

# INITIAL POSITION PAPER - LOCALISED DEPLETION OF BLUE COD IN THE MARLBOROUGH SOUNDS

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## Executive Summary

- 1 This Initial Position Paper (IPP) proposes a range of new management measures to continue to address the localised depletion of blue cod (*Parapercis colias*) populations in the Marlborough Sounds. The Ministry of Fisheries (MFish) contends that additional measures are necessary to give greater certainty for populations to rebuild in depleted areas and safeguard the currently productive outer areas from high fishing pressure.
- 2 Recent information on blue cod abundance shows a continued decline of blue cod abundance throughout the Marlborough Sounds. All areas recorded the lowest numbers of juveniles from a time-series of surveys since 1995. There was an average decline of 57% of juveniles from the 2004 survey - with the inner Queen Charlotte Sound reporting no blue cod (both adults and juveniles). Only the very outer areas of the Marlborough Sounds recorded a reasonable number of adult blue cod.
- 3 The serial depletion of blue cod is consistent with a high level of recreational fishing pressure in the Marlborough Sounds. This is the overriding and immediate factor affecting localised blue cod abundance.
- 4 MFish proposes a suite of new measures for the recreational blue cod fishery to reduce both harvest levels and incidental fishing mortality to allow populations to rebuild. The proposed measures include the following:
  - Temporary closure of parts of the Queen Charlotte Sound and/or Pelorus Sound to all finfishing with hook and line.
  - The daily bag limit is reduced from three to two blue cod per person and a limit of six blue cod per boat is introduced.
  - Possession of only one day's bag limit on multi-day trips.
  - Blue cod must be landed whole or gutted.
  - Fishers to retain all blue cod at or above MLS.
- 5 MFish also proposes to strengthen the existing voluntary agreement to prevent commercial fishers from targeting blue cod within large areas of the Queen Charlotte Sound and Pelorus Sound.
- 6 This paper also considers proposals by the Marlborough Sounds multi-sector group *SoundFish* to require boat fishers to use one hook per line and large hooks (6/0 or greater) and amend the Marlborough Sounds Area boundary.
- 7 The proposed area closures have greatest impact on the recreational sector by requiring fishers to travel further to open areas (ie, outer areas of the

Marlborough Sounds). The proposed daily bag limit adjustments have less impact, as many fishers have already experienced a reduction in catch levels through the depletion of local blue cod populations. MFish is uncertain to what degree the proposed boat limit assists with the reduction in recreational catch but welcomes the communities' comments on the proposals desirability.

- 8 When deciding on management options it is important to consider that previous initiatives since 1993 have not been successful to reduce recreational harvest levels of blue cod through amateur daily bag limit reductions and minimum legal size adjustments. Blue cod continues to be the most popular target finfish species for recreational fishers in the Marlborough Sounds and fishing pressure remains high. The current daily bag limit of three blue cod per person leaves little scope for further catch reduction without the need for temporary area closures. MFish believes these factors indicate that stronger measures are necessary to rebuild localised blue cod populations and to enable the Marlborough Sounds to return to a sustainable blue cod fishery in the near future.

## **Regulatory Impact Analysis Requirements**

- 9 This IPP has been deemed significant and has been reviewed by the Ministry of Economic Development's Regulatory Impact Analysis Unit.
- 10 For more information on the Regulatory Impact Analysis Requirements and the meaning of the word 'significant' with reference to an IPP, please refer to the Ministry of Economic Development website [www.med.govt.nz](http://www.med.govt.nz).

## **The Issue**

- 11 Blue cod is the most important recreational target finfish species in the Marlborough Sounds (for resident and visitor fishers alike). Approximately 83% of the total estimated recreational catch from the Challenger Blue Cod (BCO 7) Fishery is taken from the Marlborough Sounds.
- 12 Recreational fishing pressure within the Marlborough Sounds has increased steadily over the past decade, with a marked increase in the use of trailer and berthed boat numbers. The expansion of recreational boat usage has also included an increase in average vessel size and fishing frequency, coupled with the wider use of technology such as GPS receivers and fish finders. These factors mean that fishers are more mobile in the areas fished within the Marlborough Sounds, and more and more fishers are now utilising the more exposed and productive areas of the outer areas to catch blue cod. In addition, there has been an increase in the number of local charter boats that are readily able to fish in all areas of the Sounds, particularly the outer areas.
- 13 In 2003, the Minister of Fisheries implemented measures to address concerns on the sustainability of blue cod populations within the Marlborough Sounds. These measures focused on the recreational sector and included decreasing the amateur daily bag limit from six to three blue cod per person and setting the minimum legal size limit (MLS) to 30 cm total fish length (previously a 27

cm and 33 cm MLS applied for the Marlborough Sounds Area<sup>1</sup> and wider BCO 7 fishery, respectively). The intent of these measures was to reduce the recreational harvest level of blue cod in the Marlborough Sounds and to enable the rebuild of localised blue cod populations.

- 14 Recent information on blue cod abundance indicates that the 2003 management measures have not been successful in increasing blue cod numbers in the Marlborough Sounds (as at September 2007). This information indicates that the relative abundance of recruited<sup>2</sup> and pre-recruited<sup>3</sup> blue cod has continued to remain at low levels or declined further. This suggests that many areas have low numbers of blue cod.
- 15 The failure of blue cod abundance to increase suggests that recreational fishers are continuing to exert intense fishing pressure within most areas of the Marlborough Sounds. Areas of particular concern continue to include the inner and mid-areas of the Sounds, however, blue cod numbers within some outer areas are now also declining possibly in response to a transfer of fishing effort into these areas.
- 16 The continued decline of blue cod abundance in the Marlborough Sounds, in spite of previous measures, indicates that current recreational fishing pressure is still too high to allow a rebuild of localised populations. Concentrated recreational fishing effort has resulted in too many recruited fish being caught from the inner and middle areas of Queen Charlotte Sound and Pelorus Sound. It is also most likely that the accumulated mortality of returned fish from the recreational fishery has contributed to the decline of pre-recruited and juvenile blue cod across most areas of the Marlborough Sounds.
- 17 MFish contends that additional management measures are necessary to give greater certainty for localised blue cod populations to rebuild in depleted areas and safeguard the currently productive outer areas from increased fishing pressure. To achieve these outcomes, MFish proposes the following fishery management objectives for the Marlborough Sounds blue cod fishery:
  - Lowering recreational exploitation rates in depleted areas to a level that enables the rebuild of localised populations.
  - Ensure the fishery in the outer Marlborough Sounds is sustainably fished and is not serially depleted through displacement of fishing effort from the inner and mid areas.
  - Ensure the proposed measures are practicable both for fishers and fisheries compliance.

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<sup>1</sup> Marlborough Sounds Area as currently defined under the Fisheries Regulations 1986, Challenger Area Amateur Fishing Regulation 2A. This defines the 'Marlborough Sounds Area' as being the waters enclosed by a line from the northern tip of Stephens Island to Cape Jackson then to Cape Koamaru, then from West Head to East Head of Tory Channel across French Pass and Stephens Passage and back to the point of commencement.

<sup>2</sup> Recruited blue cod means fish  $\geq 30$  cm in total length.

<sup>3</sup> Pre-recruited blue cod means fish  $<30$  cm in total length.

- Ensure the proposed fisheries measures have sufficient community buy-in to be effective.

### *Fishery Assessment*

- 18 The Marlborough Sounds blue cod fishery is subject to an ongoing time-series of surveys to assess the relative abundance and size distribution of blue cod populations. The initial survey commenced in 1995, and subsequent surveys were undertaken in 1996, 2001, 2004, and 2007.
- 19 The most recent information from the 2007 survey indicates the continued decline in both recruited and pre-recruited blue cod (refer Tables 1, 2 & 3). Main findings are as follows.

#### Recruited blue cod ( $\geq 30$ cm)

- 20 Table 1 shows the *Catch Per Unit Effort* (CPUE) data for recruited blue cod from 1995 to 2007.

**Table 1. CPUE data (kg/hr) recruited blue cod ( $\geq 30$  cm) Marlborough Sounds 1995 to 2007**

Survey area	1995	1996	2001	2004	2007*	Average 1995 – 2004	% change on previous average	% change on 2004
<b>Queen Charlotte Sound</b>								
Inner	0.544	NS	0.298	0.212	0.000	0.351	-100	-100
Outer	1.164	NS	0.554	0.327	0.189	0.682	-72	-42
Extreme outer	2.522	NS	0.898	1.079	1.906	1.500	27	77
<b>Pelorus Sound</b>								
Inner	NS	0.563	0.070	0.090	0.106	0.241	-56	19
Mid	NS	1.421	0.192	0.221	0.214	0.611	-65	-3
outer	1.617	1.951	0.312	0.474	0.459	1.088	-58	-3
Extreme outer	2.325	2.079	0.806	1.841	2.418	1.763	37	31
D'Urville East	NS	7.934	3.334	2.833	2.688	4.700	-43	-5
D'Urville West	NS	NS	NS	2.798	4.842	2.798	73	73

*Note: \* preliminary data, NS not surveyed*

- 21 The data recorded shows the lowest values since 1995 for recruited blue cod in the inner and outer Queen Charlotte Sound and east D'Urville Island areas. No recruited fish were recorded in the inner Queen Charlotte Sound. The remaining inner and middle areas of the Marlborough Sounds reported very low catch rates compared to 1995 and 1996 with no indication of recovery

from the decline first identified in 2001. The extreme outer Queen Charlotte Sound and extreme outer Pelorus Sound, and west D'Urville Island reported an increase in the catch rate for recruited blue cod from the previous survey.

Pre-recruited blue cod (<30cm)

22 Table 2 shows the CPUE data for pre-recruited blue cod from 1995 to 2007.

**Table 2. CPUE data (kg/hr) pre-recruited blue cod (< 30 cm) Marlborough Sounds 1995 to 2007**

Survey area	1995	1996	2001	2004	2007*	Average 1995 – 2004	% change on previous average	% change on 2004
<b>Queen Charlotte Sound</b>								
Inner	0.178	NS	0.249	0.158	0.000	0.195	-100	-100
Outer	0.853	NS	0.763	0.610	0.431	0.742	-42	-29
Extreme outer	0.603	NS	0.723	0.961	0.665	0.762	-13	-31
<b>Pelorus Sound</b>								
Inner	NS	0.401	0.124	0.226	0.169	0.250	-33	-25
Mid	NS	1.325	0.333	0.257	0.176	0.638	-72	-31
outer	1.325	1.168	0.293	0.645	0.340	0.858	-60	-47
Extreme outer	1.186	0.723	0.640	1.193	0.774	0.936	-17	-35
D'Urville East	NS	1.976	2.791	1.845	0.670	2.204	-70	-64
D'Urville West	NS	NS	NS	1.232	0.891	1.232	-28	-28

*Note: \* preliminary data, NS not surveyed*

23 The relative abundance of pre-recruited fish (this includes juveniles 17-27 cm) has continued to decline in the inner sounds areas. These areas had a lower catch rate than 1996 and 2004. The steepest declines were reported in the inner and outer Queen Charlotte Sound, middle and outer Pelorus Sound, and east D'Urville Island. The inner Queen Charlotte Sound area is of particular concern where no pre-recruited (<30 cm) or recruited ( $\geq 30$  cm) blue cod were caught in 2007. East D'Urville Island area has also shown a marked decline in 2007 - down 70% of the catch rates for the average of the three previous surveys.

24 The extreme outer Queen Charlotte and extreme outer Pelorus appear to be within the natural variation of the survey sequence. West D'Urville Island has only been surveyed twice so it is not possible to establish any trend, although catch rates were relatively high in 2007.

## Juvenile blue cod (17-27cm)

25 Table 3 shows the CPUE data for pre-recruited blue cod from 1995 to 2007.

**Table 3. CPUE data (kg/hr) juvenile blue cod (17-27 cm) Marlborough Sounds 1995 to 2007**

	1995	1996	2001	2004	2007*	Average 1995 – 2004	% Change on previous average	% Change on 2004
<b>Queen Charlotte Sound</b>								
Inner	0.070	NS	0.130	0.140	0.000	0.113	-100	-100
Outer	0.370	NS	0.510	0.420	0.306	0.433	-29	-27
Extreme outer	0.290	NS	0.480	0.580	0.217	0.450	-52	-63
<b>Pelorus Sound</b>								
Inner	NS	0.260	0.100	0.180	0.098	0.180	-46	-46
Mid	NS	0.610	0.240	0.150	0.106	0.333	-68	-29
outer	0.700	0.580	0.190	0.430	0.171	0.475	-64	-60
Extreme outer	0.480	0.270	0.460	0.620	0.249	0.458	-46	-60
D'Urville East	NS	0.660	1.580	0.860	0.249	1.033	-76	-71
D'Urville West	NS	NS	NS	0.570	0.268	0.570	-53	-53

*Note: \* preliminary data, NS not surveyed*

26 The data for juvenile blue cod also reflects the decline shown in the pre-recruits. The exception in 2007 is that all survey areas recorded the lowest catch rate for the survey series.

### *Recreational Fishery*

27 Measures were taken in 2003 to assist the recovery of blue cod populations in the Marlborough Sounds (measures also applied to Golden and Tasman Bays). These measures included reducing the amateur daily bag limit from six to three blue cod per person and adjusting the MLS to 30 cm.

28 Data from fisher diary surveys suggest an increase in the average number of fishing trips per diarist from 12 to 18 trips per year since 2001-02. In 2005-06 blue cod were also the most frequent fish taken representing 35% of the total catch recorded by diarists (from 43 species). Snapper was the second most popular fish taken with 10% of the total recorded catch.

29 The most recent estimates of recreational harvest in the Marlborough Sounds are based on a dedicated boat ramp interview and aerial over-flight survey in 2005-06. This survey estimates the annual harvest of blue cod in the Marlborough Sounds to be about 149 tonnes.

### Commercial fishery

- 30 Within the BCO 7 commercial fishery, blue cod is exclusively caught by the inshore fishing fleet. The current TACC is set at 70 tonnes and has not been caught since 1996-97. Catches declined steadily to 27 tonnes in 2001-02, and have since risen to a peak of 58 tonnes in 2006-07.
- 31 Most of the targeted commercial catch of blue cod is taken in the small potting fishery in the outer Marlborough Sounds, particularly around D'Urville Island, Cook Strait, and Cape Campbell. The main commercial areas are essentially spatially separated from the recreational fishery. A code of practice exists for the Marlborough Sounds that ensures the commercial fishers do not target blue cod inside the areas between French Pass-Clay Point-Chetwode Island-Cape Jackson-Cape Koamaru (Figure 3).
- 32 Commercial catches taken in the Marlborough Sounds are reported within the statistical area 017, which extends from D'Urville Island to Clifford Bay. Table 4 shows the reported commercial catches for different fishing methods from statistical area 017. Catches of blue cod from this area varied over time with catches peaking in 1993-94 with 26 tonnes reported, and declining steadily to about seven tonnes in 2001-02. Since 2001-02 catches have increased steadily from 10 tonnes in 2002-03 to 25 tonnes in 2006-07. The most recent catch is the highest since 1993-94.

**Table 4. Total Estimated Catch Weight (tonnes) of blue cod by method for Statistical Area 17**

Fishing Year	Long Line	Bottom Trawl	Cod Pot	Dahn Line	Hand Line	Rock Lobster Pot	Set net
1988/89	<1	<1	2	<1			<1
1989/90	<1	16	3	<1	2	<1	<1
1990/91	2	9		<1	1		<1
1991/92	<1	6	1	<1	2		<1
1992/93	<1	7	<1	<1	1	<1	<1
1993/94	<1	5	20	<1	1		<1
1994/95	<1	8	14	<1	1		<1
1995/96	<1	6	15	<1	<1		<1
1996/97	<1	6	14	<1	<1		<1
1997/98	<1	7	12	<1	<1		<1
1998/99	<1	7	9	<1	<1	2	<1
1999/00	<1	4	8	<1	<1		<1
2000/01	<1	4	8	<1	<1		<1
2001/02	<1	4	3	<1	<1		<1
2002/03	1	<1	7	<1	<1	<1	<1
2003/04	<1	3	5	<1	<1		<1
2004/05	<1	2	15	<1	<1		<1
2005/06	<1	2	21	<1	<1		<1
2006/07	<1	1	23	<1	<1	<1	<1

- 33 Potting accounts for the majority of the catch, which is the only method that specifically targets blue cod. In 2006-07, 91% of the catch (23 tonnes) was

taken by potting. It is not possible to determine where the potting of blue cod occurs within statistical area 017 from catch returns. Fishers' anecdotal reports tell us that about half the catches from potting in 2006-07 were taken south of the Marlborough Sounds to Cape Campbell.

- 34 In 2003, a voluntary catch-spread regime was implemented by Talley's Fisheries Ltd and Challenger Finfisheries Management Company Ltd to prevent further increases in commercial catches in the outer Marlborough Sounds. This regime places a limit on the quantity of blue cod in areas where traditionally targeted by potting. Assurance was given by other quota-holders that their effort would be spread throughout Tasman & Golden Bays, and the West Coast.

### *Māori Customary Fisheries*

- 35 No quantitative information on historical or current Māori customary take is available. However, bones found in middens suggest that blue cod was a significant species in the traditional Māori take. Blue cod remains an important kaimoana species for tangata whenua.

### *Illegal Catch*

- 36 There is no quantitative information to estimate the level of illegal catch in the commercial and recreational blue cod fisheries. However, the level of illegal activity within both sectors is believed to be low. One of the contributing factors to the low level of offence detection in the recreational fishery is the daily limit are difficult to achieve because of low blue cod abundance.

## **Summary of Options**

- 37 MFish proposes the following options within the Marlborough Sounds Area (as defined by the Fisheries Regulations 1986, Challenger Area Amateur Fishing Regulation 2A:

Either:

### ***Option 1 - Status Quo***

Or:

### ***Option 2 – input & spatial controls***

- a) Reduce the amateur daily bag limit to two blue cod per person per day<sup>4</sup>

And/or:

- b) Set a limit of six blue cod per boat for amateur fishers

And/or:

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<sup>4</sup> Regulations, 2B was inserted by regs 2 and 3 Fisheries (Challenger Area Amateur Fishing) Regulations 1986, Amendment No 2 (SR 1993/287).



- c) Restrict amateur fishers on multi-day trips to possessing a single daily bag limit

And:

- d) Amateur fishers must not fillet or dehead blue cod prior to landing (gutting of blue cod is still permitted)
- e) Amateur fishers must retain all blue cod at or above MLS and cease targeting blue cod there after.
- f) All hook and line fishing is prohibited from date of gazette to January 2011 (subject to review) in:

Either:

- i) Inner and middle areas of Queen Charlotte Sound (as defined as inside a line from Bull Head to Ruaomoko Point (Arapawa Island) to Otamango Point, including the Tory Channel to East Head and West Head (sub-option 3A) (Figure 1).

And/or:

- i) Inner and middle areas of Pelorus Sound (as defined as inside a line from Tawero Point to Whakamawahi Point and to a line from Burnt Point to Post Office Point (sub-option 3B) (Figure 2)

And:

- g) All commercial targeting of blue cod is prohibited inside waters between French Pass-Clay Point-Chetwode Island-Cape Jackson-Cape Koamaru (Figure 3).

Figure 1. Proposed closed area in the Queen Charlotte Channel

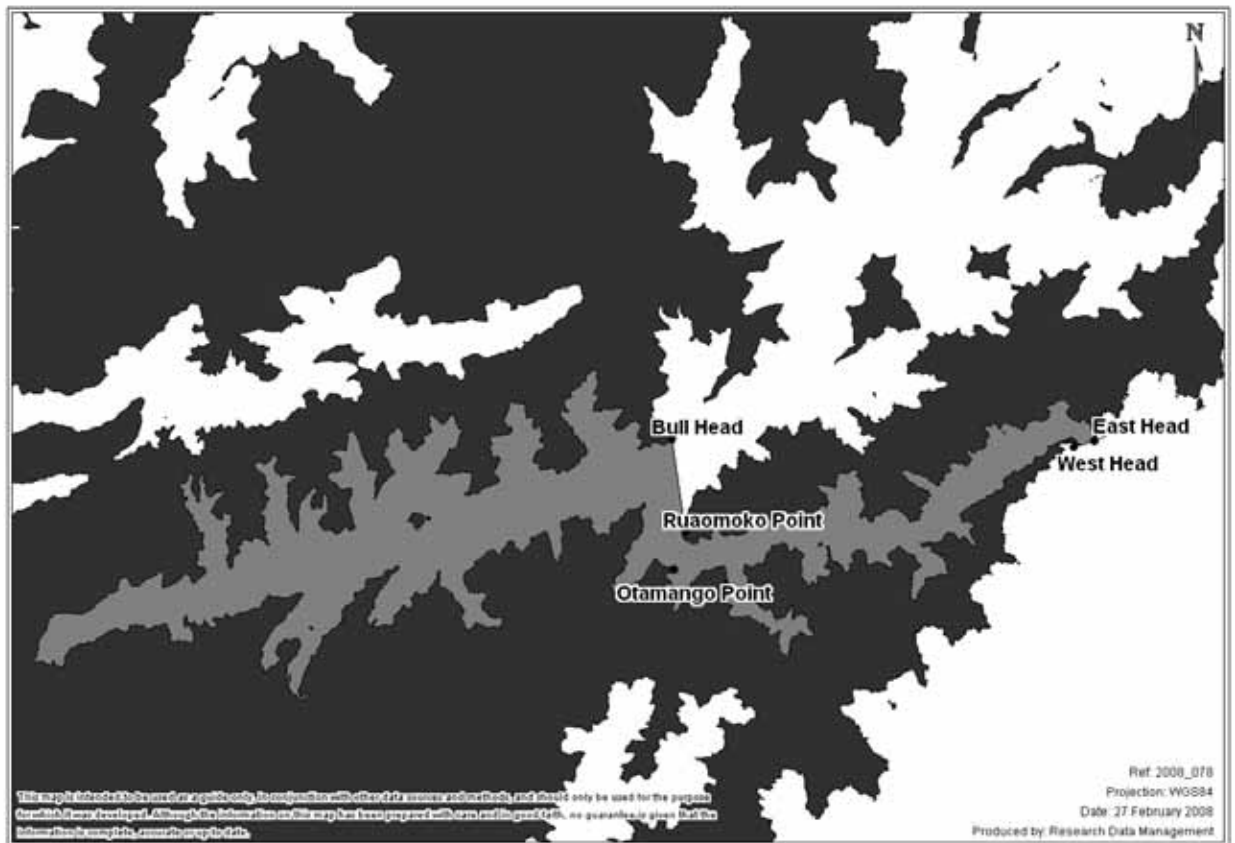


Figure 2. Proposed closed area in the Pelorus Sound

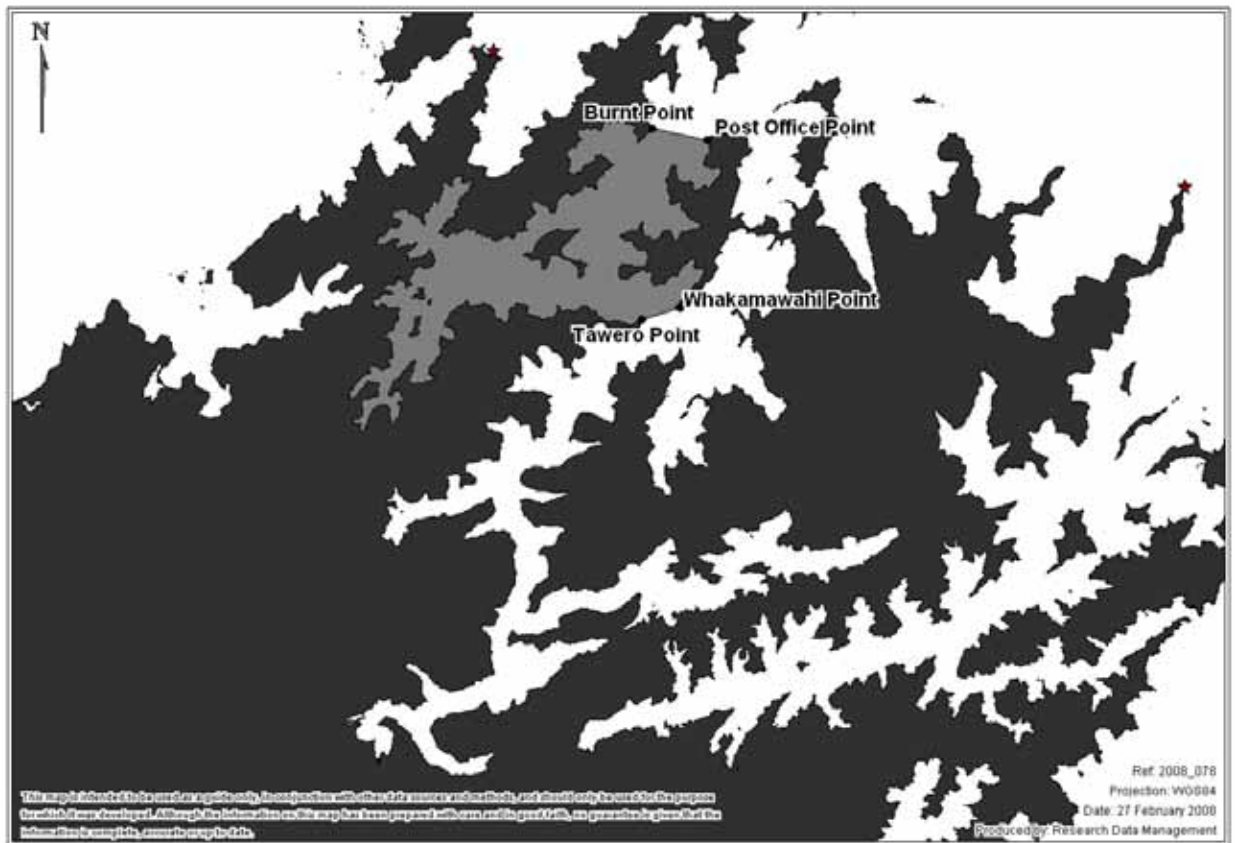
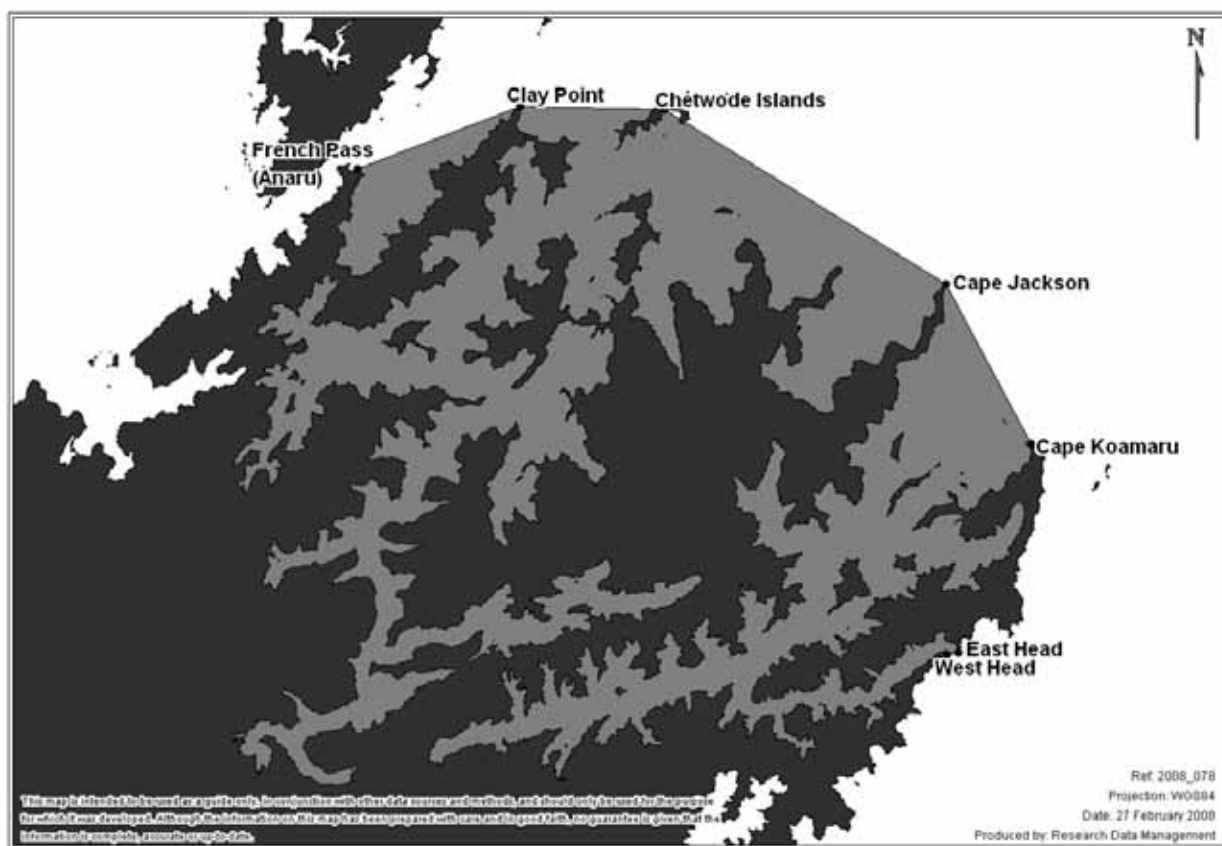


Figure 3. Proposed closed area for commercial targeting of blue cod



### Option 3 – Additional measures proposed by *SoundFish*

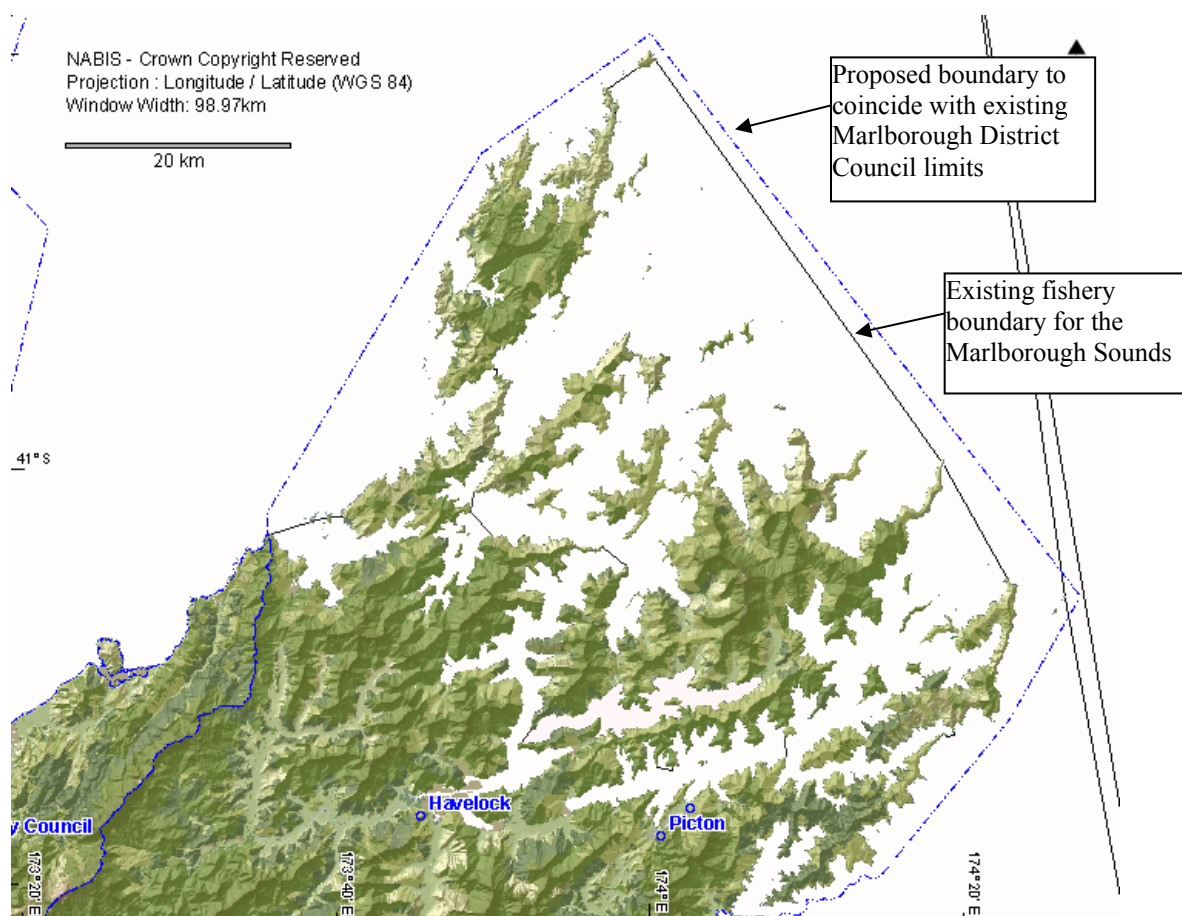
38 *SoundFish* proposes the controls outlined in Option 2 and the following additional measures.

- a) Within the Marlborough Sounds Area the following restrictions on the use of fishing hooks for fishers fishing from a boat or vessel are proposed:
  - i) Size 6/0 hook or larger to be used
  - ii) One hook to be used per line
  - iii) Set lining size 10/0 hook or larger hooks to be used

And/or:

- b) The Marlborough Sounds Area is redefined with a new boundary based on the existing Marlborough Sounds District Council (MDC) coastal boundary. The proposed boundary extends from Cape Soucis in the west to Whites Bay in the east and out to two nautical miles from shore (Figure 4).

**Figure 4. Proposed boundary for Marlborough Sounds**



## Rationale for Management Options

- 39 This IPP considers a range of measures for the Marlborough Sounds Area to achieve this desired outcome including further reducing the amateur daily bag limit from three to two fish per day, imposing a maximum boat limit of six fish, and temporarily closing a number of areas to recreational fishing. The proposals will not apply to blue cod fishing outside the Marlborough Sounds (ie, Challenger Fishery Management Area (East)<sup>[4]</sup>) and along the west coast of the South Island (ie, Challenger Fisheries Management Area).
- 40 To explore management measures that would be appropriate for the Marlborough Sounds, MFish has discussed a range of options with the multi-sector group *SoundFish*. These discussions have identified a range of new measures that balance the needs of the Marlborough Sounds blue cod fishery and local community. A range of measures have been proposed to accommodate community appetite for different approaches and enforceability. The proposed options are intended to provide a suite of measures that range in

<sup>[4]</sup> 'Challenger Fishery Management Area (East)' encompasses Golden and Tasman Bays and is defined as being the waters enclosed by a line due north of Farewell Spit to the boundary of the Challenger Fishery Management Area then in a generally easterly, southerly and westerly direction to Clarence River and back to the point of commencement (refer Regulation 2A of the Fisheries Challenger Area Amateur Fishing) Regulations 1986).

strength and allow stakeholders to consider whether temporary area closures are necessary, and if so, at what scale. In combination, the mix of measures is designed to provide a good balance to enable populations to rebuild, whilst ensuring the continued use of other fisheries in the Marlborough Sounds.

- 41 Mfish also invites submissions for proposals from the Marlborough Sounds community group *SoundFish*. These include measures for recreational boat fishers to reduce the number of hooks used to one per line, with a minimum size hook of 6/0 for line fishing and 10/0 for set lining. *SoundFish* have also proposed to amend the existing Marlborough Sounds Area boundary.
- 42 The IPP does not review the Total Allowable Commercial Catch (TACC<sup>5</sup>). But, the IPP proposes to prohibit commercial targeting of blue cod within a defined area of the Marlborough Sounds to assist with the rebuilding of blue cod populations. The proposed closed area applies to waters inside French Pass-Clay Point-Chetwode Island-Cape Jackson-Cape Koamaru (Figure 4). Commercial fishers have already agreed to not fish within this closed area under a voluntary arrangement and this proposal formalises this arrangement.
- 43 In reviewing the Marlborough Sounds blue cod fishery, MFish accepts that a wide range of physical and human factors influence fisheries resources. While fishing pressure has had a significant impact on blue cod populations, both land-based activities (ie, changes in land-use, forestry effects) and marine-based activities (ie, fishing, marine farming, tourism) are also likely to contribute to the current state of fishery.
- 44 The ongoing time-series of relative abundant surveys do not provide information on whether habitat factors are the immediate cause of the decline in blue cod abundance. This is because the surveys use pots and lines placed in the same reef locations each year. These locations by the nature of the substrate are not susceptible to damage from trawling or dredging, and have not shown signs of deterioration. Many of the inners areas where blue cod have declined are also prohibited areas for dredging and trawling.
- 45 MFish is unable to determine the effectiveness of voluntary measures on recreational fishing such as the use of larger hooks (6/0 or greater) to achieve the desired management objectives. Coupled with this, there is currently no information for the overall mortality rate (hook-related and predation) for released blue cod, and the accumulated impact. There is also very limited information available on spawning locations, tidal dispersion of juveniles and these implications for blue cod management.
- 46 Despite the information gaps, the available information for the recreational harvest estimate, relative abundance, and incidental mortality are sufficient to conclude that recreational fishing pressure is the principal and immediate cause of the decline. MFish contends that additional management measures are necessary to build upon those actions taken in 2003 to give greater certainty to rebuild localised blue cod populations and to enable the return of a sustainable Marlborough Sounds blue cod fishery in the near future.

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<sup>5</sup> TACC is currently set at 70 tonnes.

- 47 MFish acknowledges that a longer-term, ecosystem-based management approach is required to promote the continued viability of the fisheries resources within the Marlborough Sounds. The changes proposed in the management of this fishery continue to build upon the management approach taken in 2003 to reduce recreational fishing pressure.
- 48 MFish and the community will address the longer-term review of any implemented proposals, research, and future ecosystem approaches to management, through the Challenger Fin Fish Inshore Plan (CIFF). This plan recently commenced in December 2007.
- 49 When considering the effects of each management option including the *status quo*, there are two broad considerations that must be taken into account. These are: (i) the social, cultural and economic wellbeing of the Marlborough Sounds communities and (ii) the ability for each measure to give greater certainty to rebuild localised populations in depleted areas, whilst ensuring viable populations are not depleted elsewhere. To assist with the evaluation of options to deliver these desired outcomes, the four management objectives described previously should be considered.
- 50 The new measures are planned to commence from 1 October 2008 should they be approved. A communication plan will be implemented to ensure all recreational fishers are notified of changes to fishery regulations. The plan ensures the timely rollout of an information and education package for fishers and fishing retail outlets. Information pamphlets will be available from MFish offices, fishing retailers, and marinas. MFish information boards will be updated at main fisher access points such as boat ramps and beaches. In addition, a series of press releases are to occur when any changes are confirmed by the Minister of Fisheries and immediately prior to commencement. Finally information will also be made available through the MFish website and key stakeholder groups such as *SoundFish* and other recreational user groups.

## Assessment of Management Options

- 51 The proposed management measures do not include adjusting the existing MLS of 30 cm (total fish length). While a smaller MLS may allow fishers to attain their bag limit quicker, this would lead to a higher incidental mortality as fishers retain the largest fish caught. As such, this measure would undermine the intent of proposed lower bag limit. Conversely, increasing the MLS would lead to a higher incidental mortality. Therefore, MFish contends that retaining the existing 30 cm MLS is appropriate at this time as the proposed reduction to the daily bag limit, restricting the accumulation of catch, and no high-grading measures increases the effectiveness of the MLS.
- 52 The assessment for the different measures under each proposed option follows.

### Option 1 – Status Quo

- 53 Under this option the existing management approach remains unchanged.

## *Impact*

- 54 Fishing pressure has increased despite the reduction to the daily bag limit in 2003 and poorer catch returns of blue cod. Retaining the *status quo* would not reduce total recreational harvest levels for blue cod. Recreational fishing pressure continues to remain high and so prevent a rebuilding of blue cod populations in depleted areas of the Marlborough Sounds. In addition, fishing within the outer areas will continue to remain high.
- 55 The relative abundance data in 2007 shows that east D'Urville Island has declined by 70% for pre-recruited and 43% for recruited fish. There is concern that the existing bag limits continues to lead to a decline in the outer Marlborough Sounds, and may lead to an unfolding of a serial depletion of populations. This is exacerbated by the current ability of recreational fishers to accumulate bag limits on multi-day trips, high-grading of large fish, and large numbers of fish being caught from recreational fishing boats and charter vessels.
- 56 The potential for non-compliance within the recreational fishery will increase if the blue cod fishery continues to decline. Declining fish numbers leads to ever decreasing catch rates and fishers are tempted to retain fish smaller than the MLS.

## *Benefits*

- 57 There are no real benefits of maintaining the *status quo*. Although this would avoid the costs of measures to the community and fiscal costs for changing regulations, raising community awareness, and compliance. These benefits would be outweighed by the impacts of the depleted blue cod fishery to the fishers and wider community of the Marlborough Sounds.

## *Costs*

- 58 The continued depletion of blue cod populations in the Marlborough Sounds has unmeasured implications for the local economy and tourism. Blue cod is the primary recreational fishery within the Marlborough Sounds, and depleted populations affect both the immediate recreational fishing sector and the wider community.
- 59 The decline in the Marlborough Sounds blue cod fishery is likely to have economic implications for the local charter industry. There are a considerable number of charter boats operating in Queen Charlotte Sound and Pelorus Sound that take tourists and resident fishers into the Marlborough Sounds to catch fish. Given the importance of the blue cod to the local recreational fishery, many charter boats specifically target this species, particularly in the outer areas. A decline in blue cod populations may dissuade some recreational fishers from using this service, although fishers will still be able to catch a range of other 'recreationally valued' fish species including snapper, kahawai and groper. The failure to ensure a sustainable and continued blue cod fishery could reduce the economic viability of some charter boat operations in the medium and long-term.



## Option 2 - input & spatial controls

- 60 Under this option, MFish reduce the amateur daily bag limit of three blue cod per person to two blue cod per person, and introduce a daily limit of six blue cod per boat. Amateur fishers are restricted to possessing a single daily bag limit on multi-day trips and high-grading of legal sized blue cod will be prohibited. In addition, MFish will require amateur fishers to land whole or gutted fish only.
- 61 The spatial controls proposed in this option prohibit all hook and line fishing (for all species) in the inner and middle areas of Queen Charlotte Sound and/or inner and middle areas of Pelorus Sound. In addition, the option proposes to prohibit all commercial targeting of blue cod inside waters between French Pass-Clay Point-Chetwode Island-Cape Jackson-Cape Koamaru.

### *Impacts*

#### Input controls

- 62 The proposed daily bag limit of two blue cod per person represents a 33% reduction in the number of blue cod for any individual recreational fisher.
- 63 Currently, recreational fishers are entitled to accumulate any number of bag limits during a multi-day fishing trip. The proposed restriction to possess a single daily bag limit reduces the number of blue cod taken by overall by recreational fishers who fish multi-day trips. This measure will have greatest impact on fishers targeting blue cod in the outer areas where trips longer than one day are more common, as well as visiting vessels from adjacent areas such as the Wellington region.
- 64 A boat limit of six blue cod per day has the greatest impact on the recreational charter sector, particularly chartered vessels that principally target blue cod.
- 65 Information on recreational charter fishing effort in the Marlborough Sounds is limited. Anecdotal information suggests the number of charter (and larger) vessels have increased in the Marlborough Sounds over the last decade. There is no information to determine if charter-fishing effort has increased at a slower rate, the same rate, or a faster rate than recreational effort generally. Nor is it possible to determine the proportion of total recreational catch of blue cod in the Marlborough Sounds taken by recreational fishers on charter vessels.
- 66 Boat limits are a tool that provides for some targeting of catch constraints to specific groups of fishers. Introducing a boat limit is a realistic management option, if the best available anecdotal information indicates targeted catch constraints are warranted. Some reports from recreational fishers suggest fishers on charter vessels (and large private recreational vessels) may take more fish because these vessels:
- a) tend to carry large groups of fishers,
  - b) can fish the outer Marlborough Sounds

- c) have larger holds to transport catch,
  - d) go out more regularly,
  - e) have experienced skippers that know where the fish can be found, and
  - f) are able to fish in rougher weather.
- 67 A boat limit applies to all vessels, not just charter vessels. At this time, MFish is not aware of any reason why charter vessels carrying multiple fishers should be treated differently to private vessels carrying multiple fishers. The proposed boat limit would affect recreational fishers on vessels carrying three or more passengers if the maximum daily bag limit is lowered to two, and on vessels carrying two or more passengers if the maximum daily bag limit remains at three.
- 68 The requirement for amateur fishers to retain all blue cod at or above the MLS, and then to cease targeting blue cod reduces the average size of blue cod retained by fishers.

### Spatial controls

- 69 The suggested areas for temporary closures focus on the worst depleted areas recorded in the 2007 survey. A review of the proposed closures would take place in 2011 when the next survey results are available.
- 70 There is uncertainty over how long a temporary area closure would be required. Long Island and Tonga Island Marine Reserves have both shown signs of recovery within 3 to 4 years of fishing cessation. The geography and low base of juvenile and adult fish within the worst depleted areas of the Marlborough Sounds may require a longer period for populations to recover.
- 71 This measure restricts access to large areas of both Queen Charlotte Sound and Pelorus Sound to all amateur hook and line fishers. Many fishers may find it difficult to fish, in particular shore-based fishers and those fishers with smaller boats, who will be required to travel further afield to alternative areas that are open. The balance for such a measure is to consider the impact this would have on fishers for other species and the wider community, and whether the remaining open areas would be sufficient for continued recreational fishing for blue cod and other species in Marlborough Sounds.
- 72 Closing off large areas of inner and middle Marlborough Sounds fishery will lead to a displacement of fishing effort to areas remaining open. This will already have occurred to a lesser extent as many fishers seek more productive areas for catching blue cod. The proposed amateur daily bag limit of two per person helps to alleviate this problem.
- 73 There are no additional impacts associated with the proposed changes to the strengthening of the existing voluntary code, which restricts commercial harvesting inside the areas between French Pass-Clay Point-Chetwode Island-Cape Jackson-Cape Koamaru. This area is already subject to a voluntary

closure by commercial potting fishers, and as such, there is no change to commercial fishing practices.

## *Benefits*

### *Input controls*

- 74 These measures have greater certainty of achieving the desired outcome of reducing both the recreational harvest and incidental mortality of blue cod when considered together.
- 75 Decreasing the amateur daily bag limit to two blue cod per person and imposing a limit of six blue cod per boat gives greater certainty to safeguarding blue cod populations in the open areas from the transfer of effort. This measure effectively lowers the catch level of recruited fish and reduces the incidental mortality by reducing the number of undersize fish caught prior to attaining the bag limit. This represents a 33% reduction in extraction, and lowers the incentive for fishers to fish for blue cod in the outer Marlborough Sounds. Restricting recreational boats to a maximum limit of six blue cod per day may help to lessen the relatively high impact that larger vessels may have in local areas, and help to spread effort to other species. The proportion of the total recreational catch the proposed boat limit would decrease is unknown. These measures are the strongest proposed to prevent local depletion of blue cod in the outer areas.
- 76 The proposed measure to restrict fishers to possess a maximum of a single daily bag limit prevents fishers from accumulating bag limits for blue cod on multi-day trips. This measure compliments the proposed bag limit by preventing fishers from accumulating catches. The measure improves compliance for fishers who claim to have arrived by boat from outside the Marlborough Sounds area where the bag limit is higher. It will also further reduce the extraction of blue cod.
- 77 The proposed regulation requiring recreational fishers to land whole (including gutted) blue cod compliments the proposed daily bag limit and existing MLS measures. Currently, it is possible for fishers to fillet blue cod onboard vessels. This makes it difficult for fisheries compliance to determine whether a fisher's daily bag limit or the size of landed blue cod are compliant.
- 78 The regulation requiring all fishers to take all legal sized fish caught up to their bag limit prevents high-grading by fishers. This measure compliments the proposed daily bag limit and ensures the existing MLS is effective to reduce both the number of blue cod caught prior to attaining a bag limit and the incidental fishing mortality.
- 79 The proposed amateur daily bag limit for blue cod does not restrict fishers from taking other high value target species such as snapper and tarakihi. When fishing pressure is greatest during the summer months, many other species are more abundant such as snapper, kahawai and kingfish.

### Spatial controls

- 80 There have been three previous initiatives since 1993 to reduce the recreational harvest of blue cod in the Marlborough Sounds. These measures are not achieving the desired effect of rebuilding localised blue cod populations. The proposed temporary area closures for all hook and line fishing afford depleted areas the highest likelihood for blue cod populations to rebuild in the shortest time. Closing an area prevents harvesting and incidental mortality of blue cod. Information from marine reserve studies suggests that blue cod can recover fully within 6 years once fishing pressure has ceased<sup>6</sup>.
- 81 Temporarily closing off areas to all recreational hook and line fishing optimises the effectiveness of compliance and enforcement. A recreational blue cod fishing only closure is not realistic as detection of non-compliant fishers would be difficult.
- 82 Prohibiting the commercial targeting of blue cod inside the areas between French Pass-Clay Point-Chetwode Island-Cape Jackson-Cape Koamaru, strengthens the existing voluntary agreement. This measure ensures that the future recovery of blue cod populations achieved through the proposed measures to the recreational sector is afforded greater protection than the existing voluntary code. This measure will give greater confidence to the recreational sector and assist with overall buy-in by the community.

### *Costs*

#### Input controls

- 83 Fisheries management objectives are dependent upon high levels of compliance with the sustainability and allocation rules. MFish's compliance strategic goals are to maximise voluntary compliance and maintain an effective deterrent.
- 84 Recreational fishers are expected to be aware of the fishing regulations. MFish compliance activities include informing recreational users and providing information material on relevant rules. Operational compliance activities include initiatives to raise awareness of the rules, as well as enforcement activities including patrols, inspections, infringement notices and prosecution of more serious offences.
- 85 To maximise voluntary compliance MFish will need to conduct an ongoing education campaign to provide information and advice to promote high levels of understanding and acceptance of the regulatory changes. Signage and pamphlets specific for the Marlborough Sounds Area, along with public advertisements and media releases will be commence following a final decision.

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<sup>6</sup> Data for the relative biomass of blue cod from Long Island Marine Reserve has shown the previously fished areas recovered quickly and reached naturally varying levels in a 6 year period.

- 86 To create an effective deterrent in the fishery will require a number of tools including enforcement and legislative deterrents, land and at-sea monitoring, and inspections by Fishery Officers.
- 87 Legislation deterrents come through a structured penalty regime for offences with ramped infringement fines for breaches of daily bag limits (\$250 fine applicable for taking/possession up to less than twice the daily bag limit and a \$500 fine for taking/possession over twice the daily bag limit). Court proceedings with a maximum penalty of \$20,000 with resultant forfeiture upon conviction of any property used in the commission of the offence apply for a breach where more than three times the daily bag limit is taken.
- 88 Maintaining an effective presence of Fishery Officers within the Marlborough Sounds Area will be important for providing an effective deterrent for offences, as well as meeting the community expectations of the enforcement of rules and response to reports of possible breaches. This will be particularly challenging given the large geographic area policed, the relative unfettered access and the large recreational fishing community who use the Marlborough Sounds resource. Some fisheries offences such as high-grading are also difficult to detect. MFish has not yet determined the cost of compliance for the proposed regulatory changes.

### Spatial controls

- 89 Blue cod is an iconic species for the Marlborough Sounds with many visitors coming to the area to partake in recreational fishing for the species. Closing large areas to fishing has the potential to reduce visitor numbers to the Marlborough Sounds with associated effects to local economy in the short term.
- 90 The measure incurs a cost to charter operators who may find it necessary to cancel shorter trips in favour of longer trips to access areas open to hook and line fishing. Charter boats that normally fish in the proposed closed areas would need to modify their route and operation. This has implications for the viability of their business.
- 91 The proposals to close areas within Queen Charlotte Sound and/or Pelorus Sound incurs increased costs in fuel and time to amateur and charter recreational fishers who continue to fish beyond the closed areas.
- 92 There is an increase in communication costs associated with the proposed changes. These include an enduring education campaign to provide information and advice to promote high levels of understanding and acceptance of the regulatory changes. Once final decisions are made this would include signage and pamphlets specific for the Marlborough Sounds Area, along with public advertisements and media releases.

### ***Option 3 - Additional measures proposed by SoundFish***

- 93 Under this option all measures proposed in Option 2 would apply. In addition, boat fishers would be restricted to the:

- a) use of size 6/0 hook or larger
  - b) one hook per line
  - c) set lining would require the use of 10/0 hooks or larger.
- 94 *SoundFish* also proposes a new boundary for the Marlborough Sounds Area. The proposed boundary would extend from Cape Soucis in the west to Whites Bay in the east and out to two nautical miles from shore (Figure 4).

### *Impact*

- 95 Since 2003, MFish<sup>7</sup> and *SoundFish* have promoted the use of large (size 6/0 or larger gape) hooks, as well as other best fishing practices for recreational fishers targeting blue cod. These measures are voluntary and adherence to such guidelines are considered to be low within the Marlborough Sounds. This is compounded by the high number of summer visitors fishing the area.
- 96 Size 6/0 hooks still catch undersize cod of 20 cm and larger, but have a far lower mortality rate compared to smaller hooks. This is because of the larger gape size that prevents incidents of deep hooking in the throat, gills and stomach of both undersize fish and recruited fish. Using only one hook per fisher greatly reduces the possibility of foul hooking, and decreases instances of physical damage to fish from poor handling of fish when landing and unhooking the catch.
- 97 The hook measures proposed by *SoundFish* would require all hook and line fishers from boats or vessels in the Marlborough Sounds to use a minimum size 6/0 hook and one hook per fisher. Size 10/0 or larger hooks would be required for set lining. This measure would not change methods for fishers from the shore, jetty or wharf in the Marlborough Sounds when permitted.
- 98 MFish considers the proposed hook regulations challenging for fisheries compliance, since it requires inspecting boat fishers' hooks and tackle. In addition, the large number and widespread distribution of fishing vessels within the Marlborough Sounds will draw on fisheries compliance resources.
- 99 The proposed change to the existing boundary is based on the existing Marlborough Sounds MDC coastal boundary. The proposed boundary extends from Cape Soucis in the west to Whites Bay in the east and out to two nautical miles from shore (Figure 4).
- 100 The boundary is larger than the existing area, extends further seaward into Cook Strait some two nautical miles from all landmarks, and encompasses the additional areas of Crosilles Harbour to west D'Urville, and Port Underwood, Robin Hood Bay, Whites Bay and the southern limit at the Wairau Bar.
- 101 None of the additional areas within the larger boundary other than west D'Urville are currently included in the blue cod relative biomass surveys. It is not possible to comment whether there is a decline of blue cod requiring inclusion of these areas within the proposed regulatory changes. The 2004 and

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<sup>7</sup> Guidelines for blue cod fishing in the Challenger Fishery Management Area (East)

2007 survey data for west D'Urville Island suggest that the local blue cod population is viable. Nevertheless, these outer lying areas are equally vulnerable to displacement in effort from fishers seeking locations that are more productive.

### *Benefits*

- 102 The proposed hook regulations would have the following benefits for the fishery:
- A marked reduction of hook and line release mortality for blue cod (mortality from predation of released fish will still occur).
  - Allow continuation of fishing from the shore, wharf or jetty using smaller hooks. This will allow fishing for baitfish from the shore and use of multi-hook jigs and small spinners. These fishing methods are an important component of recreational fishing and are also the methods by which youths learn to fish.
  - Allows setlining within the Marlborough Sounds to continue whilst minimising any impacts to blue cod.
- 103 These benefits extend across the whole of Marlborough Sounds without reducing access or effort to blue cod or other fisheries.
- 104 The proposed boundary reflects the existing MDC coastal boundary. This will assist with fishery management initiatives in the future, and supports ecosystem management approaches that will require integrated management with the Resource Management Act.

### *Costs*

- 105 The proposed hook regulations would impose a small cost on recreational boat fishers to ensure that their fishing tackle was compliant. In addition, tackle retailers may incur a cost through reductions in sales of smaller hooks and multi-hook rigs.
- 106 Fisheries compliance would incur an increase in costs. This will be due to requirements to define the legal requirements for the hook sizes, develop a hook gauge and communicate changes to fishers through notices, and pamphlets.

### *Risk assessment of proposed options*

- 107 A summary of potential risks for the proposed options and appropriate mitigation measures is listed in Table 5.

**Table 1. Identification of risks and mitigating measures for Option 2, and 3.**

Risk	Mitigating measure(s)
<p>Closed areas increase migration and concentration of fishing pressure in open areas causing depletion impacts to these areas.</p>	<p>Ensure temporary closures are only closed for as long as necessary.</p> <p>Implement complimentary measures such as reduction of the daily bag limit and no accumulation of bag limits for multi-day trips to reduce extraction.</p> <p>Implement complimentary measures to reduce mortality of juveniles such as no high grading.</p>
<p>Fishers' compliance with new measures is low</p>	<p>Basing measures on feedback from consultation should improve the community buy-in and improve compliance rates.</p> <p>Implementing a communication plan will improve understanding of changes to regulations, improve awareness of issues facing the fishery, and identify differences in daily bag limit and minimum legal size between areas. Inform key stakeholders such as fishers, tackle retailers and the tourist sector.</p> <p>Update notice boards, website and pamphlets with changes to regulations.</p> <p>Provide clear guidance for the definition of the minimum gape size for size 6/0 and 10/0 hook measures. Liaise with fishing retailers, industry and fishing associations to ensure measure is widely understood and hooks available in Marlborough Sounds Area.</p>
<p>Review of survey data for ending or continuing closure leads to disagreement between stakeholders for which action is appropriate</p>	<p>Set clear objectives for recovery based upon science advice and community wishes.</p> <p>Ensure review of data is part of a transparent process including a consultation process.</p>
<p>Blue cod populations rebuild but are quickly re-depleted in a 'gold rush' soon after fishery is re-opened.</p>	<p>The proposed changes to bag limits and other measures will lower existing extraction of blue cod and incidental mortality. Part of the process to reopen fishery should review the success of proposed measures, and consider the whether they are sufficient to ensure sustainable harvest levels.</p>
<p>Blue cod populations do not rebuild in the inner areas by 2011.</p>	<p>Review survey data in 2011 and consider longer closure period.</p> <p>It may be necessary to decrease the periodicity of the relative biomass survey from four years and increase review period.</p>
<p>Serial depletion extends to other areas of the Marlborough Sounds</p>	<p>Review available data from fishing sectors and consider appropriate actions with <i>SoundFish</i> and through Challenger Fin Fish Plan.</p>



## Other Management Controls to be considered

### *Voluntary measures - Best fishing practices*

- 108 Existing guidance for fishers to adopt best fishing practices has a role in minimising the incidental mortality of blue cod, assist rebuilding of populations, and improve the sustainability of the recreational fishery. These voluntary measures have been promoted by MFish and *SoundFish* through pamphlets and notices at fishing locations and boat ramps to reduce the incidental mortality of blue cod. The best fishing practices includes guidance on a range of issues that include using only one hook per line, keeping tension in fishing lines, use of size 6/0 or larger and wide gap hooks, use of barbless hooks, fish handling and release methods. However, fisheries compliance report that adherence to this guidance is low particularly among visiting fishers. The low adherence to voluntary guidance has given rise to some of the proposed measures described in this paper. MFish support increased application of best fishing practices and a system to monitor the adoption of these methods by fishers.

## Statutory Considerations

- 109 Central to the proposed options are the legal requirements of the Fisheries Act 1996.

### *Purpose- Section 8*

- 110 Section 8 of the Act describes the purpose of the Act as being “*to provide for the utilisation of fisheries resources while ensuring sustainability*”; this is the core obligation to heed when considering the management options.

### *Environmental Principles-Section 9*

- 111 Section 9(a) requires that: “associated or dependant species should be maintained above a level that ensures their long-term viability” Associated or dependent species are defined by the Fisheries Act 1996 as any non-harvest species taken or otherwise affected by the taking of any harvested species. The main methods of harvesting blue cod by recreational fishers are rod fishing, handlining, and longlining. These fishing methods are likely to catch a range of other finfish species and sometimes benthic material when targeting blue cod. The effects of recreational fishing for blue cod on non-target species have not been quantified, but are likely to be minor.
- 112 There is little targeting of blue cod by trawling. In addition, trawling is prohibited in most areas of the Marlborough Sounds, particular those areas identified as ecologically significant. The effects of trawling in the outer Marlborough Sounds are mitigated through gear restrictions. The main method to target blue cod is cod-potting. This method has a relatively benign impact on the marine environment and is restricted to the outer Marlborough Sounds and Cook Strait. Catches of non-target species by cod-potting are minor and are generally restricted to octopus and conger eel.

### *Maintaining Biodiversity*

- 113 Section 9(b) requires that “biological diversity of the aquatic life should be maintained.” Maintaining current fishing pressure within the depleted areas of the Marlborough Sounds threatens the viability of local blue cod populations. There is one marine reserves within the Marlborough Sounds fishery; Long Island-Kokomohua, which incorporates known blue cod habitat. This area acts to protect biodiversity for the purposes of scientific study. Studies of blue cod in the Long Island-Kokomohua marine reserve suggest that closing off areas to fishing can increase biomass within that area, thereby increasing the resident population size. As scientific studies progress within this marine reserve, there is potential for the applicability of rotational fishing of blue cod populations to be modelled.

### *Habitats of Significance*

- 114 Section 9(c) requires that “a habitat of particular significance for fisheries management should be protected”. The Marlborough Sounds coastal plan identifies a number of areas of ecological significance. These areas lie within areas protected from active fishing methods. MFish has an obligation to avoid authorising undue adverse effects from marine farming on habitats of significance for fisheries management, and this includes important blue cod habitats. [Are the matters being referred to here “habitats of particular significance for fisheries management?”]

### *Information Principles-Section 10*

- 115 Section 10 requires that “decisions should be based on best available information; decision makers should consider any uncertainty in the information available” and “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 this Act.”
- 116 MFish has based the assessment of the Marlborough Sounds blue cod fishery on the review of data from the relative abundance surveys conducted by NIWA. This data is the “best *available information*” used to base assessment of the status of blue cod abundance. This information is reliable and subject to peer review. Observations by MFish compliance staff and many recreational fishers support the findings of the surveys.
- 117 When considering the principle causes of the decline the relative biomass surveys, recreational fishing surveys, commercial catch returns and anecdotal returns from fishers and MFish staff all indicate that recreational fishing pressure is the single biggest and immediate impact affecting the fishery.

### *Consultation-Section 12*

- 118 When considering the setting of sustainability measures (s 11) there is an obligation under section 12 to undertake consultation. The Act sets out the obligation to “*consult with such persons or organisations as the Minister considers are representative of those classes of persons having an interest in the stock or the effects of fishing on the aquatic environment in the area*”

*concerned, including Maori, environmental, commercial and recreational interests.”*

- 119 MFish discussed the issues outlined in this IPP with *SoundFish*. This multi-stakeholder group included representatives from all fishing sectors in the Marlborough Sounds including Maori, commercial and recreational. This pre-consultation has helped to shape the options presented here.
- 120 The proposals set out in this IPP have the greatest affect on recreational fishers and very small changes to existing agreements with commercial fishers. Measures within this document do not propose to alter or affect customary fishing rights.

### *Relevant Plans and Strategies-section 11*

- 121 The Fisheries Act 1996 requires consideration of the implications of any proposed sustainability measure on the management strategy for the coastal area in general. Before setting or varying any sustainability measure, the Minister must, under section 11(2) have regard to:
- any regional policy statement, regional plan or proposed regional plan under the Resource Management Act 1991 and
  - any management strategy or plan under the Conservation Act 1987 that applies to the coastal marine area.
- 122 The BCO 7 fisheries management area falls within the jurisdiction of MDC. MDC are responsible for preparing regional policy statements and proposed resource management plans that relate to the coastal area. Additionally, the Department of Conservation has a conservation management strategy that applies across the fishery. MFish is not aware of any relevant provisions in these plans or statements that are contravened by current blue cod fishing practices. MFish will consult with MDC and the Department of Consultation over the proposals set out in this IPP.

### **Other Management Issues**

- 123 This IPP proposes short-term and immediate management measures in response to the recently available information from the 2007 relative abundance survey for blue cod.
- 124 MFish with *SoundFish* will continue to promote best fishing practices to recreational fishers within the Marlborough Sounds. MFish will consider the needs for future research to establish the most appropriate hook types and releasing methods for optimising the survival of released blue cod and improving the sustainability of recreational fishing practices.
- 125 Should temporary closure of areas of the fishery be implemented, it is proposed that the CIFF would assume responsibility for setting the success criteria to determine when temporary closures should finish. Prior to reopening a closed fishery it will also be necessary for the CIFF to consider the necessity for any further regulation to ensure long-term sustainability is maintained. The

CIFF will work closely with community groups such as *SoundFish* to continue this longer-term management work.

- 126 MFish will review the requirement for more frequent surveys of blue cod and extending the survey strata to include areas such as Port Underwood. From 2007, these surveys are on a four-year cycle in keeping with surveys in other management areas. The next blue cod survey is scheduled for 2011.
- 127 MFish will work closely with Talleys Fisheries Ltd and Challenger Finfish Management Company to strengthen the existing catch-spread regime with a process for the bi-annual review of catch returns data. This agreement will ensure that the commercial targeting of blue cod does not increase within the Marlborough Sounds but spread across the wider areas of the Challenger fisheries management area.

## Appendices

### *Further Statutory Considerations*

- g) **Section 5(a) and (b) – Application of international obligations and Treaty of Waitangi (Fisheries Claims) Settlement Act 1992:** [There is a wide range of international obligations relating to fishing (including sustainability and utilisation of fishstocks and maintaining biodiversity). MFish considers issues arising under international obligations and the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 are adequately addressed in the management options. Note specific issues may arise that will need to be referred to (such as taonga species) as the Settlement Act does impose ongoing Treaty obligations on Crown and to develop policies to help recognise customary use and management practices.]
- h) **Section 10 – Information principles:** [State the information sources relied upon – plenary report, recreational diary survey etc. Refer to the adequacy, reliability and certainty of the information contained. Describe what weighting (ie degree of caution) should be placed on the information.[Anything further on section 10 should be included above in body of the Paper].
- i) **Section 297 –General Regulations-**Section 297(1)(a) of the Fisheries Act 1996 allows the making of regulations
  - ii) regulating, authorising or prohibiting the taking or possession of fish, aquatic life, or seaweed from any area;
  - iii) regulating or prohibiting the taking or possession of fish, aquatic life, or seaweed at any time, or for any period;
  - vi) regulating or prohibiting the return of fish aquatic life, or seaweed to any waters;
  - viii) regulating or prohibiting the possession or use of any kind of gear, equipment, or device used for, or related to fishing;
  - x) regulating the number or weight of any fish, aquatic life, or seaweed that may be taken or possessed, whether by reference to any period or on any other basis whatever; and prohibiting the taking or possession of any number or weight of fish, aquatic life, or seaweed that exceeds the specified maximum number or weight;
  - xii) regulating the methods by, or the circumstances under which, fish, aquatic life, or seaweed may be held, stored, conveyed, or identified, including the use of any containers marks, or labels;

# REGULATORY IMPACT STATEMENT

## Review of Regulatory Measures and Other Management Controls for blue cod in the Marlborough Sounds

### Executive summary

Recent information on blue cod from the 2007 biomass survey shows a continued decline of blue cod abundance throughout the Marlborough Sounds. All areas recorded the lowest numbers of juveniles from a time-series of surveys since 1995 - with the inner Queen Charlotte Sound reporting no blue cod (both adults and juveniles). Only the outer areas of the Marlborough Sounds recorded a reasonable number of adult blue cod, although populations in the east D'Urville Island area also recorded a marked decline. This serial depletion is consistent with a high level of recreational fishing pressure targeting the species in the Marlborough Sounds. This is the overriding and immediate factor impacting on localised blue cod populations. MFish proposes a suite of new measures for the recreational blue cod fishery to reduce both harvest levels and incidental fishing mortality to allow populations to rebuild. The proposed measures include the following:

- Temporary closure of parts of the Queen Charlotte Sound and/or Pelorus Sound to all finfishing with hook and line.
- The daily bag limit is reduced from 3 to 2 blue cod per person and a limit of 6 blue cod per boat is introduced.
- Possession of only one day's bag limit on multi day trips.
- Landing of whole or gutted blue cod.
- No high grading of legal sized ( $\geq 30\text{cm}$ ) blue cod
- Strengthen the existing voluntary commercial agreement to prevent commercial fishers from targeting blue cod within large areas of the Queen Charlotte Sound and Pelorus Sound.

The paper also considers proposals by the multi-sector group *SoundFish* to require boat fishers to use one hook only and large hooks (6/0 or greater) and amend the Marlborough Sounds Area boundary.

### Adequacy statement

This Regulatory Impact Statement has been reviewed by the Ministry of Fisheries' Regulatory Impact Analysis Review Committee and is considered adequate according to the criteria agreed by Cabinet.

### Status quo and Problem

The continued decline of blue cod abundance in the Marlborough Sounds in spite of previous measures indicates that current recreational fishing pressure is still too high to allow a rebuild of localised populations. Concentrated recreational fishing effort predominantly from boats has resulted in too many recruited fish being caught from the inner and middle areas of Queen Charlotte Sound and Pelorus Sound. It is also most likely that the accumulated mortality of returned fish from the recreational fishery has contributed to the decline of pre-recruited and juvenile blue cod across

most areas of the Marlborough Sounds. Retaining the status quo would not reduce recreational harvest levels for blue cod. Recreational fishing pressure is likely to continue to remain high and so prevent a rebuilding of blue cod populations in depleted areas of the Marlborough Sounds. In addition, fishing within the outer areas will still continue to remain high.

There is concern that the existing bag limits will continue to lead to a decline in the outer Marlborough Sounds, and may lead to an unfolding of a serial depletion of populations. This is exacerbated by the current ability of recreational fishers to accumulate bag limits on multi day trips, high-grading of large fish and large numbers of fish being caught from recreational fishing boats and charter vessels.

The potential for non-compliance within the recreational fishery may increase if the blue cod fishery continues to decline. Declining fish numbers will lead to ever decreasing catch rates and fishers may be tempted to retain fish smaller than the minimum legal size.

The continued depletion of blue cod populations in the Marlborough Sounds will have unmeasured implications for the local economy and tourism. Blue cod is the primary recreational fishery within the Marlborough Sounds, and depleted populations will affect the both the immediate recreational fishing sector and wider community.

The decline in the Marlborough Sounds fishery is likely to have economic implications for the local charter industry. There are a considerable number of charter boats operating in Queen Charlotte and Pelorus Sounds that take tourists and resident fishers into the Marlborough Sounds to catch fish. Given the importance of the blue cod to the local recreational fishery, many charter boats specifically target this species, particularly in the outer areas. A decline in blue cod populations may dissuade some recreational fishers from using this service, although fishers will still be able to catch a range of other 'recreationally valued' fish species including snapper, kahawai and groper. Although charter vessels have no property rights, the failure to ensure a sustainable and continued blue cod fishery could reduce the economic viability of some charter boat operations in the medium and long-term.

MFish contends that additional management measures are necessary to give greater certainty for localised blue cod populations to rebuild in depleted areas and safeguard the currently productive outer areas from high fishing pressure.

## **Objectives**

Lower exploitation rates in depleted areas to a level that will enable the rebuild of localised populations.

Ensure the fishery in the outer areas is sustainably fished and are not serially depleted through displacement of fishing effort from the inner and mid areas.

Ensure the proposed measures are practicable both for fishers and fisheries compliance.

Ensure the proposed fisheries measures have sufficient community buy-in to be

effective.

### **Alternative options**

When deciding on management options it is important to consider that previous initiatives since 1993 have not been successful to reduce recreational harvest levels of blue cod through amateur daily bag limit reductions and minimum legal size adjustments. Blue cod continues to be the most popular target finfish species for recreational fishers in the Marlborough Sounds and fishing pressure remains high. The current daily bag limit of three blue cod per person leaves little scope for further catch reduction without the need for temporary area closures.

Due to the limited scope of available options the IPP proposes a range of complimentary recreational fishery input controls. As an alternative option these measures can be considered individually or in combination with others. The measures will be most effective if implemented as a whole.

In addition, spatial control options are proposed for temporary closures of part of the Queen Charlotte Sound and/or part of Pelorus Sound.

### **Proposed option**

These measures have greater certainty of achieving the desired outcome of reducing both the recreational harvest and incidental mortality when considered together. As individual measures the benefits are reduced.

Decreasing the amateur daily bag limit to two blue cod per person and imposing a limit of six blue cod per boat will give greater certainty to safeguarding blue cod populations in the open areas from the transfer of effort. This measure will effectively reduce the catch level of recruited fish and reduce the incidental mortality by reducing the number of undersize fish caught prior to attaining the bag limit. This represents a 33% reduction in extraction, and lowers the incentive for fishers to fish for blue cod in the outer Marlborough Sounds.

Currently, recreational fishers are entitled to accumulate any number of bag limits during a multi-day fishing trip. The proposed restriction to possess a single daily bag limit reduces the number of blue cod taken by overall by recreational fishers who fish multi-day trips. This measure will have greatest impact on fishers targeting blue cod in the outer areas where trips longer than one day are more common, as well as visiting vessels from adjacent areas such as the Wellington region. The measure will simplify compliance for fishers who claim to have arrived by boat from outside the Marlborough Sounds area where the bag limit is higher. It will also further reduce the extraction of blue cod.

Restricting recreational boats to a maximum limit of six blue cod per day helps to lessen the relatively high impact that larger vessels can have, and help to spread effort to other species. These measures are the strongest proposed to prevent local depletion of blue cod in the outer areas. A boat limit of six blue cod per day has the greatest impact on the recreational charter sector, particularly chartered vessels that principally target blue cod. To some extent these fishers will already have had their catches



limited through the localised depletion of blue cod.

The proposed amateur daily bag limit and boat limit for blue cod will not restrict fishers from taking other high value target species such as snapper and tarakihi. When fishing pressure is greatest during the summer months many other species are more abundant such as snapper, kahawai and kingfish.

There is currently no available information to determine the cost of this proposed measure to the recreational charter fleet and associated industries.

The requirement for amateur fishers to retain all blue cod at or above the MLS, and then to cease targeting blue cod reduces the average size of blue cod retained by fishers. This measure compliments the proposed daily bag limit and ensures the existing MLS is effective to reduce both the number of blue cod caught prior to attaining a bag limit and the incidental fishing mortality.

The proposed regulation to require recreational fishers to land whole (including gutted) blue cod will compliment the proposed daily bag limit and existing MLS measures. Currently, it is possible for fishers to fillet blue cod onboard vessels. This makes it difficult for fisheries compliance to determine whether a fisher's daily bag limit or the size of landed blue cod are compliant.

The regulation to require all fishers to take all legal sized fish caught up to their bag limit will prevent high-grading by fishers. This measure will compliment the proposed daily bag limit and ensure the existing MLS is effective to reduce both the number of blue cod caught prior to attaining a bag limit and the incidental fishing mortality. There is an associated increase in costs for compliance to ensure this measure is effective.

There have been three previous initiatives since 1993 to reduce the recreational harvest of blue cod in the Marlborough Sounds. These measures are not achieving the desired effect of rebuilding localised blue cod populations. The proposed temporary area closures for all hook and line fishing afford depleted areas the highest likelihood for blue cod populations to rebuild and in the shortest time. Closing an area will prevent harvesting and incidental mortality of blue cod. Information from marine reserve studies suggests that blue cod can recover relatively quickly once fishing pressure has ceased<sup>8</sup>.

The proposed temporary closures include all recreational hook and line fishing. This is necessary to optimise compliance and enforcement of closed areas. A recreational blue cod fishing only closure is not realistic as detection of non-compliant fishers would be impractical.

The suggested areas for temporary closures focus on the worst depleted areas recorded in the 2007 survey. A review of the proposed closures would take place in 2011 when the next survey results are available.

There is uncertainty over how long a temporary area closure would be required. Long

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<sup>8</sup> Data for the relative biomass of blue cod from Long Island Marine Reserve has shown the previously fished areas recovered quickly and reached naturally varying levels in a 6 year period.

Island and Tonga Island Marine Reserves have both shown signs of recovery within 3 to 4 years of fishing cessation. The geography and low base of juvenile and adult fish within the worst depleted areas of the Marlborough Sounds may require a longer period for populations to recover.

This measure will restrict access to large areas of both Queen Charlotte Sound and Pelorus Sound to all amateur hook and line fishers. Many fishers will find it difficult to fish, in particular shore-based fishers and those fishers with smaller boats, who will be required to travel further afield to alternative areas that are open. The balance for such a measure is to consider the impact this would have on fishers for other species and the wider community, and whether the remaining open areas would be sufficient for continued recreational fishing for blue cod and other species in Marlborough Sounds.

Closing off large areas of inner and middle Marlborough Sounds fishery will lead to a displacement of fishing effort to areas remaining open. This will already have occurred to a lesser extent as many fishers seek more productive areas for catching blue cod. The proposed amateur daily bag limit of two per person will help to alleviate this problem.

Blue cod is an iconic species for the Marlborough Sounds with many visitors coming to the area to partake in recreational fishing for the species. Closing large areas to fishing has the potential to reduce visitor numbers to the Marlborough Sounds with associated effects to local economy in the short term.

The measure incurs a cost to charter operators who may find it necessary to cancel shorter trips in favour of longer trips to access areas open to hook and line fishing. Charter boats that normally fish in the proposed closed areas would need to modify their route and operation. This has implications for the viability of their business.

The proposals to close areas within Queen Charlotte Sound and/or Pelorus Sound incurs increased costs in fuel and time to amateur and charter recreational fishers who continue to fish beyond the closed areas.

There is an increase in communication costs associated with the proposed changes. These include an enduring education campaign to provide information and advice to promote high levels of understanding and acceptance of the regulatory changes. Once final decisions are made this would include signage and pamphlets specific for the Marlborough Sounds Area, along with public advertisements and media releases.

Prohibiting the commercial targeting of blue cod inside the areas between French Pass-Clay Point-Chetwode Island-Cape Jackson-Cape Koamaru, strengthens the existing voluntary agreement without effecting the commercial harvest of blue cod. This measure will ensure that the future recovery of blue cod populations achieved through the proposed measures to the recreational sector is afforded greater protection than the existing voluntary code. This measure will give greater confidence to the recreational sector and assist with overall buy-in by the community.

Since 2003, MFish<sup>9</sup> and *SoundFish* have promoted the use of large (size 6/0 or larger gape) hooks, as well as other best fishing practices for recreational fishers targeting blue cod. These measures are voluntary and adherence to such guidelines are considered to be low within the Marlborough Sounds. This is compounded by the high number of summer visitors fishing the area.

Size 6/0 hooks still catch undersize cod of 20 cm and larger, but have a far lower mortality rate compared to smaller hooks. This is because of the larger gape size that prevents incidents of deep hooking in the throat, gills and stomach of both undersize fish and recruited fish. Using only one hook per fisher greatly reduces the possibility of foul hooking, and decreases instances of physical damage to fish from poor handling of fish when landing and unhooking the catch.

The hook measures proposed by *SoundFish* would require all hook and line fishers from boats or vessels in the Marlborough Sounds to use a minimum size 6/0 hook and one hook per fisher. Size 10/0 or larger hooks would be required for set lining. This measure would not change methods for fishers from the shore, jetty or wharf in the Marlborough Sounds when permitted.

The proposed hook regulations would have the following benefits for the fishery:

- A marked reduction of hook and line release mortality for blue cod (mortality from predation of released fish will still occur).
- Allow continuation of fishing from the shore, wharf or jetty using smaller hooks. This will allow fishing for baitfish from the shore and use of multi-hook jigs and small spinners. These fishing methods are an important component of recreational fishing and are also the methods by which youths learn to fish.
- Allows setlining within the Marlborough Sounds to continue whilst minimising any impacts to blue cod.

These benefits extend across the whole of Marlborough Sounds without reducing access or effort to blue cod or other fisheries.

MFish considers the proposed hook regulations challenging for fisheries compliance, since it requires inspecting boat fishers' hooks and tackle. In addition, the large number and widespread distribution of fishing vessels within the Marlborough Sounds will draw on fisheries compliance resources.

The proposed change to the existing boundary is based on the existing Marlborough Sounds MDC coastal boundary. The proposed boundary extends from Cape Soucis in the west to Whites Bay in the east and out to two nautical miles from shore (Figure 4).

The boundary is larger than the existing area, extends further seaward into Cook Strait some two nautical miles from all landmarks, and encompasses the additional areas of Crosilles Harbour to west D'Urville, and Port Underwood, Robin Hood Bay, Whites Bay and the southern limit at the Wairau Bar.

The proposed boundary reflects the existing MDC coastal boundary. This will assist with fishery management initiatives in the future, and supports ecosystem

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<sup>9</sup> Guidelines for blue cod fishing in the Challenger Fishery Management Area (East)

management approaches that will require integrated management with the Resource Management Act.

None of the additional areas within the larger boundary other than west D'Urville are currently included in the blue cod relative biomass surveys. It is not possible to comment whether there is a decline of blue cod requiring inclusion of these areas within the proposed regulatory changes. The 2004 and 2007 survey data for west D'Urville Island suggest that the local blue cod population is viable. Nevertheless, these outer lying areas are equally vulnerable to displacement in effort from fishers seeking locations that are more productive.

Table 1 describes risk associated with the proposed option and identifies mitigation measures.

**Table 1. Identification of risks and mitigating measures.**

Risk	Mitigating measure(s)
Closed areas increase migration and concentration of fishing pressure in open areas causing depletion impacts to these areas.	<p>Ensure temporary closures are only closed for as long as necessary.</p> <p>Implement complimentary measures such as reduction of the daily bag limit and no accumulation of bag limits for multi-day trips to reduce extraction.</p> <p>Implement complimentary measures to reduce mortality of juveniles such as no high grading.</p>
Fishers' compliance with new measures is low	<p>Basing measures on feedback from consultation should improve the community buy-in and improve compliance rates.</p> <p>Implementing a communication plan will improve understanding of changes to regulations, improve awareness of issues facing the fishery, and identify differences in daily bag limit and minimum legal size between areas. Inform key stakeholders such as fishers, tackle retailers and the tourist sector.</p> <p>Update notice boards, website and pamphlets with changes to regulations.</p> <p>Provide clear guidance for the definition of the minimum gape size for size 6/0 and 10/0 hook measures. Liaise with fishing retailers, industry and fishing associations to ensure measure is widely understood and hooks available in Marlborough Sounds Area.</p>
Review of survey data for ending or continuing closure leads to disagreement between stakeholders for which action is appropriate	<p>Set clear objectives for recovery based upon science advice and community wishes.</p> <p>Ensure review of data is part of a transparent process including a consultation process.</p>
Blue cod populations rebuild but are quickly re-depleted in a 'gold rush' soon after fishery is re-opened.	<p>The proposed changes to bag limits and other measures will lower existing extraction of blue cod and incidental mortality. Part of the process to reopen fishery should review the success of proposed measures, and consider the whether they are sufficient to ensure sustainable harvest levels.</p>
Blue cod populations do not rebuild in the inner areas by 2011.	<p>Review survey data in 2011 and consider longer closure period.</p> <p>It may be necessary to decrease the periodicity of the relative biomass survey from four years and increase review period.</p>
Serial depletion extends to other areas of the Marlborough Sounds	<p>Review available data from fishing sectors and consider appropriate actions with <i>SoundFish</i> and through Challenger Fin Fish Plan.</p>

The proposed input control measures for the recreational fishery will require amendment of the existing regulations for bag limits (reduction from 3 blue cod to 2, and 6 per boat), possession of only one day's bag limit on multi day trips, high-grading and landing conditions for blue cod (whole or gutted) fishing. Other proposed measures do not overlap with existing regulations.

### **Implementation and review**

The new measures are planned to commence from 1 October 2008. This will follow a programme of communications to ensure all fishers and the local community are aware of changes to recreational fishing regulations for the Marlborough Sounds.

Recreational fishers are expected to be aware of the fishing regulations. MFish compliance activities include informing recreational users and providing information material on relevant rules. Operational compliance activities include initiatives to raise awareness of the rules, as well as enforcement activities including patrols, inspections, infringement notices and prosecution of more serious offences.

To maximise voluntary compliance MFish will need to conduct an ongoing education campaign to provide information and advice to promote high levels of understanding and acceptance of the regulatory changes. Signage and pamphlets specific for the Marlborough Sounds Area, along with public advertisements and media releases will be commence following a final decision.

To create an effective deterrent in the fishery will require a number of tools including enforcement and legislative deterrents, land and at-sea monitoring, and inspections by Fishery Officers.

Legislation deterrents come through a structured penalty regime for offences with ramped infringement fines for breaches of daily bag limits (\$250 fine applicable for taking/possession up to less than twice the daily bag limit and a \$500 fine for taking/possession over twice the daily bag limit). Court proceedings with a maximum penalty of \$20,000 with resultant forfeiture upon conviction of any property used in the commission of the offence apply for a breach where more than three times the daily bag limit is taken.

Maintaining an effective presence of Fishery Officers within the Marlborough Sounds Area will be important for providing an effective deterrent for offences, as well as meeting the community expectations of the enforcement of rules and response to reports of possible breaches. This will be particularly challenging given the large geographic area policed, the relative unfettered access and the large recreational fishing community who use the Marlborough Sounds resource. Some fisheries offences such as high-grading are also difficult to detect. MFish has not yet determined the cost of compliance for the proposed regulatory changes.

A review of the proposed closures and effectiveness of input controls would take place in 2011 to coincide with next survey. However, there is uncertainty over how long a temporary area closure would be required. Long Island and Tonga Island marine reserves have both shown signs of recovery within a few years of fishing

cessation. The geography and low base of juvenile and adult fish within the worst depleted areas of the Marlborough Sounds may require a longer period for populations to recover.

Longer term management, review of any implemented proposals, research and future ecosystem approaches to management will be addressed through the Challenger Fin Fish Inshore Plan (CIFF). Development of this plan recently commenced in December 2007.

Should temporary closure of areas of the fishery be implemented, it is proposed that the CIFF would assume responsibility for setting the success criteria to determine when and how a temporary closure would be re-opened. Prior to re-opening a closed fishery it will also be necessary for the CIFF to consider the necessity for any further regulation to ensure the longer term sustainability of the fishery is maintained. It is envisaged that the CIFF will work closely with community groups such as *SoundFish* to continue this longer term management work.

MFish will review the requirement for more frequent surveys of blue cod and extending the survey strata to include areas such as Port Underwood. From 2007 these surveys are scheduled to be repeated on a 4 year cycle in keeping with surveys in other management areas. The next blue cod survey is scheduled for 2011.

### **Consultation**

Pre-consultation on the proposal set out in the IPP has been undertaken with the *SoundFish*. This multi stakeholder group represents a wide section of the Marlborough Sounds fishers and community: including Maori, commercial and recreational. This pre-consultation has helped to shape the options presented here and includes two options put forward by *SoundFish* as additional and independent submissions.