect. For example, it may require a system of independent information reporting for each vessel in the fishery. Also, if used as a sole management measure, economic instruments may not ensure that the level of incidental catch in New Zealand fisheries is such that the long-term viability of seabird species will not be threatened. This is because they tend to focus on economic factors, rather than on biological considerations.

Another disadvantage is that the monitoring and enforcement of some economic instruments can be difficult. This is not only due to the inherent difficulties in observing fishers behaviour, but also because economic instruments can create incentives for those responsible for incidental catch to misreport catch levels and engage in behaviour to avoid penalties or charges. It should also be noted that amendments to the Fisheries Act might be required to allow for the use of some economic instruments, depending on how they are designed.

4.2.4 Legal Action Against Individual Vessels

MFish and DoC are currently considering legislative amendment to enable the Crown to take legal action against individual vessels that fail to take reasonable steps to avoid, remedy or mitigate the incidental catch of seabirds. A defence to the incidental or accidental catch of seabirds as the result of fishing activity would be retained, however.

At present, the legal framework surrounding the catch of seabirds provides a defence to the incidental catch of seabirds under the Wildlife Act, where it is proven that the death or injury to the seabird took place as part of a fishing operation and the death is reported. This means that, in practice, the defendant is not required to show that the death was accidental or incidental, or that they exercised reasonable care to avoid, remedy or mitigate incidental catch. The proposed legislative amendment would address this issue.

The ability to take legal action and impose sanctions already exists in a number of situations in relation to incidental catch. For example, non-compliance with mandatory input controls, such as the requirement to use tori lines in the tuna longline fishery, can result in legal action. Other examples are discussed in section 2.2.1, as well as the penalties available for non-compliance.

4.2.4.1 Options

There are two options available for enabling legal action to be taken against individual vessels that fail to take reasonable steps to avoid, remedy or mitigate incidental catch. These are an amendment to the Wildlife Act or an amendment to the Fisheries Act.

Option 1: Amendment to the Wildlife Act 1953

The Wildlife Act could be amended to remove section 68B(4)(b), which provides a defence to the capture of seabirds where the defendant proves that death or injury to seabirds took place as part of a fishing operation. Section 68B(4)(a), which provides a defence to the capture of seabirds where the defendant proves that the death or injury to seabirds was accidental or incidental would be retained.

A key issue that needs to be considered is that the penalties available under the Wildlife Act include fines and terms of imprisonment. There are no penalties under the Wildlife Act that directly target the behaviour of the fisher, such as the ability to remove fishing permits or confiscate fishing equipment. In addition, it should be noted that the provisions of the

Wildlife Act apply to other wildlife, as well as seabirds. The broader implications for other wildlife of the proposed amendment would therefore need to be considered.

Option 2: Amendment to the Fisheries Act 1996

The Fisheries Act could be amended to make it an offence to catch seabirds. The general statutory defence provided under section 241 would then apply. This would mean that it would be a defence to catch seabirds where it was shown to be due to the act or default of another person, or to an accident or to some other cause beyond the defendant's control, and the defendant took reasonable precautions and exercised due diligence to avoid the incidental catch, such as acting in accordance with an established code of practice. The defendant would also be required to record and report the seabird capture.

The penalties available under the Fisheries Act include fines, terms of imprisonment, forfeiture of property, and suspension and revocation of a fishing permit. In order to enforce such an amendment, however, regulations would need to be put in place under the Fisheries Act to require the reporting of the incidental catch of seabirds.

4.2.4.2 Advantages and Disadvantages of Legal Instruments

There are a number of advantages with using a legal instrument, such as the ability to take legal action against individual vessels, as a management measure. In particular, a legal instrument creates strong incentives for compliance, as long as the penalties for non-compliance and the expectations of 'getting caught' are high enough. Fishers will generally comply with legal provisions, as the cost of not complying can be high. As such, legal instruments are considered very effective in achieving their intended outcome.

Another important advantage of the ability to take legal action against individual vessels is that it provides a mechanism to target the small group of fishers who make no effort to avoid, remedy or mitigate incidental catch. Such fishers are unlikely to use best practice fishing methods and the ability to take legal action against these fishers is likely to be one of the few measures that will be effective in changing their behaviour.

The main disadvantage of using legal instruments to achieve the goals and objectives of the NPOA is that they can be difficult to monitor and enforce. Quality information about the level of incidental catch on individual vessels and the circumstances under which the seabirds were caught will be required. This can be achieved with observer coverage, although there are costs associated with placing observers on vessels that must be met by the fishing industry. In addition, a greater emphasis on monitoring of incidental catch may come at the expense of other activities currently undertaken by observers. Finally, taking legal action can be costly and the outcome is never guaranteed. Changes to legislation also take time to implement and come into affect.

4.2.5 Bycatch Limits

In the context of the NPOA, bycatch limits are controls placed directly on the number of seabird mortalities. Bycatch limits are a form of output control. They do not specify the means by which fishers must limit incidental catch, but rather set a maximum amount of a species that can be taken from a specified area within a specified period. Bycatch limits can be used to contribute to the objectives of the NPOA by establishing quantifiable limits on the number of seabirds caught in different fisheries. If implemented effectively, this can help to ensure that the level of incidental catch in New Zealand fisheries is low enough not to threaten the long-term viability of seabird species. As well as controlling the number of

removals from seabird populations, bycatch limits can serve as a useful tool for the fisher. In particular, they can act as a type of 'performance indicator' that fishers can use to monitor their progress in reducing incidental catch. Bycatch limits can be reduced over time as a way of encouraging fishers to continuously improve methods of reducing incidental catch.

Bycatch limits can also serve as a trigger point for the initiation of 'operational bycatch decision rules'. This involves the fisher putting in place some type of previously agreed operational response when a predetermined bycatch limit is reached. The type of response can vary depending on the circumstances and timeframes within which the specified limit is met. For example, if the fisher reaches 30% of the agreed limit in any one fishing area, then the operational response may be to move to a new fishing area. Voluntary bycatch limits are currently used in this way in the joint venture tuna fleet.

Bycatch limits for seabirds can be set as individual species bycatch limits or as multi-species bycatch limits. Individual species bycatch limits are bycatch limits set for one particular species of seabird. Multi-species bycatch limits apply to a group of seabird species and are used in situations where it is difficult or impractical to distinguish between individual species. This is primarily because there is very little visible difference to the untrained eye and, in some cases, an accurate identification can only be obtained through autopsy. Examples of multi-species bycatch limits are the 'big bird' and 'small bird' limits used in the joint venture tuna fishery to refer to albatross and petrel species respectively.

Mandatory bycatch limits can be set for individual species under the Fisheries Act as part of an operational plan for a particular fishery. They can also be set under the Wildlife Act as a MALFIRM through a PMP. As noted previously, there are currently no PMPs in place for any seabird species.

4.2.5.1 Advantages and Disadvantages of Bycatch Limits

A key advantage of bycatch limits is that, provided the appropriate limit for a species can be determined and enforced, they can be very effective in managing the direct effects of fishing on seabird species. In particular, they can help to ensure that the number of seabird deaths caused by fishing over a certain period does not exceed the number of removals that a particular seabird population can sustain. Establishing individual species bycatch limits for selected seabird species can also have flow on benefits for other species, as the efforts to reduce the incidental catch of one species generally leads to the reduction in incidental catch of other seabird species as well.

A further advantage of bycatch limits is that they provide fishers with the flexibility to determine the mitigation method that is most effective and least cost for their particular fishing operation. In addition, because bycatch limits do not specify how incidental catch must be avoided, they provide scope for the development and adoption of innovative and cost-effective methods of reducing incidental catch. As noted above, bycatch limits can also serve as a useful tool for fishers by to acting as a performance indicator and trigger point for initiating operational bycatch decision rules.

A key disadvantage of using bycatch limits to directly manage the impact of fishing on seabird species is that the development of an effective limit requires a large amount of information about individual seabird species. The type of information required includes the existing number of birds in the population, detailed demographic information to estimate population growth parameters, and the impacts of fishing on the particular species. If this information is not available and bycatch limits are set too high, then the threat of fishing

activity to seabird species will not be sufficiently reduced. Conversely, if bycatch limits are set too low, then the costs imposed on fishers will be unnecessarily high. The types of costs imposed on fishers from the use of bycatch limits include the costs of using mitigation measures and relocating to new fishing areas, as well as the possible closure of a fishery when bycatch limits are exceeded.

A disadvantage of using multi-species bycatch limits is that they assume that all of the included species face a comparable level of threat. This may not be the case as some species within the bycatch limit may be more threatened than others. If the overall limit is set to manage the most threatened species, then the limit for the other species will be too low therefore imposing unnecessary costs on fishers. Conversely, if the overall limit is set to manage the least threatened species, then the limit for the other more threatened species will be too high and will not ensure that the threat to them is sufficiently reduced. Also, it should be noted that multi-species bycatch limits couldn't currently be set under the Fisheries Act. Legislative amendment to the Act would be required should the use of multi-species bycatch limits be considered appropriate in the future.

A key difficulty with using individual bycatch limits for seabirds is that the more individual limits that are set, the more complex and expensive the limits become to monitor and enforce. Enforcing single species catch limits in cases where several different fisheries impact on the species is also likely to be complex, as it will require compiling incidental catch data across a range of fisheries. Also, there is currently unlikely to be sufficient information available to set a bycatch limit for many seabird species, including many of the most threatened species. This information is being collected which will enable individual species limits to be set in the future, however.

The information requirements for setting bycatch limits also raise issues for enforcing mandatory bycatch limits. The information used to set a mandatory limit must be sufficient to ensure that the limit will be upheld in a Court if faced with a legal challenge. If the available information will not ensure this, then the credibility of the mandatory bycatch limit will be threatened and the incentive for fishers to comply with the limit will be reduced. However, section 10(d) of the Fisheries Act states that the absence of, or any uncertainty in any information, should not be used as a reason for postponing or failing to take any measure to achieve the purpose of the Act. The implementation of bycatch limits for individual seabirds species is therefore best considered on a case-by-case basis.

The use of bycatch limits can also set a ceiling on the level of effort that is undertaken to reduce incidental catch. This is because bycatch limits do not provide incentives for fishers to reduce incidental catch below the established limit. This means that fishers may adopt and employ mitigation measures to the point necessary to meet the bycatch limits, but may not attempt to reduce incidental catch any further. This could occur even in situations where it would not impose any additional costs on fishers to reduce incidental catch below the established limit.

A further disadvantage of bycatch limits is that they are difficult to monitor. This constrains the ability of regulators to take immediate action when limits are exceeded. In order to determine when a bycatch limit has been exceeded, complex mathematical models are required to estimate total incidental catch based on observed or reported captures. Penalties for exceeding bycatch limits (such as fishery closures) can create incentives for fishers to misreport incidental catch and discard seabirds. Misreporting can be overcome with very high levels of observer coverage, and possibly electronic monitoring. Current levels of observer coverage are generally considered inadequate for this purpose.

Another disadvantage associated with the implementation of bycatch limits is that they can create incentives for fishers to 'race for fish' and over-invest in fishing capacity if the bycatch limit applies to the whole fishery rather than to individual fishers. This is because individual fishers will try to catch fish as fast as they can to avoid being the vessels that face the costs of avoiding incidental catch. This can cause the bycatch limit to be met quickly and in some cases, overshooting of the limit can occur (particularly where there is poor reporting of incidental catch).

One way to overcome a race catch and an over-investment in fishing capacity is to allocate shares of the overall seabird bycatch limit to individual fishers, as is done with fish under the QMS. The shares may or may not be tradable. Although the QMS model works effectively for commercial fisheries, tradable shares are not currently considered an appropriate solution for managing seabirds. This is because seabirds are a protected species and a system for managing the incidental catch of seabirds based on individual tradable rights may be seen as legitimising the incidental catch of a certain number of seabirds.

4.3 COMBINING MANAGEMENT MEASURES

There are advantages and disadvantages associated with all five management measures listed in section 4.2 for managing the impact of fishing activity on seabird species. For example:

- codes of practice can provide fishers with the flexibility to adopt innovative and cost effective methods of reducing incidental catch, but are unlikely to stop the small proportion of fishers who continue to act recklessly and harm seabirds;

- input controls can ensure that all fishers adopt proven methods of reducing incidental catch, but they do not encourage the development of new and innovative methods of reducing incidental catch;

- economic instruments can provide incentives for fishers to continue to reduce the incidental catch of seabirds, but do not provide a direct control on the total number of seabirds caught;

- legal instruments can target fishers who continue to act recklessly and harm seabirds, but they do not provide incentives for fishers to share knowledge and information about best practice; and

- bycatch limits can set quantifiable limits on the number of seabirds caught as a result of fishing activity, but they do not provide incentives for fishers to continue to reduce the level of incidental catch below those limits.

None of the five management measures on their own will achieve the goals and objectives of the NPOA. However, by using the management measures together as a package, it is possible to maximise the advantages of each option, while minimising or eliminating many of the disadvantages. Section 4.4 outlines how a combination of both voluntary and mandatory management measures will be used to ensure that the goals and objectives of the NPOA are achieved.

4.4 MANAGEMENT MEASURES FOR EACH FISHERY

This section sets out how the management measures discussed in section 4.2 will be used to achieve the goals and objectives of the NPOA. Fisheries have been divided into three groups, based on the level of interaction they have with seabirds and the existing framework within which they are managed. A package of measures commensurate with the level of impact that each group is known to have on seabirds is outlined. The three groups are:

1. fisheries with known seabird interactions;

2. high seas fisheries; and

3. all other fisheries.

4.4.1 Management Measures for Fisheries with Known Seabird Interactions

The fisheries that fall within this group have been identified through existing observer coverage information as interacting with seabird species. The reasons for this include the type of fishing methods used by the fishery and its geographical location. Because the level of potential interaction with seabird species is high, the need to manage incidental catch in these fisheries is considered a high priority. The fisheries in this group are the:

- snapper longline fishery;
- ling longline fishery;
- ling autoline fishery;
- bluenose longline fishery;
- joint venture tuna longline fishery;
- domestic tuna longline fishery;
- squid trawl fishery;
- hoki trawl fishery; and
- scampi trawl fishery.

Other fisheries may be added to this list as more information becomes available through the implementation of the NPOA. A process for identifying such fisheries is outlined in section 4.4.3.

Many fisheries with known seabird interactions are already undertaking measures to reduce their level of incidental catch. For example, codes of practice have been developed in a number of the fisheries and other fisheries are in the process of developing codes. This type of voluntary activity is facilitated by the presence of commercial quota owner organisations in many of these fisheries. It is important that measures set out in the NPOA recognise and encourage the good progress that has been made through the voluntary measures already in place. However, it is also important that the NPOA is able to take the measures an extra step further where necessary to ensure that the goals and objectives of the NPOA can be achieved.

4.4.1.1 Management Measures

Table 1 summarises the management measures for achieving the goals and objectives of the NPOA in fisheries with known seabird interactions.

Table 1: Management Measures for Fisheries with Known Seabird Interactions

Measures	Actions
Codes of Practice	All fisheries with known seabird interactions will develop and implement voluntary codes of practice. All fishers within a fishery will be expected to agree and adhere to the relevant code of practice. The implementation of codes of practice and their contents will be made mandatory under the Fisheries Act in any of the following circumstances: • there is inadequate sign-up to the code by fishers within the specified timeframe; or • the measures adopted by fishers in voluntary codes are inadequate to achieve the goals and objectives of the NPOA; or • following the five-yearly review of the effectiveness of the NPOA, voluntary codes of practice are determined to be ineffective in achieving the goals and objectives of the NPOA. The codes will: • be consistent with any international agreements and conventions, mandatory input controls and bycatch limits already in place for the fishery; • be developed by the fisheries in consultation with the Technical Working Group; • address issues to be set out in guidelines to be developed by the Technical Working Group and the Officials Group in consultation with stakeholders, but including all of the following: o voluntary input controls; o voluntary bycatch limits, where mandatory bycatch limits are not already in place; o methods for promoting education and awareness about the reduction of incidental catch; o appropriate sanctions for non-compliance with the code; and

	○ an internal monitoring and reporting procedure for assessing the performance of the fishery against the code; • be evaluated by the Technical Working Group and approved by the Officials Group in accordance with the guidelines for the development and implementation of codes; and • be formally reviewed by the fisheries every three years to enable new information and mitigation measures to be taken into account. The nine fisheries will be divided into the following two groups for the purpose of developing and implementing codes: • Group One: ling autoline, joint venture tuna, hoki trawl, and squid trawl fisheries; and • Group Two: ling longline, bluenose longline, snapper longline, scampi trawl and domestic tuna fisheries. The following timeframes will apply to each group for the development and implementation of codes: • Group One: code developed and approved by 30 July 2004, and implemented by 1 October 2004; and • Group Two: code developed and approved by 30 March 2005, and implemented by 30 June 2005. Group Two will be required to adopt the following interim measures: • report to the Technical Working Group on progress to develop a code of practice by October 2004; and • encouraged to adopt the measures specified in a default code of practice to be prepared by the Technical Working Group. The Technical Working Group will undertake an annual review of each fishery and its performance against its code of practice using guidelines for monitoring and evaluating codes of practice and fisheries performance against them, and make recommendations to the Officials Group based on the outcome of the review.
Input Controls	Fishers will implement appropriate voluntary input controls through a code of practice. Input controls will be made mandatory under the Fisheries Act in any of the following circumstances: • appropriate voluntary input controls are not established and implemented under codes of practice or there is inadequate sign-up to codes within fisheries; or

	• following a five-yearly review of the effectiveness of the NPOA, voluntary input controls are determined to be ineffective in achieving the goals and objectives of the NPOA. Mandatory input controls will also be implemented where research identifies that a particular mitigation measure has significant benefits that warrant its implementation on a mandatory rather than voluntary basis (for example, the possible use of tori lines in all longline fisheries). Detailed proposals on the mandatory use of tori lines in all longline fisheries will be developed by the Officials Group and used as the basis of further consultation with stakeholders, prior to final decisions being made by 30 September 2004. All existing mandatory input controls will continue to apply.
Economic Instruments	Options for the use of economic instruments will be developed by the Officials Group and used as the basis for further discussion with stakeholders by 20 December 2004.
Legal Instruments	Options for amendment to legislation to enable action to be taken against individual vessels that fail to take reasonable precaution to avoid, remedy and mitigate incidental catch will be developed by the Officials Group and used as the basis for further discussions with stakeholders by 20 December 2004.
Bycatch Limits	Voluntary bycatch limits will be established and implemented through codes of practice for all fisheries where there is a known interaction with seabirds, and mandatory bycatch limits are not already in place. The purpose of the voluntary bycatch limits will be to act as an indicator of fishers' performance in reducing incidental catch, and a trigger point for operational bycatch decisions rules specified in codes of practice. Mandatory bycatch limits will be set for individual seabird species where they are assessed to be an appropriate management measure, and there is sufficient information to show that the level of incidental catch in New Zealand fisheries is such that the long-term viability of the seabird species is threatened and to allow an appropriate bycatch limit to be set. The requirement to set bycatch limits through codes of practice will be made mandatory under the Fisheries Act in any of the following circumstances: • bycatch limits are not established or adhered to voluntarily through codes of practice, or there is inadequate sign-up to codes; or

	• following a review of the effectiveness of the NPOA, voluntary bycatch limits are determined to be ineffective in achieving the goals and objectives of the NPOA. Voluntary bycatch limits will be: • set according to guidelines to be established by the Technical Working Group, in consultation with stakeholders; • required for albatross and petrel species initially, although fisheries will be encouraged to establish bycatch limits for other species in their codes of practice; • multi-species limits, such as those currently used in the joint venture tuna longline fishery (i.e. big bird, small bird limits); • required to decrease over time, taking into account advances in technology, knowledge and financial implications; • enforced through appropriate sanctions, including 'in-season' sanctions, to be set out in codes of practice; and • based on annual limits.

An important feature of the package of measures outlined in Table 1 is that it enables both goals of the NPOA to be achieved simultaneously. This is because it establishes limits on the incidental catch of seabirds, while at the same time, putting in place measures to ensure that incidental catch will be reduced below those limits where possible. Other benefits of the package of measures are that it:

- builds on measures already being undertaken by the fishing industry, while at the same time ensuring that extra steps can be taken where necessary to achieve the goals and objectives of the NPOA;
- provides fishers with flexibility to determine the most effective and least cost methods of reducing incidental catch in their particular fishery, and provides incentives for continuous improvement;
- encourages the fishing industry to share knowledge about best practice and to work with stakeholders to achieve a reduction in incidental catch;
- establishes clear expectations about the performance of the fishing industry in relation to reducing incidental catch, and puts in place measures to ensure that those expectations can be met; and
- reflects what is realistically achievable based on existing information about seabird species and incidental catch, while at the same time ensuring that additional information will be collected to improve measures over time.

A range of polices and procedures will need to be established to implement the package of measures. As canvassed in Table 1, this will include the development of guidelines and

processes. The following sections explain how various components of the package of measures will be implemented.

4.4.1.2 Codes of Practice

The following sections provide further details on the process that will be used to implement voluntary and mandatory codes of practice.

Guidelines for Codes

Three sets of guidelines will be developed to ensure that voluntary codes of practice operate effectively. They are:

- guidelines for the development and implementation of codes;
- guidelines for monitoring and evaluating performance against codes;
- guidelines for setting bycatch limits.

The Technical Working Group will be responsible for drafting these guidelines. The Officials Group will undertake consultation with stakeholders over the draft guidelines prior to finalising them.

Additional Resources

In addition to the three sets of guidelines discussed above, the Technical Working Group and the Officials Group will develop the following resources by 30 August 2004 to facilitate the timely and cost-effective development and implementation of effective voluntary codes of practice:

- **Code of Practice Template** – a template for codes will be developed and made available to fishers to use if they wish. The template will be based on the guidelines and will set out the key issues that a code is expected to address. It will also help to ensure that the proposed fishing practices are communicated in a clear, concise and useable form;
- **Seabird Incidental Catch Information Kit** – existing information on the incidental catch of seabirds, mitigation measures and seabird species relevant to the development and implementation of codes will be compiled into a useable form. This information will then be made available to stakeholders to assist in the development, implementation and monitoring of codes; and
- **Default Code of Practice** – a 'default' code of practice will be developed to ensure that all fishers have access to an effective code at low cost. The default code will be relatively basic, with the proposed mitigation measures based on accepted best practice, rather than designed specifically for individual vessels. However, the default code may be useful for fishers who wish to implement a voluntary code of practice, but may not have the capacity or capability to develop a code on their own.

Development of Codes

The intention is that all fishers in the nine fisheries included in the group called '*Fisheries with Known Seabird Interactions'*[19] will comply with a voluntary code of practice. Fishers will ultimately implement the codes. However, as long as the code is consistent with the NPOA and the relevant guidelines, it could be developed and managed by a company stakeholder organisation, quota holders, individual fishers or groups of fishers.

However, there are a number of benefits in quota holders and company stakeholder organisations taking responsibility for the codes. In particular, quota owners have a strong incentive to ensure sustainable fishing practices in their fishery to protect the future value of their quota. As such, quota holders and company stakeholder organisations will be encouraged through the Technical Working Group and the guidelines to take responsibility for the codes.

The guidelines for developing and implementing codes of practice will be based on the content of the NPOA. However, at a minimum it is expected that the guidelines will require that codes include:

- voluntary input controls;
- voluntary bycatch limits;
- methods for promoting education and awareness about the reduction of the incidental catch of seabirds;
- appropriate sanctions for non-compliance with the code; and
- an internal monitoring and reporting procedure for assessing the performance of the fishery against the code.

Other matters that the guidelines for developing and implementing codes may specify that codes address include:

- an explanation of how the goals and objectives of the NPOA will be met. For example, how requirements relating to information gathering, observer coverage, education, and research will be actioned;
- a description of how the fishery will demonstrate that the standards specified in the code have been met;
- a detailed description of the mitigation measures that will be used in the fishery and how they will be deployed. This should take into account any existing regulatory controls, such as the prohibition on the use of net sonde monitoring cables by trawl vessels;
- in relation to voluntary bycatch limits, codes should specify how the limit was determined, how it is consistent with the goals of the NPOA, what action would be taken if the limit is exceeded and how the limit will be reduced over time;

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[19] The domestic tuna, joint venture tuna, snapper, ling and bluenose longline fisheries, the ling autoline fishery, and the scampi, hoki and squid trawl fisheries.

- specification of the entity responsible for the code of practice within the fishery; and

- a description of the process by which any changes to the code of practice will be made and how those changes will bind participants.

Approval of Codes

The development and implementation of codes of practice will initially be voluntary. Nevertheless, in order to determine whether codes will achieve the goals and objectives of the NPOA, a process of independent evaluation and approval of the codes will be required. This will also help to ensure consistency and transparency in the way that codes are developed, and provide a forum for information flow and knowledge sharing across fisheries. As noted above, the Technical Working Group will be responsible for evaluating the codes. The Officials Group will approve the codes, following consideration of the recommendations provided by the Technical Working Group.

Neither the evaluation of codes nor the approval of codes will require formal 'sign-off' by the Technical Working Group or the Officials Group. However, fisheries will have the incentive to ensure that the groups have formally evaluated and approved their codes. This is because the evaluation and approval process, as well as the ongoing monitoring of fisheries performance against the codes, will be used to determine the overall effectiveness of voluntary codes of practice as a management measure under the NPOA. If adequate codes are not put in place, or there is insufficient sign-up to the codes, then they will be replaced with mandatory measures.

Implementation of Codes

The nine fisheries required to implement a voluntary code of practice (listed in section 4.4.1) are at different stages in terms of their ability to meet this requirement. Some fisheries have already put in place a voluntary code, whilst others are still in the process of developing a code or have not yet considered developing a code. In order to provide adequate time for all nine fisheries to implement a voluntary code, they have been divided into two groups with a separate timeframe set for each. The two groups are:

- Group One: ling autoline, joint venture tuna, hoki trawl, and squid trawl fisheries; and

- Group Two: ling longline, bluenose longline, snapper longline, scampi trawl, and domestic tuna fisheries.

The fisheries in Group One either have a code of practice in place already or are well advanced in developing a voluntary code. The fisheries in Group Two are either still at the early stages of developing a code or have yet not made significant progress in developing a code. The following timeframes will apply:

- Group One: code developed and approved by 30 July 2004, and implemented by 1 October 2004; and

- Group Two: code developed and approved by 30 March 2005, and implemented by 30 June 2005;

Although Group Two needs additional time to develop and implement a code of practice, their level of interaction with seabirds means that it is important that they take measures as soon as possible to reduce incidental catch. As such, the following interim measures will apply to Group Two:

1. report to Technical Working Group on progress to develop a code of practice by October 2004; and

2. encouraged to adopt the measures specified in the default code of practice to be developed by the Technical Working Group.

Monitoring and Evaluating Codes

The Technical Working Group will review the nine fisheries' performance against their voluntary codes of practice annually. The process for the review, including any reporting obligations for fishers, will be set out in the guidelines for monitoring and evaluating performance against codes. The guidelines will also set out the factors that will be taken into account in evaluating fishers' performance against voluntary codes. All fisheries will be consulted on and fully informed of any guidelines set.

If a fisheries' performance is not consistent with the guidelines, then the Technical Working Group will make recommendations to the Officials Group as to the appropriate course of action. The Officials group will then consider the possible options in consultation with the fishery and other stakeholders. The possible options for addressing poor performance against voluntary codes are:

1. seeking a commitment from the fishery to a satisfactory remedial action;

2. revising the fisheries' code of practice; and

3. initiating the process for making the adoption of a code of practice mandatory under the Fisheries Act.

Following consideration of the options and consultation with stakeholders, the Officials Group will prepare final advice for the relevant decision maker and advise the fishery of the final decision.

4.4.1.3 Economic Instruments

Criteria for an Economic Instrument

It is important that any economic instruments adopted as part of the NPOA seek to maximise the possible reduction in incidental catch, but at the same time, do not impose unreasonable costs on the commercial fishing industry. As such, the following criteria will be used to guide the development and consideration of suitable economic instruments. Any economic instrument adopted under the NPOA should:

1. be effective, in that it promotes and facilitates the achievement of the goals and objectives of the NPOA;

2. be cost-effective, in that it avoids the creation of any unnecessary administrative and compliance costs for the fishing industry;

3. promote fair and equitable outcomes, so that those who contribute the most to the problem, incur the greatest cost, and those that effectively mitigate the problem gain the greatest benefit;

4. be compatible with and complementary to any other management measures adopted as part of the NPOA;

5. encourage the development of innovative approaches to reducing incidental catch;

6. ensure that fishers have the flexibility to make good decisions about the most efficient and effective mitigation measures; and

7. be capable of being effectively monitored and enforced.

Options for economic instruments will be developed in consultation with key stakeholders over the next 12-24 months. A final decision on the use economic instruments will depend on whether a satisfactory instrument can be developed.

4.4.1.4 Bycatch Limits

The approach to using bycatch limits set out in Table 1 takes into account the following considerations:

- there is currently insufficient data on individual seabird species to set meaningful individual species bycatch limits;

- an individual species bycatch limit is impractical for some species because they cannot be visibly distinguished from other species making enforcement of a bycatch limit difficult;

- a mandatory multi-species bycatch limit cannot currently be set under the Fisheries Act. In addition, the information principles set out in section 10 of the Act may make setting a mandatory multi-species bycatch limit problematic;

- it will take time to collect and model the data necessary to set mandatory bycatch limits for individual seabird species;

- establishing voluntary multi-species bycatch limits as soon as possible means that progress can be made in reducing incidental catch of all albatross and petrel species at the same time as the necessary information can be obtained to set mandatory individual bycatch limits for the more threatened species;

- voluntary bycatch limits will act as a useful performance indicator for fishers and a trigger point for operational bycatch decision rules set out in codes of practice;

- reducing the incidental catch of some seabird species will have flow on effects for the reduction of incidental catch of other species; and

- requiring voluntary bycatch limits be decreased over time will ensure that continuous improvement is made in the reduction of incidental catch.

Albatross and petrel have been selected as the species to which voluntary bycatch limits should apply because they have been identified through autopsy and observer programmes as

being the main species caught in fisheries with known seabird interactions. In addition, the majority of seabird species classified as being threatened are albatross and petrel species.

Mandatory Bycatch Limits

Mandatory bycatch limits will be set for individual seabird species where there is sufficient information to show that the level of incidental catch in New Zealand fisheries is such that the long-term viability of the species is threatened, and to allow an appropriate bycatch limit to be set. At present, there is insufficient information to set mandatory bycatch limits for any seabird species. Models for evaluating the level of risk posed to individual species by fisheries are under development (see section 4.5.3.1).

Although mandatory bycatch limits will eventually be set for some seabird species, it is not envisaged that they will be set for all or even the majority of seabird species. There are two key reasons for this. First, there will be insufficient information about some species to allow mandatory bycatch limits to be set, even with new research being undertaken. Second, the threat to some seabird species from fishing activity may not be considered high enough to warrant the setting of a mandatory bycatch limit, as they are costly to monitor and enforce. In both of these cases, a reduction in incidental catch of these species will be achieved by other management measures, including voluntary bycatch limits and input controls.

It is important that the information necessary to make sensible decisions about the setting of mandatory bycatch limits for seabirds is generated, and made available in a timely manner. Section 4.5.3 discusses research programmes designed to gather this information.

Guidelines for Bycatch Limits

The Technical Working Group and the Officials Group will develop a set of guidelines to assist fishers to set voluntary bycatch limits through a code of practice. The guidelines will cover such matters as:

- setting bycatch limits;
- reducing bycatch limits over time, taking into account advances in technology, knowledge and financial implications;
- what constitutes a dead bird for the purpose of the bycatch limit;
- monitoring compliance with bycatch limits; and
- sanctions for exceeding bycatch limits.

The voluntary bycatch limits set by fishers will be reviewed by the Technical Working Group as part of the process of approving codes and monitoring and evaluating fishers performance against them.

4.4.2 Management Measures for High Seas Fisheries

The NPOA applies to New Zealand flagged vessels participating in high seas fisheries. High seas fisheries are fisheries in waters outside the national fisheries jurisdiction of any country, including New Zealand's EEZ. International agreements and conventions may or may not apply within high seas fisheries. The NPOA also applies, in an education and information sharing capacity, to foreign flagged vessels fishing in high seas and catching protected seabird species.

The measures outlined in the NPOA for managing the incidental catch of seabirds in high seas fisheries are derived primarily from New Zealand's obligations arising from international agreements and conventions and RFMOs. Where no international agreement or RFMO exists for a particular fishery, or where the existing measures are not of a sufficiently high standard to meet the goals and objectives of the NPOA, then New Zealand may choose to adopt measures unilaterally.

New Zealand will continue to actively participate within international and regional organisations to promote appropriate measures for achieving a reduction in incidental catch. New Zealand will also seek to promote education and awareness in high seas fisheries about the need to reduce seabird incidental catch and the measures available for doing this.

The measures in the NPOA for managing the incidental catch of seabirds in high seas fisheries differ in some respects from those measures for fisheries within New Zealand waters. This is to recognise the key differences in the legal framework on the high seas compared to the EEZ and territorial waters. For example, conservation and management measures adopted by international and regional arrangements are often negotiated by a number of countries and agreed by consensus. During negotiations, compromises are often made in order to secure agreement and adoption of measures. Consequently, New Zealand may be bound by measures that differ from domestic measures or are not of the same standard.

The consequences of applying management measures unilaterally to New Zealand flagged vessels in international fisheries are likely to be different from the consequences of applying the same measures domestically. In setting unilateral management measures to reduce incidental catch by New Zealand flagged vessels in high seas fisheries, there is a risk that, at the margin, New Zealand vessels face the full cost of measures to reduce incidental catch if other countries do not adopt comparable measures. Care must be taken to ensure that management measures do not put New Zealand flagged vessels at a competitive disadvantage, thereby creating perverse incentives for New Zealand vessels to re-flag to another country to avoid the requirement to adopt mitigation measures.

Another risk that needs to be considered, particularly in new or developing fisheries, is that by adopting unilateral measures to reduce incidental catch, New Zealand could be disadvantaged in its development of catch history for a fishery, and hence its access to future international catch allocations could be compromised.

Also, New Zealand has no jurisdiction over the activity of foreign flagged vessels in high seas fisheries. This restricts the manner in which New Zealand can influence the impact of foreign vessels on seabird species that breed in New Zealand.

Nevertheless, by adopting measures in high seas fisheries unilaterally, New Zealand will be leading by example and may be successful in ultimately getting the measures adopted by a regional organisation so that they become binding on all vessels in a fishery. This means that the costs and benefits of applying measures unilaterally that are more stringent than those arising from New Zealand's international obligations need to be carefully considered on a case-by-case basis.

The extent of incidental catch in high seas fisheries is still largely unknown. This includes the level of incidental catch by New Zealand flagged vessels. The absence of this information makes it difficult to set bycatch limits or to impose relevant measures for New Zealand flagged vessels, both through international and regional organisations, and unilaterally. As

with measures for fisheries within New Zealand waters, obtaining more information about the level of incidental catch will be a key objective of measures implemented under the NPOA for high seas fisheries.

4.4.2.1 Management Measures

Table 2 summarises the measures for achieving the goals and objectives of the NPOA in high seas fisheries.

Table 2: Management Measures for High Seas Fisheries

Measures	Actions
Codes of Practice	Where the existing measures of an international or regional organisation are not sufficient to meet the goals and objectives of the NPOA, or where no international or regional organisation exists for a particular fishery, New Zealand may, from time to time and on a case by case basis, adopt measures unilaterally for specific high seas fisheries through voluntary codes of practice. The Officials Group, as required, will make recommendations on the adoption of voluntary or mandatory codes of practice by New Zealand vessels in high seas fisheries. In determining whether codes of practice should be adopted, the costs and benefits specific to each high seas fishery will be carefully considered. Where adopted, voluntary codes of practice will be made mandatory through a permit or regulation in any of the following circumstances: • there is inadequate sign-up to the code by fisheries within the specified timeframe; or • the measures outlined in voluntary codes are inadequate to achieve the goals and objectives of the NPOA; or • following a review of the effectiveness of the NPOA, voluntary codes of practice are determined to be ineffective in achieving the goals and objectives of the NPOA. All conditions applying to the development and implementation of codes of practice for fisheries with known seabird interactions outlined in Table 1 will apply to the development and implementation of codes of practice in high seas fisheries. New Zealand will encourage appropriate codes of practice to be adopted by all countries with vessels operating in high seas fisheries where there is incidental catch of seabird species.

Input Controls	If considered appropriate for a particular high seas fishery, or if New Zealand has an international obligation to do so, New Zealand flagged vessels fishing in high seas fisheries will implement appropriate input controls through regulation, a permit or code of practice. Where appropriate, New Zealand will work to promote the adoption of effective input controls through international agreements and RFMOs.
Economic Instruments	Consideration will be given to the application of any economic instruments developed under the NPOA to New Zealand vessels in high seas fisheries.
Bycatch Limits	If considered appropriate for a particular high seas fishery, or if New Zealand has an international obligation to do so, New Zealand flagged vessels fishing in high seas fisheries will implement bycatch limits through regulation, a permit or code of practice. Where appropriate, New Zealand will work to promote the adoption of bycatch limits through international agreements and RFMOs, where the information necessary to set effective limits is available.
Other Measures	New Zealand will continue to actively participate in international and regional organisations to promote appropriate measures for achieving a reduction in incidental catch. New Zealand will seek to promote education and awareness in high seas fisheries about the need to reduce the incidental catch of seabirds and the measures available for doing this.

The package of measures for high seas fisheries has many of the features of the package of measures for Fisheries with Known Seabird Interactions. For example, it provides fishers with flexibility to determine the most effective and least cost methods of reducing incidental catch in their particular fishery, and provides incentives for continuous improvement. The package of measures for high seas fisheries also:

- ensures that any measures set by a RFMO or international agreement are adopted and provides a mechanism to put in place additional measures where necessary to achieve the goals and objectives of the NPOA;
- utilises measures that maximise New Zealand's ability to influence fishing practices in high seas fisheries; and
- minimises the overall cost to New Zealand vessels of adopting mitigation measures so as not to create incentives for re-flagging as foreign vessels.

4.4.3 Management Measures for Other Fisheries

This group of fisheries includes all commercial and non-commercial fisheries not included in the previous two groups of fisheries (i.e. Fisheries with Known Seabird Interactions and High

Seas Fisheries). Identified in this group are pot and set-net fisheries, and recreational line fisheries.

The fisheries in this group generally don't have a high level of reported interaction with seabirds. However, they're included in the NPOA because there is some evidence that they may cause seabird mortalities. For example, seabird deaths have been reported in the set net, pot and recreational line fisheries. For set net fisheries in particular, there is evidence to suggest that the potential interaction with some seabird species may be high, particularly those that live, feed and breed inshore.

The main objective of the management measures adopted for this group of fisheries is to gain more information about the extent and nature of their impact on seabird species. This will enable appropriate management measures to be put in place on a fishery-by-fishery basis. Where a commercial fishery in this group is shown to have an impact on seabird species, consideration will be given to re-classifying it as a fishery with known seabird interactions. The management measures outlined in Table 1 will then apply. The Technical Working Group will be responsible for developing and recommending to the Officials Group a clear process, including criteria, for determining whether commercial fisheries in this group should be moved into the group known as 'Fisheries with Known Seabird Interactions'.

Further work needs to be done to determine the best way of managing the impact of non-commercial fisheries on seabird species. This is because the regulatory and institutional frameworks currently in place for managing the impact of commercial fisheries on seabird species do not exist for non-commercial fisheries and a different approach to management will be required.

Further work needs to be undertaken with iwi to determine how customary fisheries should be addressed within the scope of the NPOA. MFish and DoC intend to undertake discussions with iwi over the next 8-12 months to gather more information about the impact of customary fisheries on seabirds. The development of proposals for inclusion in the NPOA will also be discussed.

4.4.3.1 Management Measures

Table 3 summarises the management measures for achieving the goals and objectives of the NPOA in all other fisheries.

Table 3: Management Measures for Other Fisheries

Measures	Actions
Input Controls	Any existing or future mandatory input controls will apply.
Legal Instruments	Options for amendment to legislation to enable action to be taken against individual vessels that fail to take reasonable precaution to avoid, remedy and mitigate incidental catch will be developed by the Officials Group and used as the basis of further discussion with stakeholders by 20 December 2004.

Additional Measures	Research will be undertaken to determine the impact that these fisheries have on seabird species. A specific programme of research will be undertaken on the interaction of recreational fisheries with seabirds. Information gained from the research will be used to identify options for managing interactions. The Officials Group will undertake discussions with iwi to gather more information about the impact of customary fisheries on seabirds and consider the development of proposals for inclusion in the NPOA by 20 December 2004. Where research establishes that a commercial fishery in this group does have a significant impact on seabird species, and the established criteria are met, the fishery will be moved into the group called 'Fisheries with Known Seabird Interactions' and the management measures outlined in Table 1 will apply.

4.5 SUPPORTING MEASURES

The management measures outlined in section 4.4 will not stand-alone. They will be supported by a range of other measures to ensure that they can be implemented effectively and have the best chance of achieving the goals and objectives of the NPOA. This section outlines additional measures that will support the management measures.

4.5.1 Education and Awareness

A specific objective of the NPOA is to promote education and awareness programmes to ensure that all fishers are aware of the need to reduce incidental catch and the measures available to achieve a reduction. These programmes will play an important role in building commitment to the achievement of goals of the NPOA and enabling effective ways of reducing incidental catch to be implemented. Education and awareness is particularly important because the management measures are designed to place greater responsibility for mitigation of incidental catch on fishers. For example, good knowledge and understanding of the issues surrounding the reduction of incidental catch will be necessary to ensure that effective measures are implemented through codes of practice.

Education and awareness about the reduction of incidental catch currently takes place in a number of forms including:

- training courses provided by the New Zealand Seafood Industry Training Organisation;
- through Southern Seabird Solutions projects, which are aimed at fostering adoption of best practice mitigation measures in New Zealand and overseas fishing fleets;

- seabird/fishery advisory officers who have been employed by DoC in the tuna and ling fisheries in the past, and the snapper fishery in the 2003-04 season.

Additional ways in which education and awareness will be promoted under the NPOA are through:

1. codes of practice; and

2. proposals to be developed by the Technical Working Group.

Section 4.4.1 outlines the requirement for all fisheries with known seabird interactions to prepare codes of practice to reduce the incidental catch of seabirds. Some New Zealand vessels in high seas fisheries may also implement codes. In both cases, the codes will be required to outline ways that education and awareness programmes will be used to reduce incidental catch. This could include programmes being undertaken within the fishery, with other fisheries, or with other stakeholder groups. Promoting education and awareness through codes of practice will encourage fisheries to identify their own educational needs and provide them with the flexibility to determine the ways in which those needs can be met.

In addition, the Technical Working Group will consider ways in which education and awareness programmes can contribute to a reduction in incidental catch across all fisheries that interact with seabirds. The proposals may include building on the existing methods of promoting education and awareness or the development of new methods.

4.5.2 Information Gathering

The effective implementation of the NPOA will require the availability of reliable information on a range of factors relevant to the incidental catch of seabirds. A specific objective of the NPOA is to ensure that there is sufficient, reliable information available for the effective implementation and monitoring of management measures. In particular, information will be required on:

- the interaction of seabird species with fisheries, including the level of incidental catch, so that decisions can be made about appropriate management measures;

- compliance with management measures, to enable corrective action to be taken where necessary; and

- the effectiveness of the management measures in achieving the goals and objectives of the NPOA.

Information on matters relating to incidental catch is currently collected through two main methods. Both the Wildlife Act and the Fisheries Act make provisions for the relevant Ministers to require that all incidental catch of seabirds is be reported. This provision is currently utilised under the Wildlife Act, but not under the Fisheries Act. Observer coverage is the other main method of collecting information about the incidental catch of seabirds.

The management measures outlined in section 4.4 create some incentives for fisheries to gather certain information about the level and nature of incidental catch. This will be necessary to implement effective codes of practice and to monitor and report on progress against codes of practice.

The following additional measures will be used to ensure that the necessary information is gathered:

- the Technical Working Group will review the ways in which collected data is managed and used to inform decision making under the NPOA;
- the Technical Working Group will make recommendations to the Officials Group on appropriate levels of observer coverage for individual fisheries annually;
- the levels of observer coverage in each fishery will be reviewed on a regular basis to ensure that they are consistent with the goals and objectives of the NPOA;
- regulations will be enacted under the Fisheries Act to require that all incidental catch of seabirds is reported; and
- the feasibility of deploying alternative options for gathering information, such as electronic monitoring, will be assessed by the Technical Working Group.

4.5.3 Research

Research into issues surrounding the interaction of seabird species with fisheries is necessary to gather the knowledge required to put in place effective management measures and improve these measures over time. Specific objectives of the NPOA are to encourage and facilitate research into affected seabird species and their interactions with fisheries, and to encourage and facilitate research into new and innovative ways to reduce incidental catch.

As well as existing research programmes, additional research may be required to achieve the goals and objectives of the NPOA. The Technical Working Group will be responsible for making recommendations to the Officials Group about research that should be undertaken in relation to incidental catch, and the priority of different research proposals. Research programmes under the NPOA will generally focus on three main areas:

- seabird population monitoring;
- nature and extent of incidental catch; and
- mitigation measures.

4.5.3.1 Seabird Population Monitoring

Research that monitors seabird populations will contribute to the implementation and enforcement of bycatch limits. It will also be used to assess the effectiveness of management measures and the overall effectiveness of the NPOA. Specific research initiatives include:

- prioritising seabird species for population modelling;
- designing and implementing population models and/or monitoring programmes for the top priority species to provide the necessary data to assess the impact of fishing on those populations;
- evaluating the use of modelling techniques that allow for high-risk, but data-poor species to be managed;

- undertaking population monitoring of top priority seabird species; and
- providing annual progress reports to stakeholders on population monitoring programmes.

4.5.3.2 Nature and Extent of Incidental Catch

Research on the nature and extent of the incidental catch of seabirds will be used to inform decisions about the adoption of additional management measures, including determining the need for mandatory input controls and bycatch limits. It will also be used to determine the effectiveness of management measures and to review the effectiveness of the NPOA overall. In addition, information on the nature and extent of incidental catch will be used to make decisions about the level of interaction that individual fisheries have with seabirds, and therefore, which package of measures should apply to them. Specific research initiatives will include:

- evaluating the current research programme to determine whether it provides the most effective and efficient method of determining the nature and extent of incidental catch for the purposes of the NPOA;
- designing an ongoing programme of analysis that uses up-to-date information on incidental catch to inform fisheries management, with potential to allow for in-season bycatch limits for high-priority species;
- undertaking research into the levels of observer coverage needed across different fisheries to achieve target levels of estimation of incidental catch;
- investigating alternative options for gathering information on incidental catch, such as electronic monitoring;
- designing and undertaking a research programme to determine the nature and extent of incidental catch in the group of fisheries defined as 'High Seas Fisheries';
- designing and undertaking a research programme to determine the nature and extent of incidental in the group of fisheries defined as 'Other Fisheries'; and
- undertaking a specific programme of research on the interaction of recreational fisheries with seabirds.

4.5.3.3 Mitigation Measures

Research into mitigation measures for reducing incidental catch will be used to inform the voluntary input controls adopted by fisheries through codes of practice. It will also be used to develop mandatory input controls, should these be required, and play a key role in promoting education and awareness about the need to reduce incidental catch and ways of achieving a reduction. Specific research initiatives include:

- designing a research programme to investigate effective mitigation measures for each fishery with known interactions with seabirds;
- undertaking research on methods of reducing incidental catch in the group of fisheries defined as 'Other Fisheries'; and

- continually reviewing research into new mitigation measures to determine the implications for the NPOA.

4.5.4 Governance Arrangements

MFish and DoC will be responsible for the ongoing management and implementation of the NPOA. Two groups will be established to assist with different aspects of its implementation. They are the NPOA Technical Working Group and the NPOA Seabirds Officials Group.

4.5.4.1 NPOA Technical Working Group

The role of the Technical Working Group will be to provide technical advice and assistance to the Officials Group on specific issues as required. The Technical Working Group will also play a key role in monitoring progress against the goals and objectives of the NPOA. Specific functions undertaken by the Technical Working Group will include:

- developing draft guidelines for:
    - the development and implementation of codes of practice;
    - monitoring and evaluating performance against codes of practice;
    - setting voluntary bycatch limits.
- evaluating new codes of practice;
- providing a forum for technical reviews and discussions on research projects in relation to the incidental catch of seabirds and seabird population modelling;
- providing advice on future research needs, including identifying priorities for research needs;
- making recommendations on the collection and use of information about incidental catch, including the appropriate levels of observer coverage for fisheries that interact with seabirds;
- providing advice on the levels of incidental catch and the setting of bycatch limits, as appropriate;
    - identifying technical issues that need to be reflected in management measures, including bycatch limits;
    - providing advice on matters in relation to the level of threat to individual seabird species, including how this can be taken into account through the NPOA;
    - undertaking annual reviews of performance against measures outlined in the NPOA, including codes of practice; and
    - developing a clear process, including criteria, for determining whether commercial fisheries in the group 'Other Fisheries' should be moved into the group 'Fisheries with Known Seabird Interactions', and making recommendations on fisheries that meet those criteria.

Membership on the Technical Working Group will be open to all interested stakeholders. In this regard, it is expected that the group will consist of representatives from MFish and DoC, research providers, the fishing industry, Maori, recreational fishers and conservation groups. Close liaison between the Officials Group and the Technical Working Group will be required. A Terms of Reference setting out the roles and functions of the Technical Working Group, and a Memorandum of Understanding clarifying the way that participants should engage in the group and with each other, will be developed by MFish and DoC.

Opportunities for stakeholder involvement in the NPOA outside the Technical Working Group process are discussed in section 4.5.4.2.

4.5.4.2 NPOA Seabirds Officials Group

The role of the Officials Group will be to undertake the policy and regulatory work necessary for the implementation and ongoing management of the NPOA for seabirds. The functions of the Officials Group will include the development of policy and regulatory proposals, undertaking consultation with stakeholders and preparing and providing advice to the Ministers of Fisheries and Conservation. This will include progressing any advice or recommendations prepared by the Technical Working Group to a point where final advice can be provided to the relevant decision makers. Specific tasks that the Officials Group will undertake include:

- making recommendations to the Ministers of Fisheries and Conservation on the implementation of management measures under the NPOA, including the setting of mandatory input controls and bycatch limits. In particular, the Officials Group will report on:
    - options for using economic instruments to further reduce seabird as far as possible;
    - options for taking legal action against individual vessels that fail to take reasonable steps to avoid, remedy or mitigate the incidental catch of seabirds; and
    - proposals for the mandatory use of tori lines in fisheries with known seabird interactions;
- undertaking consultation with stakeholders over draft guidelines for codes of practice and finalising the guidelines;
- approving codes of practice, following consideration of the recommendations of the Technical Working Group;
- undertaking consultation with iwi to determine how customary fisheries should be addressed within the scope of the NPOA;
- making recommendations to the Ministers of Fisheries and Conservation based on the outcome of annual reviews of progress against management measures; and
- undertaking five-yearly reviews of the NPOA, and making recommendations to the Ministers of Fisheries and Conservation based on the outcome of the review.

Consistent with the role and functions of the Officials Group, membership will consist of officials from MFish and DoC. Close liaison between the Officials Group and the Technical Working Group will be required. A Terms of Reference setting out the roles and functions of the Officials Group, and a Memorandum of Understanding clarifying the way that participants should engage in the group and with each other, will be developed by MFish and DoC.

Prior to making recommendations to Ministers, the Officials Group will undertake consultation with stakeholders on any significant policy or regulatory proposals as per the usual process of public consultation that is undertaken by the government over such issues. This consultation will be undertaken with all interested parties, including those that may also be involved in the Technical Working Group.

4.6 MONITORING AND REVIEW

The NPOA will be monitored and reviewed regularly to ensure that the goals and objectives are being achieved and that it continues to be the most effective means of reducing the incidental catch of seabirds. Monitoring of the NPOA will also facilitate New Zealand's regular code of compliance reporting to the United Nations Food and Agriculture Organisation (FAO). Monitoring and review of the NPOA will take place annually and five-yearly.

4.6.1 Annual Review

The purpose of the annual reviews will be to assess actual performance against the measures outlined in the NPOA. This will include a review of industry performance against codes of practice and the need to replace voluntary measures with mandatory measures, such as the setting mandatory bycatch limits or input controls.

The Technical Working Group will undertake the annual reviews, which will involve:

- reviewing the progress of fisheries against their codes of practice;
- making recommendations to the Officials Group on necessary changes to management measures or bycatch limits based on new information or research;
- making recommendations to the Officials Group on the need to update the NPOA to ensure consistency with New Zealand's obligations arising from any relevant international and regional agreements and conventions of which New Zealand is a member, including the ACAP;
- making recommendations to the Officials Group on the appropriate levels of observer coverage for each fishery for the coming year; and
- making recommendations to the Officials Group on research priorities for the coming year.

Following the reviews, the Technical Working Group and the Officials Group will consider the need for changes to codes of practice and the implementation of additional management measures (including mandatory measures).

The timing of the annual reviews will mean that any legislative measures required to address issues arising from the review will be put in place by the beginning of the following fishing

year. This will mean that there is a time lag of one year between the review and the implementation of corrective measures. Although not desirable, this time lag cannot be avoided. Nevertheless, in season measures can be taken in relation to the breach of any existing mandatory bycatch limits or input controls, legal action against individual vessels, and voluntarily by the industry through codes of practice.

4.6.2 Five-Yearly Review

The purpose of the five-yearly reviews will be to assess the overall performance of the NPOA. The five-yearly reviews will consider the:

- appropriateness of the purpose, goals and objectives of the NPOA;
- adequacy of the scope, including the species and fisheries addressed;
- consistency with legislative and management frameworks;
- performance and adequacy of management measures;
- the consistency with New Zealand's obligations arising from any international and regional agreements and conventions of which New Zealand is a member, including the ACAP;
- inclusion of current knowledge of seabird species, fisheries interactions, and mitigation measures;
- current research, and whether this is contributing to the achievement of the NPOA; and
- effectiveness of current education and awareness programmes.

The five-yearly reviews will be undertaken by the Officials Group, in consultation with the Technical Working Group and stakeholders. Following the review, the Officials Group will report to the Ministers of Fisheries and Conservation on the performance of the NPOA. Any recommendations arising from the review for improving the performance of the NPOA will be included in the report to Ministers. The approval of the Ministers of Fisheries and Conservation will be required prior to any changes being made to the NPOA. The first five-yearly review will take place in March 2008.

Section 5: Appendices

APPENDIX 1: SPECIES REPORTED CAUGHT IN LONGLINE AND TRAWL FISHERIES (1996-99 to 2001-02)

Common Name	Breeding Status in New Zealand	Threat Status in NZ (DoC)[20]	Threat Status (IUCN)	Longline			Trawl		
				J.V. Tuna	Dom. Tuna	Demersal	Squid	Fish	Scampi
Albatross									
Chatham Albatross	E	SD	CEn	*		*		*	
Campbell Albatross	E	NV	Vun	*	*		*	*	
Gibson's Albatross	E	RR	Vun	*	*				
Antipodean Albatross	E	RR	Vun	*	*		*		
Salvin's Albatross	E	RR	Vun	*	*	*	*	*	*
Light-mantled Sooty Albatross	I	GD	NT	*					
White Capped Albatross	E	RR	Vun	*		*	*	*	*
Buller's Albatross	E	RR	Vun	*	*	*	*	*	
Northern Royal Albatross	E	NV	En					*	
Southern Royal Albatross	E	RR	Vun	*			*	*	
Wandering Albatross (Snowy)	V	M	Vun	*					
Black Browed Albatross	I	C	En	*	*		*	*	*
Pacific Albatross (Northern Buller's)	E	RR	Vun			*			*

[20] Rod Hitchmough (complier) New Zealand Threat Classification System Lists 2002. *Threatened Species Occasional Publication 23.*

Common Name	Status in New Zealand	Threat Status in NZ (DoC)	Threat Status (IUCN)	Longline			Trawl		
				J.V. Tuna	Dom. Tuna	Demersal	Squid	Fish	Scampi
Petrels									
Black Petrel	E	GD	Vun		*				
White-chinned Petrel	I	RR	Vun	*	*	*	*	*	
Grey Petrel	I	GD	LC	*		*	*	*	
Flesh-footed Shearwater	I	GD	NT		*	*			*
Southern Cape Pigeon	M	M				*		*	
Snares Cape Pigeon	E	RR	LC			*			
Sooty Shearwater	I	GD	LC			*	*	*	*
Northern Giant Petrel	I	NT	LC	*		*		*	
Southern Giant Petrel	M	M	Vun			*			
Black-bellied Storm Petrel	I	NT	LC					*	
Grey-faced Petrel	E	NT	LC		*	*			
Fairy Prion	I	NT	LC					*	
Common Diving Petrel	I	NT				*	*		
Buller's Shearwater	E	RR	Vun			*			
Fluttering Shearwater	E	NT	LC			*			
Short-tailed Shearwater	M	M				*			
Westland Black Petrel	E	RR	Vun	*					

Breeding Status in NZ: **E** = Endemic - breeds only in New Zealand. **I =** Indigenous - breeds in New Zealand and elsewhere. **M** = Migrant - predictably and cyclically visits New Zealand as part of its life cycle, but does not breed here. **V** = Vagrant - visits to New Zealand are brief, rare and unpredictable.

Threat Status NZ (DoC): **NC** = Nationally Critical. **NE** = Nationally Endangered. **NV** = Nationally Vulnerable. **SD** = Serious Decline. **GD** = Gradual Decline. **RR** = Range Restricted. **SP** = Sparse. **NT** = Not Threatened. **M** = Migrant. **C** = Coloniser. **V** = Vagrant. **NL** = Not Listed.

Threat Status (IUCN): Threat ranking given by The World Conservation Union. **CEn** = Critically Endangered. **En** = Endangered. **Vun** = Vulnerable. **NT** = Near Threatened. **LC** = Least Concern. **DD** = Data Deficient.

* = reported as caught in this period

APPENDIX 2: INCIDENTAL CATCH OF SEABIRDS IN SET NET, LINE, AND POT FISHERIES

Common name	Status in New Zealand	New Zealand threat status (DOC)[21]	Estimated population	Fisheries
Yellow-eyed Penguin	Endemic	Nationally vulnerable	4,000 adult birds total. 4 populations: mainland, and Stewart, Auckland and Campbell Islands.	Inshore set-nets.
Blue Penguin	Indigenous	Gradual decline	20,000 to 40,000 pairs.	Inshore set-nets.
Stewart Island Shag	Endemic	Nationally vulnerable	5,000– 8,000 total. Breeds between Oamaru and Foveaux Strait.	Set-nets. Feeding behaviour suggests a potential risk from pots.
New Zealand King Shag	Endemic	Range restricted	600 birds. One population (Marlborough Sounds).	Feeding behaviour suggests a potential risk from pots and set-nets.
Chatham Island Shag	Endemic	Range restricted	1,684 breeding adults. One population (Chatham Islands).	Feeding behaviour suggests a potential risk from pots and set-nets.
Pitt Island Shag	Endemic	Range restricted	1,300 breeding adults. One population (Chatham Islands).	Feeding behaviour suggests a potential risk from pots and set-nets.
Pied Shag	Endemic sub-species	Sparse	5,000–10,000 pairs.	Inshore set-nets and recreational line fishers. Feeding behaviour suggests a potential risk from pots.
Spotted Shag	Endemic	Not threatened	25,000–30,000 pairs.	Set-nets. Feeding behaviour suggests a potential risk from inshore line fisheries.
Little Shag	Endemic sub-species	Not threatened	10,000–50,000 birds.	Recreational inshore line fishers and set-nets. Feeding behaviour suggests a potential risk from pots.
Black Shag	Indigenous	Not threatened	5,000-10,000 pairs.	Recreational inshore line fishers and set-nets. Feeding behaviour suggests a potential risk from pots.
Little Black Shag	Indigenous	Not threatened	2,000-4,000 birds.	Inshore set-nets.
Hutton's Shearwater	Endemic	Nationally endangered	94,000–105,000 breeding pairs. One population (Kaikoura).	Inshore set-nets. Feeding behaviour suggests a potential risk from recreational line fishers.
Sooty Shearwater	Indigenous	Gradual decline	At least 1 million pairs, c 5 million birds.	Inshore set-nets and pot fisheries.

[21] Rod Hitchmough (compiler) New Zealand Threat Classification System lists 2002. *Threatened Species Occasional Publication 23.*

Common name	Status in New Zealand	New Zealand threat status (DOC)[21]	Estimated population	Fisheries
Fluttering Shearwater	Endemic	Not threatened	Up to 100,000 birds.	Recreational line fishers and set-nets.
Flesh-footed shearwater	Indigenous	Gradual decline	25–50,000 pairs.	Recreational line fishers.
Australasian Gannet	Indigenous	Not threatened	92,000 birds.	Recreational line fishers and set nets.