

Review of Sustainability Measures and Other
Management Controls for 1 April 2009

**Volume 1: Final Advice Papers and Summary
of Recommendations**

13 March 2009

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INTRODUCTION

1 This paper provides you with the Ministry of Fisheries (MFish) **initial position, final advice and recommendations** on those sustainability measures and other management controls reviewed for 1 April 2009.

2 This Final Advice Paper (FAP) is produced in three volumes:

Volume 1

Statutory Obligations and Policy Guidelines

Final Advice Papers

Summary of Recommendations

Volume 2

Summary of Submissions

Initial Position Papers

Volume 3

Submissions

Initial Position Papers

3 The initial position papers (IPP) were developed for consultation as required under the Fisheries Act 1996 (the Act). They contained MFish's initial position on the fishstocks and deemed values identified for review. MFish emphasised that the views and recommendations outlined the papers were preliminary and were being provided as a basis for consultation with stakeholders.

Consultation

4 On or about 21 November 2008 MFish provided copies of the IPPs (contained in Volume 2) to iwi, stakeholders and you. Stakeholders and iwi were asked to provide written submissions on the IPP by 30 January 2009.

5 A summary of the submissions received for each IPP are contained in Volume 2. The submissions themselves are included in Volumes 3.

Final Advice Paper

6 This paper contains MFish's final advice to you on management measures for southern blue whiting (SWB 6B) and deemed value rates for selected fishstocks for the 1 April 2009 sustainability round.

- 7 Each FAP section provides MFish discussion (including an analysis of your statutory obligations in relation to each issue) and MFish's preferred options.
- 8 A summary of recommendations for both of the FAPs is included at the end of Volume 1.
- 9 A copy of this final advice paper will be made available to iwi and stakeholders who made a submission on these proposals, following the announcement of your decisions.

Implementation of Decisions

- 10 Following your final decision on any changes to management controls for 1 April 2009, officials will provide you with a draft letter to stakeholders outlining your decisions.
- 11 In addition, s 12(2) of the Act requires that after setting or varying any sustainability measure, you are required to write to sector groups advising them of the reasons for your final decisions.

Section One

Statutory Obligations and Policy Guidelines

STATUTORY OBLIGATIONS AND POLICY GUIDELINES

- 1 The Final Advice Paper (FAP) provides the Minister with the best information available to make a decision, legal obligations, the available options and the risks/consequences of each possible course of action. In short, MFish provides full information and ensures that the implications of actions are understood. Included in this analysis will be the possible consequences of leaving all management measures unchanged (the status quo).
- 2 This section provides guidance on the interpretation those sections of the Fisheries Act 1996 (the Act) that are most relevant to setting sustainability measures. This will help interpret the information and advice provided in individual papers.

Purpose of the Fisheries Act 1996 (s 8)

- 3 The purpose of the Fisheries Act 1996 is to provide for the utilisation of fisheries resources while ensuring sustainability. It is a statement of the overarching goal for fisheries management against which all decisions under that Act must be measured. The purpose statement guides the exercise of decision making powers pursuant to the Act.
- 4 “*Ensuring sustainability*” as defined provides a guide on desirable yields from a fishery. Fisheries resources are to be maintained with the potential to meet the reasonably foreseeable needs of future generations. In addition, the purpose requires that any adverse effects of fishing on the aquatic environment should be avoided, remedied or mitigated.
- 5 “*Utilisation*” of fisheries resources is defined as conserving, using, enhancing, and developing fisheries resources to enable people to provide for their social, economic and cultural wellbeing. There is a positive obligation to provide for the use of fisheries resources. While the Act does not require the government to promote fishing or maximise value, there is a positive obligation to provide a level and quality of access to fisheries resources, thereby enabling people to provide for their social, economic and cultural wellbeing from fishing. Section 8 refers to “enabling people to provide for their social, economic and cultural wellbeing”. This implies decisions under the Act should enable people to provide for their own wellbeing. Decisions should create the opportunities.
- 6 The Select Committee in its final report to the House of Representatives on the Fisheries Bill (as it then was) stated that the intention of the Bill was to “*facilitate the activity of fishing while having regard to the sustainability of harvests and mitigating the effects of fishing on the environment*”. In the *Coromandel Scallops Fishermen’s Association (Inc) v Minister of Fisheries* case (Wellington CP 182/99, 13 September 1999) the High Court noted that “utilisation is subject to the overriding objective of sustainability” (at page 22). In an earlier judgment, the High Court considered that “when in doubt decision makers must favour conserving the fishing stock”, noting that this was plain from the “international agreements” (see *Roaring Forties Seafoods Limited & Ors v Minister of Fisheries* (High Court, Wellington CP 64/97, 1 May 1997) at page 9).

7 Since then the courts have given further consideration to how the purpose of the Act is to be applied, and in particular the relationship between utilisation and sustainability. In the *Squid Fishery Management Co v Minister of Fisheries*, 13 July 2004, CA39/04 litigation, the Court of Appeal noted that:

“The Minister...was required to balance utilisation objectives and conservation values. In the context of a harvestable species, this requires utilisation to the extent that it is sustainable...”

8 The purpose statement provides for one purpose that contains the elements of providing for utilisation and ensuring the sustainability of fisheries resources. This does not mean that one arm of the purpose is more important than the other is. Rather, it means that the two arms operate in parallel, and not independently of each other. Both elements need to be fully considered when acting under the Act. However, the bottom line must always be sustainability.

9 In operation the range of management measures that may be applied to achieve the purpose of the Act will produce a continuum of potential outcomes. This continuum reflects the balance that must be struck between providing for utilisation whilst ensuring sustainability. The continuum represents the range of options that must ensure sustainability with varying degrees of risk. Each option within the continuum also provides different levels of utilisation depending on the level of risk to sustainability the decision maker considers acceptable. The decision on a particular point on the continuum is in essence a decision on the appropriate balance between sustainability risk and short-term utilisation on a case by case basis. However, the overriding point is that sustainability must be ensured by each option. The explicit reference in the definition of “*utilisation*” to social, economic, and cultural factors indicates that all decisions made under the Act should consider these issues.

Future Generations

10 The Act, in its directive to provide for future generations, draws no direct distinction between the next generation and some distant generation in time. No precise determination is possible of where one generation begins and another generation ends. The time scale involved may be dependent upon the interests that are to be taken into account. Logically the time frame relevant to the reasonably foreseeable needs of future generations may be as short as each generation of children or an indefinite time in the future.

11 The needs of future generations however are to be considered in the context of the purpose of the Act and the provisions of the Act as a whole. The obligation is not open ended, it is what decision makers can reasonably identify as a need for a particular generation. Future generation objectives are characterised by uncertainty — what level of population will exist in the future; what future preferences will be; what future requirements will be; what the impacts of our present actions will be; and, what technological innovations will allow. But in cases of uncertainty the information principles of the Act (s 10) are to be applied appropriately.

12 The objective of the Act is to sustain fisheries resources for future use, not to provide for how future generations may desire to use such resources. Uncertainty is therefore to be considered in the context of how current decisions impact on the ability to provide for future use of the resource. Reference to “*maintaining potential*” to meet

needs suggests that the crucial requirement in respect of future generations is to ensure the renewability of fisheries resources indefinitely at a quantity that provides for continual utilisation. Hence, the aim of the Act can be seen in part as providing for the extractive use of fisheries resources in the present, whilst maintaining the potential of those fisheries resources to provide for future generations.

- 13 The maintenance of the general functioning of the aquatic environment is intended by the Act only in respect of managing fishing activities. Whereas enhancement of the aquatic environment, beyond that achieved through the avoidance, remedy or mitigation of adverse effects of fishing, is not. In terms of maintenance of the productivity of natural resources, the Act requires that biomass of a fishstock be maintained at a level that is at or above the level required to produce the MSY. MSY is the greatest yield that can be achieved over time while maintaining the stock's productive capacity. Therefore MSY caters for both maintenance of reproductive potential and ongoing utilisation. For most harvested stocks MSY is a practical means of providing for the reasonably foreseeable needs of future generations. The Act provides some circumstances for departure from this reference point in respect of stocks listed on the Third Schedule to the Act (s 14), and stocks maintained at a level below BMSY but above their long-term viability (ss 14A and 14B).
- 14 The interests of future generations are described in s 8(2)(a) as relating to "fisheries resources" which are defined as "fish, aquatic life, seaweed". No express reference is made to the inanimate elements of the aquatic ecosystem. It is considered implicit in the legislation that a sustainable aquatic ecosystem is integral to, or a pre-requisite of, the ability of fisheries resources to meet the reasonably foreseeable needs of future generations. However, in meeting reasonably foreseeable needs of future generations the scope of the Act relates to managing the effects of fishing, not all impacts on the aquatic environment.

Effects of Fishing

- 15 The obligation to avoid, remedy, or mitigate adverse effects of fishing pursuant to s 8(2)(b) of the Act is the second element of ensuring sustainability. Consideration as to what is adverse may be assessed on scientific knowledge about the environment, but may also utilise traditional knowledge. It is also likely to be influenced by stakeholder/community perceptions as to what is acceptable.
- 16 The requirement to "remedy" or "mitigate" suggests that such measures may be implemented over a time frame relevant to the circumstances of the individual decision and nature of the activity involved. Equally achievement of this objective will contribute to maintaining the potential of fisheries resources to contribute to the wellbeing of future generations.
- 17 The Act does not define an "adverse effect"; rather it defines the term "effect". The term "effect" has a very broad definition, including effects that are temporary or permanent; past, present, or future; cumulative; any potential effect of high probability; and any potential effect of low probability, which has a high potential impact. No threshold is specified as to the magnitude of any adverse effect required before any measure in response is to be adopted. Hence the measures adopted in response should be commensurate with the nature and extent of the adverse effect. There are a number of other variable factors that will influence whether an effect is

considered adverse: characteristics of the aquatic environment; impacts from the removal of fish; the scale, intensity, and duration of effects; scarcity of environment type at local, regional, national, international level; resilience of habitat; the effects of activities other than fishing at a region level, the relationship of fishing effects to this; human perception and values; and the level of information available on any of these.

- 18 The Act does not prescribe an order of priority between the obligations to avoid, remedy or mitigate. The onus is on the decision maker to ensure that any adverse effects can be avoided, remedied or mitigated. The obligation to “avoid, remedy or mitigate” is not subject to any qualifier to the effect that such measures only need to be undertaken to an agreed standard. The appropriate response must depend on the circumstances of the case, and should be guided by the environmental principles (s 9) and the information principles (s 10) in the Act.
- 19 Decision makers can weigh up all the environmental factors contributing to the effect, along with the possible options available for avoidance; consider relevant social, economic and cultural factors; take into account the environmental and information principles of the Act; and opt for the most appropriate option of either avoid, remedy or mitigate. In some instances, only one response may be effective. Accordingly, completely irreversible effects are to be avoided. In other instances, it may be appropriate to consider a range of options. MFish acknowledges that sustainability is not a purpose to be traded off against utilisation through an analysis of the benefits and costs. However, the Act allows a range of approaches for achieving sustainability, and these may, and indeed should, be compared in terms of benefits and costs.

International Obligations

- 20 Section 5(a) of the Act provides that the Act shall be interpreted, and all persons exercising or performing functions, duties, or powers under the Act shall act, in a manner consistent with New Zealand’s international obligations relating to fishing. Those acting pursuant to the Act must understand, and act in a manner consistent with, the international obligations that the New Zealand Government has accepted. A general principle to apply is that where there is a choice in interpretation of the Act or the exercise of discretion, s 5(a) requires that the decision maker choose the option that is consistent with New Zealand’s international obligations relating to fishing.
- 21 It is MFish’s view that the provisions of the Act, and the proposed exercise of powers under the legislation, are generally consistent with New Zealand’s existing international obligations relating to fishing.

Treaty of Waitangi (Fisheries Claims) Settlement Act Obligations

- 22 The Act shall be interpreted, and all persons exercising or performing functions, duties, or powers under the Act, are required to act in a manner consistent with the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992. This also requires an interpretation that best furthers the agreements expressed in the Deed of Settlement referred to in the Preamble to the Settlement Act.
- 23 The Settlement Act acknowledges that the Crown continues to be subject to the principles of the Treaty of Waitangi in respect of non-commercial Maori fishing rights. The Settlement Act did not extinguish the duty to act in accordance with the

principles of the Treaty in respect of non-commercial Māori fishing rights and interests, and goes as far as specifically requiring this in relation to the obligations under s 10 of the Settlement Act.

24 MFish acknowledges the following basic requirements apply to the Crown's obligation to act in accordance with the principles of the Treaty of Waitangi:

- a) that the Crown acts reasonably and in good faith towards its Treaty partner;
- b) that the Crown makes informed decisions; and
- c) that the Crown avoids impediments to providing redress, and avoids creating new grievances.

25 These principles put an onus on MFish to establish structures and work practices that ensure it is capable of meeting its obligations to Māori under fisheries legislation. In *New Zealand Māori Council v Attorney General* [1987] 1 NZLR 641 the Court of Appeal concluded:

“the responsibility of one treaty partner to act in good faith fairly and reasonably towards the other puts the onus on a partner, here the Crown, when acting within its sphere to make an informed decision, that is a decision where it is sufficiently informed as to the relevant facts and law to be able to say it has had proper regard to the impact of the principles of the Treaty.” (at page 683)

26 The principle of partnership and the requirement to act in good faith towards the other Treaty partner extends an obligation on the Crown to also consider and act on any proposals put forward by tangata whenua for the management of their customary fisheries. The principle of avoiding the creation of new grievances is of particular relevance in the fisheries environment now that a full and final settlement has been achieved. Fisheries management decisions seldom impact on one sector group alone, and the risk of such decisions adversely impacting on the secured rights and interests of Māori is a very real one.

Environmental Principles (s 9)

27 The Act prescribes three environmental principles that the Minister must take into account when exercising powers in relation to utilising fisheries resources and ensuring sustainability.

Principle 1: Associated or dependent species should be maintained above a level that ensures their long-term viability.

28 The Act defines “associated and dependent species” as any non-harvested species taken or otherwise affected by the taking of a harvested species. “Harvested species” is defined as any fish, aquatic life or seaweed that for the time being may be taken with lawful authority. Fishers have lawful authority to take most species. Exceptions include those where a fisher does not have a permit to take a species listed on Schedule 4C to the Act – these are subject to the permit moratorium – and protected species such as marine mammals and most seabirds. These together constitute associated or dependent species.

- 29 The term “long-term viability” (in relation to a biomass level of a stock or species) is defined in the Act as a low risk of collapse of the stock or species, and the stock or species has the potential to recover to a higher biomass level. This principle therefore requires the continuing existence of species by maintaining populations in a condition that ensures a particular level of reproductive success. The long term viability will be different for each species so necessitates a case-by-case analysis.
- 30 Long-term viability could be achieved at very low levels of population size, depending on associated risks, such as recruitment failure at low population sizes. Where fishing is affecting the viability of associated and dependent species, there is an obligation to take appropriate measures, such as method restrictions, area closures, and potentially adjustments to the total allowable catch (TAC) of the target stock.

Principle 2: Biological diversity of the aquatic environment should be maintained.

- 31 “Biological diversity” means the variability among living organisms, including diversity within species, between species, and of ecosystems. The “aquatic environment” is defined as:
- a) The natural and biological resource comprising any aquatic ecosystem; and
 - b) Includes all aquatic life and the oceans, seas, coastal areas, inter-tidal areas, estuaries, rivers, lakes and other places where aquatic life exists.
- 32 When considering any decision under the Act, particularly sustainability measures, the impact of current or future impacts on biodiversity must be taken into account. The maintenance of biodiversity needs to be considered in the context of the purpose of the Act, which is that, where possible, a resource should be used to the extent that sustainability is not compromised. Determining the level of fishing or the impacts of fishing that can occur requires an assessment of the risk that fishing might cause biodiversity to be reduced to an unacceptable level.

Principle 3: Habitat of particular significance for fisheries management should be protected.

- 33 Habitat is not defined in the Act, but MFish considers it to be “the place or type of area in which an organism naturally occurs” (NZ Biodiversity Strategy). The Magnuson-Stevens Fishery Conservation and Management Act (USA) defines “essential fish habitat” as “those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity”. The maintenance of healthy fishstocks requires the mitigation of threats to fish habitat. However, fishing may not be the sole source of the threat; a range of terrestrial activities may impact on fisheries habitats. Habitats of special significance, such as those that assist in the reproductive and productive process of a fishery, should be protected. Adverse effects on such areas must be avoided, remedied or mitigated.

Information Principles (s 10)

- 34 The nature of the data and assumptions used to generate fisheries assessments and the results produced contain inherent variation and uncertainty. The Act specifies the

information principles that must be taken in account when making decisions in relation to utilisation of fisheries resources or ensuring sustainability.

- a) Decisions should be based on the best available information. The Act defines best information that, in the particular circumstances, is available without unreasonable cost, effort or time;
- b) Decision makers should consider any uncertainty in the information available in any case;
- c) Decision makers should be cautious when information is uncertain, unreliable or inadequate; and
- d) 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.

35 A person with decision making powers under the Act is required “to take into account” the information principles set out in s 10. The information principles do not of themselves impose any statutory or fiduciary duty on the Crown to actively obtain the information necessary such that the obligations under the Act are able to be discharged. The information principles provide guidance as to how decisions are to be legitimately made on the basis of the information which is available.

36 The principle that decisions should be based on the best available information, provides guidance that decision-makers (ie the Minister or MFish) should seek to obtain the best information provided that, in the particular circumstances, is available without unreasonable cost, effort or time (as provided for in the definition of best available information in section 2 of the Act). Where new and better information comes to light during the decision-making process, that information should be incorporated into, and update, the information basis for a proposed decision.

Determining uncertainty – scientific and anecdotal information

37 Information as defined in the Act includes scientific, customary Maori, social or economic information and any analysis on any such information. The best available information for any given decision will likely necessarily incorporate both scientific and anecdotal (or quantitative and qualitative) information. As such both scientific and anecdotal information should be considered and weighed accordingly when making management decisions.

38 The weighting assigned to particular information is subject to the certainty, reliability and adequacy of that information. As a general principle, information on stock status outlined in the MFish Fishery Assessment Plenary Report, when available, should be given significant weighting. The information presented in the Report is subject to a robust process of scientific peer review.

39 Anecdotal information on stock status typically should receive lesser weighting than the Plenary Report. However, MFish believes that corroborated anecdotal information has a useful role to play in the stock assessment process and in the management process. Such processes should take account of all relevant inputs, and MFish believes that anecdotal information may provide useful, supplementary

information to that contained in the Plenary Report, and should be taken into consideration where appropriate.

- 40 Although all sector groups are invited to participate in the stock assessment process, recreational, environmental and customary interests are often not represented due to a lack of resources. Therefore, anecdotal information from these groups may not be available at the time of the assessment to help interpret the quantitative modelling results. In particular, there are often difficulties in obtaining scientific information on the local availability of stocks in areas of importance to customary and recreational fishers given that the Plenary Report often focuses on assessing the status of a stock at the QMA level. Anecdotal information from customary and recreational sources may be an especially useful source of information in these cases.

How to make decisions under uncertainty: Fisheries Act 1996

- 41 The current Fisheries Act 1996 makes clear that while decision makers should be cautious where information is uncertain, unreliable or inadequate, they should not postpone decisions until they have full or completely certain information. The information on which decisions must be based may be unreliable in itself; or it may be insufficient to draw firm conclusions about the extent of a sustainability risk. More commonly, it suffers both these weaknesses. In these circumstances decision makers must balance competing risks: the risk of unnecessarily constraining utilisation on the one hand, versus the risk of placing sustainability in jeopardy, on the other.

Consultation (s 12)

- 42 When the Minister implements a sustainability measure under the Act, [he] is required to consult with those classes of persons having an interest (including, but not limited to, Maori, environmental, commercial and recreational interest) in the stock or the effects of fishing on the aquatic environment in the area concerned.
- 43 Statutory consultation occurs after policy options have been developed. The IPP provides stakeholders with the opportunity to comment on the various options. The FAP provides advice to the Minister that includes the results of that consultation.
- 44 Section 12 also requires the Minister to provide for the input and participation of tangata whenua having a non-commercial interest in the stock concerned or an interest in the effects of fishing on the aquatic environment in the area concerned. The Minister must also have regard to kaitiakitanga. This is a legal requirement, and reflects the provisions of the Settlement Act, and the Crown's commitment to its treaty partner. Input and participation may include tangata whenua being involved in identifying concerns and developing proposals as well as being involved in formulating possible outcomes.

Sustainability Measures

- 45 The Act provides for the setting of sustainability measures. The Act defines as "sustainability measures" those measures set under Part III of the Act for the purpose of ensuring sustainability. There are a range of measures that can be adopted under Part III, the most identifiable being a TAC for stocks in the Quota Management System (QMS) and catch limits for non-QMS stocks.

Factors to be taken into account when setting sustainability measures

46 Prior to setting or varying a sustainability measure the Minister is required to take a number of factors into account. The purpose and principles of the Act (ie ss 8–10), together with ss 5 and 12, are applicable to any decision the Minister may make to set or vary a sustainability measure.

Stock characteristics and management controls

47 Under s 11(1) the Minister may set or vary any sustainability measure, including a Total Allowable Catch (TAC), after taking into account the following factors:

- a) Any effects of fishing on the stock and the aquatic environment;
- b) Any existing controls that apply to the stock or area concerned;
- c) The natural variability of the stock concerned.

48 In accordance with achieving the purpose of the Act, any adverse effects of fishing on the aquatic environment should be avoided, remedied, or mitigated. As noted above in the section on environmental obligations, where MFish is aware of issues related to the effects of fishing associated with the stocks discussed, or issues are raised in submissions, they are discussed in the sections relating to that stock.

49 In general, the assessment for a fishstock will take into account the variability of the fishstock. Although the principal management mechanism for New Zealand's commercial fisheries is a catch limit, this is augmented by a number of other input controls such as gear restrictions, minimum sizes and area closures. The assessment and advice in the sections following take these existing controls into account.

Plans and the Hauraki Gulf Marine Park Act

50 Under section 11(2) the Minister must also have regard to relevant provisions of:

- a) Any regional policy statement, regional plan, or proposed regional plan under the Resource Management Act 1991;
- b) Any management strategy or management plan under the Conservation Act 1987 that apply to the coastal marine area and which the Minister considers to be relevant;
- c) Sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000 (see below).

51 The Hauraki Gulf Marine Park Act 2000 amended s 11(2)(c) of the Act to require the Minister, when setting or varying any sustainability measure relating to the Hauraki Gulf, to have regard to any provisions of ss 7 and 8 of that Act. Section 13 of the Hauraki Gulf Marine Park Act also requires decision-makers carrying out functions for the Hauraki Gulf under the Fisheries Act to have particular regard to the provisions of sections 7 and 8 of the Hauraki Gulf Marine Park Act. Section 7 of the Hauraki Gulf Marine Park Act recognises the national significance of the Hauraki Gulf including its capacity to provide for the relationship of tangata whenua and the social, economic, recreational and cultural well-being of people and communities. Section 8 sets out the objectives of the management of the Hauraki Gulf, which

include the maintenance of the Hauraki Gulf for the social and economic well-being and its contribution to the recreation and enjoyment, of the people and communities of the Hauraki Gulf and New Zealand. Many of these objectives mirror the concepts expressed in the purpose set out s 8 of the Fisheries Act, with perhaps a more explicit emphasis on recreational well-being.

Fisheries plans and services

- 52 The Act (s 11(2A)) also requires that the Minister takes into account, before setting or varying any sustainability measure:
- a) any conservation services or fisheries services;
 - b) any relevant fisheries plan approved under this Part; and
 - c) any decisions not to require conservation services or fisheries services.
- 53 Fisheries plans will specify a management framework for managing one or more stocks or areas in accordance with the purpose and principles of the Fisheries Act. Fisheries plans allow for explicit trade-offs between services and catch levels to be achieved in a transparent manner. There are no fisheries plans currently in place which require specific consideration. In future as fisheries plans are developed, specific reference to the implications for sustainability measures resulting from contents of the plan will be made in each stock section.

General considerations

- 54 Consideration also needs to be given to how a sustainability measure is to be implemented. In approving the use of a sustainability measure, the Minister should consider the most effective way of achieving the desired outcome. The Minister may conclude that a sustainability measure does not need to be formally set.
- 55 An important factor in supporting the use of non-statutory measures is the degree of support for the measure and the nature of the monitoring and enforcement regime proposed to support the measure. An example of a non-statutory measure is a catch limit for a single species within a multi-species stock, such as oreo, or the use of a catch spreading arrangement for orange roughy on the Chatham Rise. Non-statutory measures may be supported by legally binding contractual arrangements entered into by the fishers concerned. However, as the Crown is not formally a party to such agreements, there is no formal sanction imposed under the Fisheries Act for a breach of a sustainability measure implemented by non-statutory means. Any failure to adhere to non-statutory measures may mean that the Crown would be increasingly unlikely to rely on such measures subsequently.
- 56 Sustainability measures may also be set by regulatory means. The Act provides for the use of a regulation, or *Gazette* notice where necessary, to implement a sustainability measure. In the first instance, regulations are the preferred mechanism to implement general sustainability measures. However, a *Gazette* notice may provide a more timely and flexible response to particular situations than a regulatory response. For example, a *Gazette* notice may be used where a non-statutory implementation of a sustainability measure does not prove effective.

Other Management Controls

- 57 The primary sustainability measure for quota management stocks is the TAC. This can be supported by a number of management controls that collectively ensure the sustainability of the stock and provide for utilisation within accepted limits.
- 58 Section 11 provides for the setting of sustainability measures. A range of possible supporting measures is specified in s 11(3), but the list of options is not limiting. Sustainability measures may relate to size limits, biological state, fishing seasons, methods restrictions and closed areas. For non-QMS stocks, measures can also include general and commercial catch limits. The measures provided for under s 11 may be applied at a local level to address localised depletion or localised sustainability problems.
- 59 The most appropriate sustainability measure to be set or varied will depend on the precise nature of the issue being addressed.

Quota Management Stocks

- 60 The Act imposes a statutory requirement for the Minister to set a TAC for each QMS stock (s 13(1)). This requirement is modified by the condition that the Minister is not required to set an initial TAC for any fish stock unless it is proposed to also set or vary the TACC for that stock under s 20 of the Act (s 13(10)). For those fishstocks for which no TAC has been set, MFish's policy has been to set TACs and allowances progressively over time, as the need to review those specific fishstocks arises.

Setting a Total Allowable Catch

- 61 The Act contains a number of specific provisions to ensure a stock is managed sustainably. A key measure is the setting of a total allowable catch (TAC) for a QMS stock.
- 62 In the structure of the Act, setting a TAC is first a measure taken to ensure sustainability. As such, social, economic and cultural factors are not mandatory considerations when setting a TAC. However, the purpose of the Act is: *to provide for the utilisation of fisheries resources while ensuring sustainability*. Therefore, in setting TACs, values for the utilisation of resources are also key considerations, and so social, economic and cultural factors are permissible considerations where appropriate.
- 63 For example, where the stock biomass target is set at a level that can produce the maximum sustainable yield (MSY), then utilisation values are being provided for in allowing the MSY to be taken. However, where utilisation values would be higher at stock levels above a level that can produce the maximum sustainable yield – levels that are also more certain to be ensuring sustainability – social, economic and cultural factors would be appropriate considerations when setting the TAC.
- 64 The Act contains a number of different options (outlined below) for setting stock target levels. All of the options are consistent with the purpose of “ensuring sustainability”, but each option provides for a different management outcome.

Maximum Sustainable Yield (s 13)

- 65 In the case of quota management stocks, s 13 of the Act specifies a requirement to maintain a fishstock at a target stock level being at, or above, a level that can produce the MSY. MSY is defined, in relation to any fishstock, as being the greatest yield that can be achieved over time while maintaining the stock's productive capacity, having regard to the population dynamics of the stock and any environmental factors that influence the stock. A requirement to maintain stocks at a level that is capable of producing the MSY is generally recognised internationally as being an appropriate fishstock target, although there is some international support for MSY representing a minimum fishstock target.
- 66 If a stock is currently at its target level (at or above a biomass that will support MSY), s 13(2)(a) requires the Minister to set a TAC that will maintain the stock at that target level, having regard to the interdependence of stocks.

Rebuilding the stock towards target levels

- 67 If the stock is currently below a target stock level, there is a requirement pursuant to s 13(2)(b) to set a TAC that will result in the stock being restored to a target stock level (at or above a biomass that will support MSY) in a way and rate which has regard to the interdependence of stocks and within a period appropriate to the stock, having regard to its biological characteristics and any environmental conditions affecting the stock.

Fishing down a stock toward target levels or maintaining above

- 68 If the stock is above a target stock level (above a biomass that will support MSY), there is a requirement under s 13(2)(c) to set a TAC that will result in the stock moving towards the target stock level having regard to the interdependence of stocks. That target stock level may be at or above a biomass that will support MSY.

Way and the rate

- 69 In determining the way in which, and rate at which, a stock is altered to achieve the target stock level, the Minister is required to have regard to such social, cultural and economic factors considered relevant (s 13(3)). Section 13(3) makes it explicit that those qualifying factors are relevant in the determination of the way and rate, rather than in the determination of the target stock level. By "having regard" to the relevant factors specified by the Act, the Minister must consciously consider those matters and give due weight to them. However, the Minister has the discretion to give such weight to the matters as considered appropriate.
- 70 It is also important to note that, when the Minister is considering a significant reduction to the TAC, the advice to the Minister provides a careful cost/benefit analysis of a reasonable range of the way and rate options available in moving the fishery towards target biomass. This is so that, if the Minister decides on a TAC reduction having a major economic impact, it is evident that all other reasonable possibilities have been carefully analysed and why the TAC adopted was considered to be the preferable one – see *New Zealand Fishing Industry Association (Inc) and Ors v Minister of Fisheries and Ors* (CA82/97, 22/7/97)

- 71 The rate of rebuild to achieve the target biomass, and therefore the timeframe adopted to do so, is a matter for the Minister’s discretion. There is no set time frame within which the Minister must achieve a rebuild or “fishing down” of a stock. The Minister is given discretion under the Act to determine the rate at which the TAC is varied, subject to consideration of the relevant circumstances on a case by case basis.
- 72 Such considerations may include the potential impacts of decisions on the social, cultural and economic values of tangata whenua and stakeholders, including commercial and non-commercial fishers, and non-extractive users. Reference to cultural factors in s 13(3) encompasses but is not limited to the interests of Māori and their cultural practices and values.
- 73 The interdependence of stocks (i.e. any fish, aquatic life or seaweed of one or more species that are treated as a unit for the purpose of fisheries management) is a statutory consideration under section 13 for determining a TAC. In turn the TAC determines the level at which a stock is managed relative to a level that can produce the MSY. The interdependence of stocks may include the relationships among and between harvested species. MFish interprets interdependence of stocks as a situation where there is a direct trophic relationship (i.e. one stock is likely to be directly affected through a predator or prey relationship by the abundance of another stock) or mutually beneficial relationship between stocks. This is therefore distinct from the requirement to protect the viability of associated and dependent species expressed in the environmental principles.

Management above B_{msy}

- 74 The Act allows the Minister to manage fisheries at or above the biomass that will produce MSY (B_{MSY}) on an ongoing basis. In the case of quota management stocks, s 13 of the Act provides the scope for a stock to be managed at levels higher than B_{MSY} . Such a target level may be an appropriate management strategy in order to meet the wider social, cultural or economic goals provided for under s 8 (the purpose) of the Act, or due to the interdependence of stocks, for the sustainability associated and dependent species, or to prevent damage to the aquatic environment.
- 75 Where common goals exist or values coincide in particular stock target levels, a high degree of consensus amongst stakeholders may support management above B_{MSY} . For example, an agreed management strategy may be developed among commercial and on-commercial stakeholders to improve catch rates or produce large fish. In such cases MFish would support the consensus in advice to the Minister.
- 76 MFish considers that management above B_{MSY} is likely to be appropriate where there is consensus amongst stakeholders to do so. However, there is no legal requirement restricting the Minister to make this choice where such consensus either exists or does not exist.

Managing sub-stocks

- 77 Under section 13, the Minister has a mandatory duty to set the TAC at a level that enables a stock that is below B_{MSY} to be restored to at least a level that can produce MSY. In setting the TAC, the Minister must base this decision on B_{MSY} for the stock as a whole (i.e. within the QMA) and not the individual level of any sub-stocks. For

example, the Minister should not set the TAC at a level solely designed to bring a component sub-stock to B_{MSY} .

- 78 The management of localised depletion or localised sustainability problems poses some challenges. Measures designed to ensure sustainability at a QMA level may not be effective at providing desired levels of access to fisheries on a localised basis. A determination is required as to which measures will best address the specific sustainability issue confronted. The Act allows scope for a range of measures, both regulatory and voluntary, that may be applied at the stock or local level to address sustainability issues. These include catch spreading arrangements; area specific catch limits and bag limits; closed areas; controls on methods, size, and season; and spatial measures such as mātaimai and taiapure.
- 79 Varying a TAC is primarily used to address stock-wide sustainability issues. However, localised sustainability issues may affect the maintenance of the stock at or above the level that can produce the maximum sustainable yield, and therefore a TAC adjustment may be appropriate. The size of the area and/or the number of areas depleted is relevant to this consideration.

Other matters

- 80 The Act specifies that the TAC is the primary tool for moving a stock towards the target stock level. Other measures may be adopted in conjunction with a change in the TAC, however such additional measures should not be relied on as a substitute for varying the TAC.
- 81 Under section 13(4), the Minister may vary any TAC for any quota management stock. When considering any such variation, the Minister is to have regard to the matters specified in ss13(2) and (3).
- 82 Any TAC that is set or varied has effect on and from the first day of the next fishing year for the stock concerned. An exception applies to those stocks listed on the second schedule to the Act (see heading below).
- 83 Section 13(5) of the Act specifies that a TAC of zero may be set. It may be in situations where there are strong biological reasons for prohibiting all removals from a stock in order to ensure sustainability. The setting of a zero TAC may be part of a specified rebuild strategy to move the stock towards the target stock level. Prior to setting a zero TAC the Minister would need to have regard to the social, cultural and economic costs and benefits associated with such a measure.

Amendment of Section 13

- 84 At present, Parliament is considering a Bill that, if passed, will amend section 13 of the Fisheries Act 1996. The Bill provides for technical amendments as a consequence of the judgment of Miller J in *Anton's Trawling Company Limited v The Minister of Fisheries* (High Court, Wellington, CIV 2007-485-2199, 22 February 2008). The court in that case decided that before a TAC can be set under section 13, the Minister must be provided with an estimate of both current biomass and the biomass that can produce the maximum sustainable yield (MSY).

- 85 Since the Act came into force, various management strategies—all consistent with the concept of MSY—have been pursued, some using modelled estimates of biomass levels and others using alternative indicators of the relative state of the stocks. Some of the alternative indicators have direct links to MSY. In other cases the links are inferred. These alternative approaches are commonly used in fish stocks where information on biomass is not readily available. This is the case for the majority of New Zealand’s 629 quota management stocks and is the norm internationally, being commonly used in jurisdictions with similar regimes such as Australia, the United States, and Canada.
- 86 The amendments will enable TACs to continue to be set under section 13 using existing management approaches where the current biomass and the biomass that can produce a MSY are not able to be estimated reliably.
- 87 In effect, considerations in decision-making should not change (this is the intention of the amendment), but advice on the setting and variation of TACs under section 13 will need to identify which subsection should be used to provide the proper criteria for the decisions. This will depend on whether biomass estimates now required by the existing section 13(2) are available for the particular stock in question.

Allocation of the TAC

- 88 The Minister is required to make allowances for different fishing interests under sections 20 and 21 of the Act. The Minister makes a separate decision about allocation after setting the TAC. In setting or varying the TACC under section 20, and thus establishing the commercial share, the Minister must allow for Māori customary non-commercial fishing interests, recreational interests and all other mortality to that stock caused by fishing under section 21; these will be discussed below.

Discretion to allocate TAC

- 89 The Minister, on each occasion [he or she] reconsiders allocation of the TAC for that stock, has the discretion to determine, on a case-by-case basis, how to allocate the TAC. There is little statutory guidance on the apportionment of the TAC among sector groups, either with respect to quantitative measure or prioritisation of allocation.
- 90 A conscious transfer of catch between sectors is a legitimate activity under the Act. An allocation decision that adversely affects ITQ holders but which advantages – deliberately or incidentally – non-commercial interests is not in itself outside, or contrary to, the purpose of the Act.
- 91 The appropriate allocation is a matter for the Minister’s assessment bearing in mind all relevant considerations on each occasion [he or she] revisits the issue. The allocation of the TAC can be changed under various circumstances, not just in relation to a change in biomass. For example, the Minister is not precluded from giving extra allowance to meet a greater recreational demand, subject to [his] obligation to weigh carefully all the competing demands on the TAC before deciding how much should be allocated to each sector group.

Customary allowance

- 92 The allowance made for customary fishing should satisfy customary interests, and therefore the allowance should not constrain the level of customary catch taken. The customary fishing regulations (Fisheries (South Island Customary Fishing) Regulations 1999 and the Fisheries (Kaimoana Customary Fishing) Regulations 1998) do not provide for the Crown to place limitations on customary fishing, apart from to ensure the sustainability of a particular stock. Customary take is regulated through the authorisation system in the customary regulations, which requires that all customary fishing is to be undertaken in accordance with tikanga and the overall sustainability of the fishery.
- 93 In most cases, there is little information on customary fishing, although this will improve as customary regulations take effect and better reporting processes are implemented.
- 94 In the meantime, setting appropriate customary allowances is difficult. MFish has adopted a policy that bases the customary allowance on the recreational allowance, such that:
- The allowance is set at (and in some cases above) the recreational allowance for species of importance to customary users;
 - The allowance is set at half the recreational allowance for species known to be taken by customary fishers but are not of importance; and
 - No specific allowance is provided where there is no known customary catch of a species.
- 95 By following this approach, it is unlikely that customary take would ever exceed the allowance. Customary allowances may well be reduced if the Minister is confident that actual customary take will remain within the revised allowance.
- 96 In response to submissions on the 2006 IPPs, MFish agreed that it may be possible to more accurately determine customary Maori interest in specific fisheries. MFish is undertaking an examination on the way in which customary allocations are derived and to produce guidelines on how this may be better achieved over the medium term. This work is at a preliminary stage and no outputs are available to influence customary allowances at this time.

Recreational allowance and the commercial allocation

- 97 Prior to setting the TACC, the Minister must also allow for recreational interests in the stock – an allowance must be made for recreational fishers where demand exists. However, there is no requirement to provide for recreational demand in full, nor does the recreational allowance take priority over the commercial allowance.
- 98 In terms of those considerations the Minister is to take into account, MFish notes that s 8 of the Act, in the context of utilisation of fisheries resources, refers explicitly to the Act enabling people to provide for their social, economic and cultural wellbeing.
- 99 Outlined below are descriptions of some of the relevant considerations that may be taken into account when allocating a TAC. This is not an exhaustive list. MFish

considers that those factors which may be relevant to the exercise of the Minister's discretion, in addition to the principles specified in s 5 (international law and Settlement Act obligations), s 8 (purpose statement), s 9 (environmental principles) and s 10 (information principles) of the Act, include, but are not limited to:

- a) the characteristics and current status of stock;
- b) the existing allocations;
- c) current catch levels;
- d) previous decisions;
- e) equity of allocation – notion of “shared pain” when stock declines / “shared benefit” when stock rebuilds;
- f) participation levels and importance of the resource, including customary values;
- g) population trends;
- h) the extent to which people's social, economic and cultural well-being will be satisfied, both directly and indirectly;
- i) assessment of relative value of resource to respective sectors;
- j) current and past fishing practices (including overfishing, voluntary shelving or closures by a stakeholder);
- k) investment and initiatives undertaken to develop or enhance the resource;
- l) impact on ability of sector to take allocation provided;
- m) customary fishing rights (as confirmed by the Settlement), recreational fishers common law fishing rights, and commercial fishers property rights as quota holders;
- n) economic impact of allocative decisions;
- o) social and cultural impact of decisions;
- p) recreational fishers' common law right to fish, subject to statutory limitations; and
- q) any loss of access to particular species.

100 Information about the current status of the stock relative to the statutory target level, existing catch levels, existing allowances and catch levels, plus previous decisions may be informative of the actions that need to be taken.

Proportional vs reallocative

- 101 Where the TAC is reduced, either TACCs and/or other allowances must also be reduced. There is no statutory obligation to undertake a proportional reduction between recreational and commercial interests.
- 102 The Act assigns no priority between commercial and recreational interests, except to the extent that customary and recreational non-commercial interests must be provided for to some degree where they exist. Within that framework, the Act permits the preference of one sector to the disadvantage of another; for example to provide for greater allowance for recreational interests in proportion to the commercial allocation.
- 103 Notwithstanding the Minister's discretion to allocate catch, case law also considers that it is not unreasonable for commercial and recreational fishers to share some of the "pain" from a reduction in the TAC. There is no requirement that the interests of recreational or commercial fishers must be fully provided for.
- 104 MFish considers in situations where there is an absence of information about the relative benefits to be derived from allocating a stock to one or other sector then it is equitable for both commercial and recreational fishers to ensure the sustainability of the stock through a reduction in the TACC and recreational allowance (along with the implementation of commensurate to effect a reduction in catch – such as bag limit reductions). Equally, commercial and recreational fishers should derive shared benefit from the rebuild of a fishery in terms of the allocation provided to the respective sectors, all other things being equal.

Monitoring allowances

- 105 If the TAC is reduced, the Minister should take reasonable steps to monitor the customary and recreational allowances so as to ensure that the level of harvest is within those allowances. To fail to do so provides a risk that any reduction to those allowances, and also the TAC, could be rendered futile.

Ability to take allocation

- 106 Consideration should also be given to the ability of a sector to take the allowance provided. Impediments may exist that preclude the sector from exercising the full extent of their entitlement. Tools are available in the Act that enhance the ability of different sectors to exercise their right to fish. As well as implementing specific measures in support of allocative decisions, caution should be taken to ensure that a decision does result in a sector being precluded from being able to take the allowance allocated.

Enhancement

- 107 Logically those parties who are responsible for the enhancement of a resource should receive the benefit of the activity. However, the ability to ascertain the increased yield from a fishery as a result of enhancement activities and hence the extent of the allocation provided to the sector is problematic. The development of a fishery resource involves demonstrating through research and/or monitoring that an increase of catch from existing and new fisheries is sustainable. It is generally assumed that the development will occur as a result of a structured deliberate initiative. It may be possible for any one sector to develop a fishery. In such situations, it may be

desirable for the sector that undertakes the development of a fishery to be entitled to be allocated the benefits of that development.

Population trends

- 108 Population trends are reflected in the level of recreational fishing undertaken, both on a national and regional context. The growth of urban centres, in particular Auckland, have a significant impact on particular fisheries. An allowance for the recreational interest and the corresponding management controls for a stock could take into account existing population distribution and growth. Hence where a greater recreational demand arises the Minister is not precluded by any proportional rule from providing an increased allowance to the recreational entitlement subject to weighing all competing demands on the TAC (see *New Zealand Fishing Industry Association (Inc) and Ors v Minister of Fisheries and Ors* (CA82/97, 22/7/97) page 18).

Value

- 109 The Minister is required to allocate the TAC in order to enable people to provide for their social, economic and cultural wellbeing. An assessment of value is important to determine the wellbeing that will flow from any allocation decision. Where one sector values a resource more than other sectors, an allocation of the resource in favour of that sector is likely have a greater positive effect on the well-being of the participants in that sector (than an alternative allocation approach).
- 110 Certain fisheries are considered to be of particular value or importance to fishers. In considering the extent of the recreational and Māori customary allowance it is appropriate to consider the nature of the species and the importance of the species to fishers. For example the recreational sector may place a particularly high value on some species of sports fish. The abundance of a species, and the availability of particular size fish for a specific stakeholder group, may be factors relevant to the Minister's decision.
- 111 MFish notes that it is difficult to quantify the relative value of a resource to each sector. However, when considering value, a broad and inclusive concept of value is appropriate. The value attributed to a resource is not limited solely to financial value but a range of non-market, or qualitative, values.

Impact of overfishing

- 112 Overfishing of a TAC may result in the subsequent reduction of that TAC. Reported overfishing by individual commercial fishers is subject to existing controls under the Act. The consistent overfishing of the TACC or an allowance, which results in the reduction of the TAC, as a general principle, ought to be attributed to the stakeholder group responsible for the overfishing.

Undercatch of allowance

- 113 Stakeholders may elect to exercise their fishing rights in a manner, which results in their allocation in a fishery being undercaught. Voluntary closures and shelving of allocation may be undertaken as a means of improving the abundance of a species and the availability of certain sized fish. Such methods may improve recruitment. In the absence of explicit shares in a fishery, any subsequent increase in the TAC as a result of such methods would be available to all stakeholders. Stakeholders are not immune

from any subsequent decrease in the TAC for sustainability purposes simply on the basis of the previous undercatch of their allowance.

- 114 The Act does explicitly recognise underfishing rights of commercial fishers. Where the person holding annual catch entitlement for a stock (not the owner of the ITQ) undercatches the extent of their entitlement, the person may carry forward the extent of the undercatch to the second fishing year up to a maximum of 10% of the total Annual Catch Entitlement (ACE) they held in the first fishing year. The carry forward of underfishing rights does not apply when the TACC is reduced in the second fishing year (s 67A(2)(b)).

Analysis of impacts

- 115 A variation of the TACC and recreational and customary allowances may have significant social, cultural and economic implications for stakeholders and consequential downstream economic activity. In *New Zealand Fishing Industry Association (Inc) and Ors v Minister of Fisheries and Ors* (CA82/97, 22/7/97), the Court of Appeal noted that where a decision with major economic impact is considered necessary the rationale for that decision should be clearly transparent. Those affected ought to be able to establish that all other reasonable possibilities were analysed and that the decision adopted was the preferable option.
- 116 In reducing a TACC, the Minister should carefully weigh the economic impact of any such action on individual quota owners, those fishers dependent on obtaining annual catch entitlement, and on the QMS generally. However, the reduction of the TACC is not rendered unlawful simply on the basis that the decision adversely impacts the property right inherent in the QMS. In the context of fisheries legislation, a property right constitutes a right to harvest, which is subject to the Minister's statutory powers. Accordingly, MFish considers that financial security of a property right is a valid but not irrefutable consideration in the context of the Minister's TAC/allocative decisions.
- 117 The actual financial costs associated with allocative decisions are to be assessed according to the nature of the fishery. Downstream impacts may result as a consequence of allocative decisions made in respect of both recreational and commercial stakeholders. In addition to the commercial harvesting and processing sector a significant number of service industries are linked to the fishing industry, including charter operators, sale of fishing gear, repair and transport related services. Decisions may also impact on particular communities where the fishing and fishing related services provide a significant contribution to a local economy.
- 118 A cost benefit analysis is designed to act as a tool for deriving the most efficient and productive solution. In itself such an analysis is not intended to impose a barrier to implementing measures considered necessary for fisheries management purposes. In many instances MFish does not have access to the information necessary for a detailed cost benefit analysis to be undertaken. Invariably it is the stakeholders concerned who hold the relevant information. MFish requests that stakeholders provide relevant information in the course of their submissions to the Minister on management proposals. MFish endeavours to undertake a cost benefit analysis, to the extent possible with the available information, where there is likely to be a significant impact for a proposed decision

All other fishing-related mortality

- 119 An allowance can be made for any mortality to a stock that results from fishing. This includes illegal catch, discards and incidental mortality from fishing gear. Often, little quantitative information is available to assess the level of fishing-related mortality, although inferences can be drawn from the impact associated with a particular method, or information from similar stocks or species.
- 120 Where quantitative estimates of other sources of fishing-related mortality are available, this is used as the basis for determining the allowance. If no estimates are available, but other sources of mortality are known to occur based on information from similar stocks or methods, then MFish generally recommends a nominal allowance. If there is no known mortality, then no allowance is made.
- 121 Where it is possible to determine the fishing-related mortality caused by a sector group (for example the incidental mortality related to a specific type of fishing gear used by a particular sector) then the fishing-related mortality attributable to that sector should be deducted from the allowance for that sector. Where this is not possible an estimate of other sources of fishing related mortality should be deducted from the TAC.

Section Two

Final Advice Papers

FINAL ADVICE PAPER:

SOUTHERN BLUE WHITING 6B (SBW 6B)

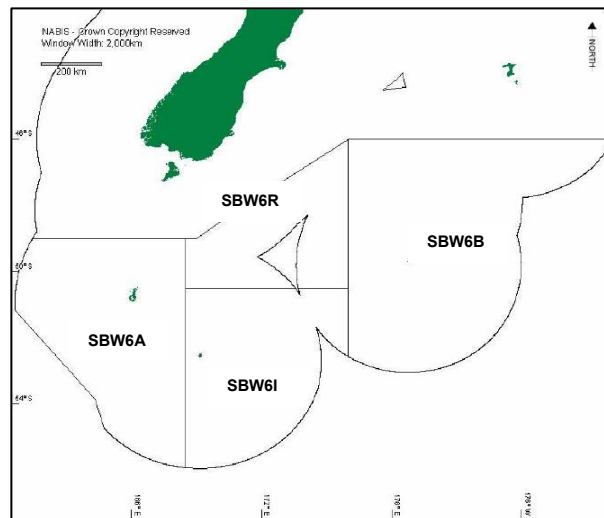


Figure 1. Southern blue whiting quota management areas

Executive Summary

- 1 The Ministry of Fisheries (MFish) recommends that you increase the Total Allowable Catch (TAC) for SBW 6B to 15,000 tonnes for the 2009-10 fishing year, with a Total Allowable Commercial Catch (TACC) of 14,700 tonnes and an allowance of 300 tonnes for other sources of fishing related mortality.
- 2 The results of the 2007 acoustic survey showed a large increase in biomass and this was supported by the 2008 acoustic survey. Estimates derived directly from the 2007 and 2008 survey data indicate a biomass 10 times higher than that seen in the most recent *Tangaroa* survey in 2001, and 6-7 times higher than the previous Industry survey in 2006. The results of both surveys were presented to the middle depths fishery assessment working group (FAWG) and it was accepted that the estimated biomass was representative of the stock size. It appears that the increase in stock size is due to a very strong, slow-growing 2002 year class.
- 3 Yield estimates in the order of 13,500 – 22,000 tonnes were determined by the FAWG based on applying a fishing mortality rate of 0.2 to conservative estimates of biomass derived directly from the acoustic survey. The fishing mortality rate of 0.2 is equal to the estimated natural mortality rate which is considered to be an analytical proxy for F_{MSY} , the fishing mortality rate that if applied constantly would result in the maximum sustainable yield.
- 4 While Industry is encouraged by the state of the fishery it prefers a measured approach to harvesting the 2002 year class. Industry supports a TAC of 15,000 tonnes and a TACC of 14,700 tonnes consistent with Option 2 in the IPP.
- 5 Forest & Bird did not comment on the sustainability of the SBW 6B stock. However, it supports retention of the status quo (Option 1 in the IPP) on the basis that it best

meets obligations under the Act in relation to managing the effects of fishing on New Zealand fur seal and sea lion populations.

Recommended option

- 6 MFish recommends that you implement IPP Option 2 and:
- i) Increase the TAC for SBW 6B from 10,000 tonnes to 15,000 tonnes for the 2009-10 fishing year; and
 - ii) Set a TACC for SBW 6B at 14,700 tonnes; and
 - iii) Set an allowance for other sources of fishing related mortality of 300 tonnes.

Consultation

- 7 Your decision whether or not to adjust the TAC for SBW 6B is a decision under section 13(2)-(4) of the Fisheries Act 1996 (the Act) and therefore the consultation requirements of section 12 apply. Further, in respect of your decision whether or not to adjust the TACC for SBW 6B, the consultation requirements set out in section 21(2) apply.
- 8 Consultation on the IPP was undertaken with such persons or organisations 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.

Submissions Received

- 9 Written submissions regarding this proposal were received from:
- Aurora Fisheries Limited (Aurora)
 - Deepwater Group Limited (DWG)
 - New Zealand Seafood Industry Council Limited (SeaFIC)
 - Royal Forest and Bird Protection Society Incorporated (Forest & Bird)
 - Sanford Limited (Sanford)
- 10 All four Industry submissions (Aurora, DWG, SeaFIC and Sanford) supported the TAC, TACC and allowances proposed under Option 2 in the IPP.
- 11 The Deepwater Group Limited (DWG) shareholders collectively own 88.73% of SBW 6B quota. Of these, the owners of 82.08% support IPP Option 2. DWG advised that there were no DWG shareholders in opposition to this position.
- 12 Forest & Bird support retaining the status quo (Option 1) on the basis that it best meets obligations under the Act in relation to managing the effects of fishing on New Zealand fur seal and sea lion populations. MFish considers that increasing the SBW 6B TAC will not create an adverse risk to the fur seal population. The TAC was increased last season resulting in additional fishing effort but the rate of fur seal captures did not increase. There does not appear to be a direct correlation

between fishing effort and fur seal captures although interactions may increase with an increase in fishing effort. For this reason MFish is satisfied that Option 2 best meets your legal obligations with respect to providing for utilisation while addressing adverse environmental effects. Further information on the impact of a SBW 6B TAC increase on marine mammals is discussed in more detail later in this paper.

Rationale for management options

- 13 Background on the biological characteristics of southern blue whiting and the history of the SBW 6B fishery is provided in Appendix 2.

Acoustic surveys

- 14 From 1993 - 2001 the primary input into the stock assessment model was the acoustic surveys undertaken by the *RV Tangaroa*. Surveys of the Bounty Platform stock were undertaken annually from 1993 to 1995, and then biennially until 2001. After the TAC was decreased to 3,500 tonnes in 2003-04, the *Tangaroa* surveys were discontinued as they were no longer affordable. The report from the fisheries assessment plenary (the Plenary) noted that higher yields would only be available in the future when there was good recruitment – which only occurs sporadically in this fishery.
- 15 A survey undertaken on the Campbell Rise southern blue whiting stock (SBW 6I) in 2003 demonstrated that useful acoustic data could be collected by Industry vessels. Acoustic data has subsequently been collected by an Industry vessel from the SBW 6B stock in 2004, 2006, 2007 and 2008.
- 16 Favourable weather conditions in 2007 resulted in good quality acoustic data from the Industry vessel. The quality of the data, in combination with close adherence to survey protocols, resulted in a successful survey of the principal spawning stock aggregations identified by the commercial fleet. Analysis of the survey data and catch-at-age data indicated a large increase in biomass, likely to have been caused by the recruitment of a strong 2002 year class. Biomass estimates derived directly from the 2007 survey indicate that it was 10 times higher than that seen in the last research survey in 2001, and 6-7 times higher than the 2006 Industry survey.
- 17 Another acoustic survey in 2008 was recommended to support a new stock assessment in 2009. As a result a further acoustic survey was undertaken by Industry in September 2008.
- 18 The main spawning aggregation was surveyed twice over a 9 day period in August 2008 following the same survey protocols used in 2007. Both of these surveys (referred to as ‘snapshots’) were believed to cover the same main spawning aggregation and provided generally good quality acoustic data.

Stock assessment

- 19 The biomass increase identified in the 2007 survey results was accepted by the FAWG in late 2007. In January 2008 an attempt was made at a new stock assessment using the survey data and additional years of catch-at-age data, with preliminary results presented to the FAWG in January 2008. The stock assessment proved problematic, primarily due to difficulties modelling the strong 2002 year class.

- 20 Work to refine the model has been ongoing through 2008 but further work is still required. In late 2008 the FAWG agreed to not progress the stock assessment at this time. The FAWG did however accept that the biomass estimated from the 2008 acoustic survey was representative of stock size. This conclusion was supported by the catch-at-age data which shows that catch is now dominated by the 2002 year class which provided approximately 80% of the catch by number in 2007. The catch from the vessel carrying out the acoustic survey in 2008 was also dominated by this age class. The catch-at-age data also indicate that this year class is slow-growing which is consistent with the low growth rate seen in the 1991 year class in SBW 6I which was also strong.
- 21 MFish considers that there is little risk to the sustainability of the SBW 6B stock in the short term from continuing to manage this fishery in the absence of a formal stock assessment. The risk is further mitigated by Industry favouring a conservative approach to exploiting this fishery as discussed further below.

Yield estimates

- 22 SBW 6B has been managed under a constant fishing mortality strategy with the TAC based on an estimate of the current annual yield (CAY). CAY is the one-year catch calculated by applying a constant fishing mortality rate, or exploitation rate, to an estimate of the vulnerable biomass. The maximum average yield (MAY) is the average of the CAYs over time and is used as an analytical proxy for the maximum sustainable yield (MSY) in SBW 6B.
- 23 As noted above, a model based stock assessment cannot be completed for SBW 6B at this time. However the FAWG agreed that for the 2009-10 fishing year it is appropriate to use the same approach as taken in 2008. This approach took into account sampling uncertainties in the acoustic estimates¹ and uncertainty in the acoustic target strength of southern blue whiting² to determine a conservative estimate of the current biomass.
- 24 Both the 2008 snapshots were considered to have sampled the main spawning aggregation. Snapshot 1 was considered to have encompassed the entire aggregation. However there is some evidence of fish outside the bounds of snapshot 2 and this snapshot may underestimate biomass. The FAWG agreed that snapshot 1 was likely to best estimate biomass and that an average of the two snapshots was likely to represent a conservative biomass estimate. The use of snapshot 2 alone however was likely to underestimate current biomass. Consequently a range with a biomass estimate derived from snapshot 1 as an upper-bound, and an estimate using the average of the two snapshots as a lower bound has been used to derive management options.
- 25 Two methods have been considered:
- Method A: Using the lower 10th percentile bound of the survey estimate and a mean target strength returned a vulnerable biomass estimate of 110,000 tonnes if snapshot one is used, and 83,000 tonnes if the mean of both snapshots is used.

¹ The lower 10 percentile bound of the 2007 acoustic estimate was used

² The lower bound of the estimated ± 3 dB uncertainty in target strength was used

Method B: A vulnerable biomass estimate based on the lower target strength multiplier using the mean acoustic estimate returned a value of 105,000 tonnes if snapshot one is used, and 68,000 tonnes if the mean of both snapshots is used.

- 26 F_{MSY} is the fishing mortality limit that, if applied constantly, would result in the maximum sustainable yield. A common method of estimating F_{MSY} , and the method used in SBW 6B, is to assume it is equal to the natural mortality rate (M). $F=M$ is considered a conservative proxy for F_{MSY} . For southern blue whiting M is estimated to be 0.2.
- 27 CAY estimates based on the estimated vulnerable biomass and F_{MSY} are in the range of 16,500 to 22,000 tonnes for method A and 13,500 to 21,000 for method B. The FAWG agreed that if the TAC was based on these conservative yield estimates, the risk of the biomass dropping below 20%B₀ in 2009 would be negligible.³
- 28 Quota owners support increasing the TAC to a level of 15,000 tonnes. Part of the reason for Industry not seeking a larger increase at this time is recognition that, as southern blue whiting can live for up to 25 years, the large 2002 year class will remain available to fishers over a number of years. There is likely to be an economic benefit in taking a measured approach to harvesting this year class as Industry has indicated that larger fish receive a price premium when landed dressed. As the 2002 year class is slow growing and dominates the catch, greater value may be realised by letting the fish grow, thereby allowing larger fish to be harvested in future years.

Assessment of Management Options

Total Allowable Catch

Setting the TAC (s 13)

- 29 The TAC is set under section 13 of the Fisheries Act 1996 (the Act). The status of the stock in relation to the biomass that provides maximum sustainable yield (MSY) determines the appropriate sub-section under which you should alter the TAC.
- 30 The Plenary states that based on the 2005 stock assessment, the unfished biomass (B₀) in SBW 6B is estimated to be 86,000 tonnes. Estimates of B_{MSY} for a medium to high productivity species such as southern blue whiting typically fall in the range of 20-40% of B₀. Taking the upper limit of 40% provides a conservative B_{MSY} estimate of 34,000 tonnes based on the most recent stock assessment.
- 31 Conservative estimates of current biomass put the current stock size at 83,000 to 110,000 tonnes, well above conservative estimates of B_{MSY}. MFish therefore recommends setting the TAC for the stock under section 13(2)(c) of the Act to enable the level of the stock to be altered in a way and a rate that will result in the stock moving towards or above the level that can produce MSY, having regard to the interdependence of stocks.

³ The Plenary uses 20%B₀ as a limit reference point in SBW 6B. Risk to the sustainability of the stock is considered unacceptable if the probability of the stock dropping below the limit reference point exceeds 10%.

- 32 Analysis of the survey data indicates that a TAC of 15,000 tonnes is below most conservative CAY yield estimates derived by applying an F_{MSY} of 0.2 to the estimated vulnerable biomass (range 13,500 to 22,000 t using the combined range of methods A and B discussed above).

Way and rate discussion (s 13(3))

- 33 Under s 13(3) of the Act, you must consider relevant social, cultural and economic considerations in determining an appropriate way and rate to move the stock towards or above MSY.
- 34 As noted, Industry suggests that allowing southern blue whiting in the dominant 2002 year class to grow to a larger size prior to harvest is likely to increase the economic return from the fishery, particularly from the higher valued dressed product. The TAC of 15,000 tonnes proposed under IPP Option 2 represents a conservative catch limit, consistent with economic considerations.
- 35 Rather than increasing the TAC to the maximum likely to be sustainable, MFish recommends proposing a modest increase. Increasing the TAC from 10,000 tonnes to 15,000 tonnes represents an appropriate way and rate to initiate the movement of the stock towards or above a level that can support MSY.

Effects of fishing on any stock and the aquatic environment (s 11(1)(a))

- 36 Section 11(1)(a) of the Act specifies that you may vary the TAC, after taking into account any effects of fishing on any stock and the aquatic environment.

Benthic impact

- 37 There is currently little direct information on the benthic effects of SBW trawling and it is not possible to quantify an acceptable level of benthic impact at this time. However, SBW 6B is fished using mid-water trawls. Mid-water trawl gear is lighter than bottom trawl gear and, although SBW is fished near or on the bottom, the rocky seabed in SBW 6B means that trawls are not fished hard down. The fishery also occurs over a relatively small area that does not change substantially from year to year.
- 38 Relative to other fisheries that are trawled on or near the bottom, SBW 6B is likely to have less benthic impact. Due to the restricted area over which the SBW 6B fishery occurs, MFish does not consider that a TAC increase would substantially increase the risk to benthic habitats resulting from the fishery. Measures to avoid, remedy or mitigate the benthic impact of trawl fisheries generally will be considered through development of a benthic impact standard.

Fish bycatch

- 39 While the total fish bycatch for SBW varies widely between years it is small compared to the targeted SBW catch, comprising about 1% of total greenweight catch based on observed and reported catch. Most of the bycatch that does occur consists of other commercial QMS species, principally ling, and such bycatch must be retained.⁴

⁴ Anderson, O.F. (2004) Fish discards and non-target fish catch in the fisheries for southern blue whiting and oreos. *New Zealand Fisheries Assessment Report 2004*. 40 p.

Marine mammals

- 40 The southern blue whiting fisheries are known to make incidental captures of both New Zealand sea lions and fur seals. No sea lion captures have been recorded from SBW 6B although a number have been taken in SBW 6I in recent years.
- 41 Forest & Bird incorrectly quoted this section of the IPP as stating that sea lions are caught in the SBW 6B fishery and it requests that more detailed information on the interaction of the SBW 6B fishery with New Zealand sea lions is included in the FAP. The Auckland Islands are the main breeding site of the New Zealand sea lion and these islands are a considerable distance from the SBW 6B Quota Management Area (QMA). The SBW fisheries are shown in Figure 1 and it is the SBW 6A QMA that is located around the Auckland Islands. As a consequence captures of New Zealand sea lions are unlikely to occur in SBW 6B and none have been reported or observed to date.
- 42 Observed and reported fur seal captures from SBW 6B are shown in Table 1 along with effort and the percentage of that effort that was observed. Of the southern blue whiting fisheries, fur seal captures are dominated by SBW 6B, likely due to the proximity of this fishery to the large Bounty Island fur seal colony. Both observer coverage and effort in this fishery has varied considerably over the years with typically greater observer coverage in years where greater effort was expended. While it is difficult to determine a trend in the actual number of fur seal captures, an increase in the TACC in SBW 6B may result in an increased number of fur seal captures.

Fishing year	Observed and reported fur seal captures	Total number of tows	Percentage of tows observed
2002-03	6	96	9%
2003-04	0	26	8%
2004-05	28	31	23%
2005-06	28	96	54%
2006-07	51	94	87%
2007-08	20	200	49%

Table 1. Observed and reported fur seal captures, effort and percentage of effort observed in SBW 6B

- 43 In a joint briefing to Ministers in 2007, MFish and the Department of Conservation (DOC) agreed that vessels operating in the SBW fisheries would be requested to follow the 'Operating Procedure for Mitigating Marine Mammal Incidental Catch' (MMOP) developed by the Deepwater Group Limited (DWG). MFish, through the observer programme, audit vessel performance against these MMOPs. Observers confirm that vessels operating in SBW 6B have generally followed the MMOP during the 2008-09 fishing year.
- 44 Forest & Bird consider that vessel reports on marine mammal captures are biased and should be treated with caution. It supports increased observer coverage to elicit enough information to better determine the impact of the fishery on marine mammal populations. The table above shows that there is already considerable observer coverage in this fishery. It also shows that, although the effort expended in the fishery following the TAC increase last year increased dramatically, the number of observed and reported fur seal captures decreased, suggesting that efforts to reinforce the use of

the MMOP in this fishery maybe having a positive influence on reducing the number of fur seal interactions, although a longer time series will be necessary to confirm this trend.

- 45 MFish and DOC will continue to monitor marine mammal captures in this fishery. MFish considers that existing arrangements are sufficient to monitor and manage marine mammal interactions at this time.

Seabirds

- 46 The southern blue whiting fisheries are known to make incidental captures of various seabirds, although based on observer reports this number is low. Two seabird captures (one Grey Petrel and one Salvin's Albatross) were reported in SBW 6B in the 2008-09 fishing year.
- 47 Seabird mitigation measures are currently in place across the deepwater and middle-depths fleet. All vessels fishing in SBW 6B have an operational Vessel Management Plan (VMP) which specifies the devices and procedures, including offal management procedures, used by each vessel to mitigate seabird interactions. MFish, through the observer programme, audit vessel performance against these VMPs.
- 48 No additional measures are proposed at this time.

Trophic linkages

- 49 Southern blue whiting are prey to a range of seabirds, pinnipeds, and larger demersal finfish species in the area. Juvenile SBW (age 4 to 6 months) are known to form a major part of the diet of seabirds such as penguins and albatrosses. The nature and extent of any existing or future effects of southern blue whiting harvesting on the availability of southern blue whiting as food for prey species is not known. No action is proposed at this time.

TACC and allowances

Customary and recreational allowance

- 50 There is no known recreational or customary Māori take of southern blue whiting. MFish considers that you need not provide an allowance for recreational or customary catch within the TAC for SBW 6B.

Other sources of fishing related mortality

- 51 NIWA have used trawl catch and discard data from the MFish Observer Programme and commercial catch-effort data for the period 1990 to 2002 to estimate discard levels in the southern blue whiting target fisheries.⁵ For this period total annual discard estimates (including estimates of fish lost from the net at the surface) ranged between 0.4% and 2.0% of the estimated southern blue whiting catch for all southern blue whiting fisheries.
- 52 MFish proposes an allowance for other sources of fishing related mortality at a level of 2% of the proposed TAC. This equates to 300 tonnes at a TAC of 15,000 tonnes.

⁵ Anderson, O.F. (2004) Fish discards and non-target fish catch in the fisheries for southern blue whiting and oreos. *New Zealand Fisheries Assessment Report 2004*. 40 p.

Total allowable commercial catch

53 MFish recommends that you set a TACC of 14,700 tonnes.

Other Management Controls

Deemed values

54 Up to the 2008-09 fishing year, the catch had exceeded the TACC in SBW 6B in 4 of the previous 5 seasons. Accordingly the deemed value regime for this fishery was reviewed in 2008 and was changed to increase the annual rate, and to introduce a differential deemed value at 102% of available annual catch entitlement (ACE), for the start of the 2008-09 fishing year.

55 Catch in 2008-09 was 100.6% of the TACC. It is not proposed to vary either the annual or differential deemed value rates at this time. However MFish is advising in a separate deemed value paper that you add a backstop of a high deemed value rate for catch in excess of 150% of the available ACE. This is intended to defend the TACC if economic conditions change such that fishing at the annual or differential rate provides an economic return.

Observer coverage and catch sampling

56 Observer coverage of the southern blue whiting fisheries for the 2009-10 fishing year has been set at 226 days. The short time period of the SBW fisheries means that there is little need to increase observer coverage or the collection of catch-at-age data following a TACC increase. All vessels participating in the SBW 6B fishery are on the fishing grounds at the same time and are extracting fish from the same aggregations. Consequently, sampling from one or two vessels is typically sufficient.

Compliance implications

57 Offences that have occurred in SBW fisheries include misreporting of Quota Management Area (QMA) and dumping. An increase in SBW 6B ACE may provide an increased opportunity for fishers involved in other southern blue whiting fisheries to area misreport catch as coming from SBW 6B. However the large biomass of southern blue whiting available in SBW 6B may decrease the incentive to area misreport – if good catch rates are available in SBW 6B it may reduce the likelihood that fishers will go elsewhere to catch southern blue whiting and report it against SBW 6B ACE. An increase in ACE should reduce incentives for high-grading as the incentive to maximise the value of a limited ACE would be reduced.

APPENDIX 1.

Statutory Considerations

58 In forming the management options the following statutory considerations under the Act have been taken into account.

a) **Section 8. Purpose:** The purpose of the Act is to provide for the utilisation of fisheries resources while ensuring sustainability. The proposed TAC allows for increased utilisation in response to an increase in biomass due to the strong 2002 year class, whilst ensuring sustainability.

b) **Section 13. Total allowable catch:**

Section 13(2): The recommended TAC is based on section 13(2)(c) whereby you set a TAC that enables the level of any stock whose current level is above that which can produce the maximum sustainable yield to be altered in a way and at a rate that will result in the stock moving towards or above a level that can produce the maximum sustainable yield, having regard to the independence of stocks.

The SBW 6B stock is considered likely to be above B_{MSY} and the proposed TAC is considered likely to move the stock towards or above the biomass that can produce the maximum sustainable yield. While interactions between species have been identified⁶ there is no evidence that the interdependence of stocks is of a significant magnitude to impact on the setting of the TAC.

Section 13(3): You must also have regard to relevant social, cultural and economic factors when considering the way and rate at which the stock is moved towards or above B_{MSY} . This is discussed in the body of the paper under the assessment of management options which concludes that the recommended TAC increase is likely to have positive social and economic outcomes.

c) **Section 9. Environmental principles:**

Section 9(a) and (b): There is relatively little bycatch in SBW 6B and species that are caught are dominated by QMS species - principally ling. Marine mammal capture in SBW 6B has been discussed under the assessment of management options section in the body of the paper. There is no evidence that interactions are of significant magnitude to impact on associated and dependent species, or on biological diversity.

Section 9(c): No habitats of particular significance for fisheries management have been identified in SBW 6B.

d) **Section 5 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, utilisation of fishstocks and maintaining biodiversity). MFish considers that issues arising under international obligations and the provisions of the Treaty of

⁶ Anderson, O.F. (2004) Fish discards and non-target fish catch in the fisheries for southern blue whiting and oreos. *New Zealand Fisheries Assessment Report 2004*. 40 p.

Waitangi (Fisheries Claims) Settlement Act 1992 are adequately addressed in the management options for this stock.

e) **Section 11 Sustainability measures:**

Section 11(1)(a): You may vary the TAC, after taking into account any effects of fishing on any stock and the aquatic environment. This has been discussed under the assessment of management options section in the body of the paper. No information additional to that discussed elsewhere in the paper has been considered about any effects of fishing on any stock or on the aquatic environment.

Section 11(1)(b): You may vary the TAC, after taking into account any existing controls under the Act that apply to the stock. All existing controls under the Act that apply to SBW 6B have been taken into account in considering appropriate sustainability measures for this stock. Such controls include the existing TAC/TACC, the deemed value regime and scientific observer coverage.

Section 11(1)(c): You may vary the TAC, after taking into account the natural variability of the stock. Southern blue whiting biomass has increased significantly as a result of the strong 2002 year class. The significance of this variability was discussed at length in both the rationale for management options and the assessment of management options sections in the body of the paper.

Sections 11(2)(a) and (b): Before varying the TAC for SBW 6B, you shall have regard to any provisions of any regional policy statement, regional plan or proposed regional plan under the Resource Management Act 1991 and any management strategy or management plan under the Conservation Act 1987 that apply to the coastal marine area and that you consider are relevant. MFish is not aware of any such provisions that should be taken into account for SBW 6B.

Section 11(2)(c): Before varying the TAC for SBW 6B, you shall have regard to sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000 that apply to the coastal marine area and you consider relevant. The distribution of southern blue whiting in the SBW 6B QMA does not intersect with the Park boundaries.

Section 11(2A)(b): Before varying the TAC for SBW 6B, you must take account of any relevant fisheries plans approved under part III of the Act. A fisheries plan incorporating SBW 6B is proposed for development. However, at present, no such plan has been finalised or approved.

Sections 11(2A)(a) and (c): Before varying the TAC for SBW 6B, you must take into account any conservation or fisheries service, and any decisions not to require such services. There are no conservation services in place specific to SBW 6B. Fisheries services, including stock assessment research, research into the effects of fishing on the aquatic environment and enforcement of management measures, have been considered in developing the TAC options for SBW 6B.

f) **Section 21. Matters to be taken into account in setting or varying any TACC:** Before varying the TACC for SBW 6B, you shall have regard to non-commercial Māori customary and recreational fishing interests in that stock,

and all other sources of fishing-related mortality caused by fishing. There is no known customary Māori or recreational interest in SBW 6B and an allowance has been proposed under option 2 for other sources of fishing-related mortality.

Section 21(4): This section requires that you take into account any mātaihai reserve or closure/restriction under s 186A to facilitate customary fishing when allowing for customary Māori interests. There are no mātaihai reserves in SBW 6B. No area has been closed or fishing method restricted (that affects the fishery within SBW 6B) under the customary fishing provisions of the Act.

Section 21(5): This section requires that you take into account any regulations that prohibit or restrict fishing made under s 311, when setting allowances for recreational interests. No restrictions under s 311 have been placed on fishing in any area within SBW 6B.

- g) **Section 10:** The information principles in section 10 require that decisions be based on the best available information, taking into account any uncertainty in that information, and applying caution when information is uncertain, unreliable, or inadequate. On balance MFish considers that the options provided are derived from the best available information and cover an appropriate range of caution in response to the uncertainty in that information.

APPENDIX 2.

SBW background

- 59 Southern blue whiting is a schooling species generally confined to sub-Antarctic waters over depths of 250–600 m. Although dispersed for much of the year, during spawning southern blue whiting form aggregations that are the focus of the commercial fishery.
- 60 Four spawning areas have been identified; Bounty Platform (SBW 6B), Pukaki Rise (SBW 6R), Auckland Islands Shelf (SBW 6A), and Campbell Island Rise (SBW 6I). Spawning on Bounty Platform begins in mid-August and finishes by mid-September. Spawning begins 3–4 weeks later in the other areas, finishing in late September/early October.
- 61 Southern blue whiting is a productive species with relatively fast growth, early maturity and can live to a maximum age of 25 years. The age and length at maturity (i.e. when fish are first available to the fishery) varies between areas and between years although typically males and females mature at ages 3 or 4. Recruitment can vary markedly between years and give rise to pronounced changes in stock size. For example the exceptionally strong 1991 year class in SBW 6I increased the biomass of fish aged 4+ from 29,000 t in 1994 to 131,000 t in 1995. Such was the strength of the 1991 year class that in 2007 (i.e.16 years later) it was still providing about eight percent of the catch by number.
- 62 Catch in SBW 6B has fluctuated widely both prior to and following introduction to the quota management system (QMS) in 2000.
- 63 The limited duration of the southern blue whiting season, coupled with long distances between fishing areas and significant search times to locate fish, works against the ability of Industry to fish effectively in all four SBW 6 Quota Management Areas (QMAs) and may account for some of the annual catch variation. Timing of this fishery may also contribute to the observed catch variation. Vessels engaged in this fishery typically steam to the grounds after the completion of the West Coast South Island (WCSI) hoki fishery. Hoki is a more lucrative fishery than southern blue whiting so vessels seek to maximise their hoki catch. Of the SBW 6 fisheries, spawning occurs first in SBW 6B and consequently effort expended in SBW 6B is most affected by the timing of the hoki fishery. In years where the period of the WCSI hoki fishery runs into the spawning period of SBW 6B, vessels may have limited opportunity to participate in that fishery, leading to low catches.
- 64 In the last six fishing years, SBW 6B catch has remained relatively close to the TACC. Significant reductions in the HOK 1 TACC since 2004-05 may have allowed for a more consistent period of time on the SBW 6B grounds and better integration of this fishery into the catch plans of the middle depths fleet.
- 65 Up to 2004-05 almost all SBW 6B catch was landed as surimi. In more recent years the amount landed dressed has increased to approximately half of the total landings. Although still a relatively low value fishery, the value has increased in recent years as dressed product typically commands a price premium over surimi.

REVIEW OF DEEMED VALUE RATES FOR SELECTED FISH STOCKS FOR THE APRIL 2009 SUSTAINABILITY ROUND: FINAL ADVICE PAPER

Purpose

66 This paper sets out the Ministry of Fisheries (MFish) recommendations of the deemed value rates for selected fish stocks for the 2009-10 fishing season (for the fishing year commencing 1 April 2009). To identify stocks where the desired incentives for fishers to acquire ACE to balance against their catches may be absent, MFish uses the process outlined in the deemed value standard.

Executive summary

67 Under s 75 (1) of the Act you are required to set interim and annual deemed value rates for each quota management stock. Section 75 (2)(a) requires the Minister, when setting deemed value rates, to take into account the need to provide an incentive for every commercial fisher to acquire and hold sufficient annual catch entitlement (ACE) that is not less than the total catch of that stock taken by the commercial fisher. Section 75 (2)(b) sets out the factors the Minister may have regard to when setting deemed values. These factors from s 75 (2)(a) and 75 (2)(b) form the basis of the information sheets that have been produced for all the stocks under review. An outline of other relevant provisions of the Fisheries Act is provided at the end of this paper.

68 The deemed value standard (the standard) has been used to review the appropriateness of the incentives under the current deemed value rates as part of this sustainability round.

69 The standard, which was developed by MFish in 2007, details a set of criteria which MFish uses to determine whether a fish stock should be considered for a deemed value review because inappropriate incentives to balance catch against ACE may exist. A summary of this standard can be found in Appendix 2. The standard provides guidance but you are not bound by it and all deemed value decisions are made under the s 75 of the Act.

70 Table 1 details the stocks that met one or more of these criteria and therefore were eligible for a review. It also includes the recommended deemed value changes.

Table 1: Stocks that met the review criteria set out in the Deemed Value Standard

Species Name	Fish Stock Reviewed	Summary of Recommended deemed value changes		
		Annual	Interim	Differential
Sea Cucumber	SCC1A, SCC1B & SCC7A	Increased to \$40.00 per kg	Increased to \$20.00 per kg	Adjust to match new annual deemed value
Sea Cucumber	SCC3	Increased to \$2.00 per kg	Increased to \$1.50 per kg	Adjust to match new annual deemed value
Sea Cucumber	SCC2A, SCC2B, SCC4, SCC5A, SCC5B, SCC6, SCC7B, SCC7D, SCC8, SCC9 & SCC10	Increased to \$40.00 per kg	Increased to \$20.00 per kg	Adjust to match new annual deemed value
Frilled Venus Shell (Surf Clam)	All BYA stocks	No change	No change	Introduce differential deemed value rate
Ringed Dosinia (Surf Clam)	All DAN stocks	No change	No change	Introduce differential deemed value rate
Silky Dosinia (Surf Clam)	All DSU stocks	No change	No change	Introduce differential deemed value rate
Horse Mussel	All HOR stocks	Increased to \$0.12 per kg	Increased to \$0.06 per kg	Introduce differential deemed value rate
Trough Shell (Surf Clam)	All MDI stocks	No change	No change	Introduce differential deemed value rate
Large Trough Shell (Surf Clam)	All MMI stocks	No change	Increased to \$0.96 per kg	Introduce differential deemed value rate
Deepwater Tuatua (Surf Clam)	All PDO stocks	No change	No change	Introduce differential deemed value rate
Triangle Shell (Surf Clam)	All SAE stocks	No change	No change	Introduce differential deemed value rate

71 In addition, stocks that are being considered for a total allowable catch (TAC) review as part of the April 2009 sustainability round are also included in this review process. These stocks are listed in Table 2 below.

Table 2: Stocks that are being considered for a TAC adjustment and therefore will also require a review of their deemed value rates

Species Name	Fish Stock Reviewed	Summary of Recommended deemed value changes		
		Annual	Interim	Differential
Spiny (Red) Rock Lobster	All CRA stocks	No change	No change	No change
Southern Blue Whiting	SBW6A, SBW6B, SBW6I & SBW6R	No change	No change	Adjust differential deemed value rates

72 All stocks in Tables 1 and 2 were considered at the deemed value review group meeting held Friday 5 December 2008. If the review group considered that a deemed value adjustment was appropriate, a range of information sources (see Appendix 3) was then used to propose a new deemed value rate. Individual assessments for each stock are set out in this paper.

73 The proposals were then put out for consultation. A range of views on the proposed deemed value changes were received from stakeholders. MFish has taken these views into consideration and where appropriate has incorporated them into the recommended deemed value rates for your consideration.

74 You are not limited to choosing the deemed value rates proposed in this paper; rather you can set the deemed value rates at any level that you consider will best meet your obligations under the Act. You can also choose to leave the deemed value rates

unchanged provided you are satisfied that this meets your statutory obligations, although MFish considers the proposed adjustments to the deemed value rates for the stocks listed in this advice paper are appropriate at this time.

Submissions

75 Submissions were received from the following stakeholders:

- Ocean Fisheries Limited (Ocean)
- Seafood Industry Council (SeaFIC)
- Southern Seafood Limited (Southern Seafood)

76 While all submissions relate to specific stocks, the SeaFIC submission also commented on broader issues relating to the deemed value review process.

Background

77 The purpose of the deemed value framework is to provide an incentive for fishers to acquire sufficient ACE to balance against catch. MFish considers that the objectives of the catch balancing regime are to ensure that:

- a) Catch is harvested, landed and balanced with ACE;
- b) There are no significant deemed value payments when ACE is left unused at the end of the fishing year; and

78 The catch balancing regime is a key fisheries management tool contributing to both sustainability and utilisation objectives. The sustainability objectives are achieved when deemed value rates encourage fishers to balance catch with available ACE and in so doing constrain harvesting to the total allowable commercial catch (TACC). Incorrectly set deemed values have led to catches in excess of TACC in some fisheries in the past, which may have sustainability implications.

79 Utilisation objectives are achieved by providing flexibility for commercial operators to manage unexpected and small overruns in ACE holdings by allowing periodic rather than continuous balancing. In the long term, the sustainability implications that may result from overfishing could result in TACC reductions, which also impact on utilisation objectives.

Rationale for management options

80 Under s 75(1) of the Act you are required to set interim and annual deemed value rates for each quota management stock. Section 75 (2)(a) requires the Minister, when setting deemed value rates, to take into account the need to provide an incentive for every commercial fisher to acquire and hold sufficient ACE that is not less than the total catch of that stock taken by the commercial fisher. Section 75(2)(b) allows the Minister to take into account other discretionary criteria.

81 Section 75(2) says (in full):

- (2) *In setting an interim deemed value rate or an annual deemed value rate, the Minister—*

- (a) *Must take into account the need to provide an incentive for every commercial fisher to acquire or maintain sufficient annual catch entitlement in respect of each fishing year that is not less than the total catch of that stock taken by that commercial fisher; and*
- (b) *May have regard to—*
 - (i) *The desirability of commercial fishers landing catch for which they do not have annual catch entitlement; and*
 - (ii) *The market value of the annual catch entitlement for the stock; and*
 - (iii) *The market value of the stock; and*
 - (iv) *The economic benefits obtained by the most efficient commercial fisher, licensed fish receiver, retailer, or any other person from the taking, processing, or sale of the fish, aquatic life, or seaweed, or of any other fish, aquatic life, or seaweed that is commonly taken in association with the fish, aquatic life, or seaweed; and*
 - (v) *The extent to which catch of that stock has exceeded or is likely to exceed the total allowable commercial catch for the stock in any year; and*
 - (vi) *Any other matters that the Minister considers relevant.*

82 The Act requires both annual and interim deemed value rates to be set for all stocks which will take effect on the first day of each fishing year. Prior to 2007, interim deemed value rates were set at 50% of the annual rate. There is a risk that setting interim deemed value rates too low will delay the balancing of catch until the end of the fishing season. This may lead to a race for ACE and insufficient ACE to cover all catch, therefore leading to the TACC being exceeded.

83 While MFish recommends that the interim deemed value rates should remain at 50% of the annual rates for most stocks, MFish recommends higher interim deemed value rates for some of the stocks under review. Details of what percentage of the annual deemed value the interim deemed values have been set at can be found in the analysis of each stock. In some instances it may be appropriate to set the interim rate closer to the annual rate. If fishers were required to pay a higher interim deemed value rate, it may encourage them to obtain ACE to balance their catch more regularly instead of delaying this until the end of the fishing year. MFish proposes that, in situations where more regular balancing is warranted to ensure catch levels do not exceed available ACE, the interim deemed value should be set closer to the annual rate.

84 MFish recommends that you should use differential deemed value rates. Differential deemed values are set under s75(4) which says:

- (4) The Minister may set different annual deemed value rates in respect of the same stock which apply to different levels of catch in excess of annual catch entitlement.

- 85 Differential deemed values have two effects. First, if a commercial fisher decides to fish on deemed values without ACE, then the deemed value rate for the catch increases to the top step on the differential schedule. This provides a very strong incentive for commercial fishers to acquire ACE. Second, if all the ACE is caught by the industry, then the differential deemed value increases as the industry increasingly overcatches the TACC. The result is an increasing economic disincentive to exceed the TACC.
- 86 As part of a flexible approach to setting deemed values, MFish is recommending that differential deemed values are set at a level that will provide a strong incentive for fishers to balance catch with ACE. For some stocks this may mean applying differential deemed values at small percentages of overcatch such as 2% to discourage any fishing on deemed values; for others it may mean applying differential deemed value rates at 20% overcatch to allow some minor over catch.
- 87 MFish's recommendations for differential deemed value rates depend on the stock and the behaviours that MFish considers deemed values ought to manage. The actual rates at which the differentials are set are flexible and are not necessarily based on the annual rate. Instead, they can be set at any financial amount that Minister considers is necessary to provide the appropriate disincentive for fishers to take fish without ACE.
- 88 For each stock in this review interim, annual and differential deemed value rates are proposed at a level that MFish considers will ensure every incentive is provided to fishers to balance catch with ACE.

Process

- 89 The Deemed Value Standard sets out a process for reviewing and adjusting deemed value rates. This process is being followed for the April 2009 sustainability round.
- 90 All quota management system (QMS) stocks with a fishing year beginning 1 April were assessed against the following deemed value criteria as set out in the Deemed Value Standard:
- a) Catch in excess of a TACC.
 - b) Catch in excess of an individual's ACE holdings and deemed values have been invoiced but ACE has remained unused.
 - c) Changes to the port price of a stock (Note: 2008-09 port price is data collected in 2008 that is used for setting 2008-09 levies).
 - d) Direct request from the Seafood Industry Council (SeaFIC) on behalf of quota owners.
 - e) Recent changes to a stock's TACC or the TACC of key bycatch stocks.
 - f) Stock has recently entered the QMS and the initial deemed value rate was set using limited information.
- 91 Following an assessment of the stock's performance against the criteria described above, an analysis spreadsheet ("analysis spreadsheet") was prepared. This analysis spreadsheet details the stock's performance against the criteria described above.

- 92 This information was analysed to determine why deemed value rates for some stocks may not be effective. The analysis spreadsheet described above was used to answer questions such as:
- a) Likely reasons for the TACC overcatch/ACE breaches (where fisher behaviour or stock biology is the major factor).
 - b) An assessment of the bycatch fisheries associated with the stocks under review (to ensure any changes to the target stock deemed value rates do not have an adverse effect on the sustainability of bycatch stocks).
 - c) If there has been significant changes in the structure of quota/ACE holdings for the stocks.
 - d) Likely risk that the deemed value may not provide the appropriate incentive to balance catch with ACE.
 - e) Impact of changes in market price and/or structure for the fish product/species under review.
- 93 In its submission, SeaFIC made extensive comments (paragraphs 13-22) to argue that MFish failed to follow the approved Deemed Value Standard with respect to referring stocks to other Ministry processes for consideration of other management changes, such as TACC changes. For only one stock covered by the FAP, SCC3, were questions raised in submissions over the appropriateness of the TACC. A submission also suggested that having SCC on the Sixth Schedule may be interfering with utilisation of SCC3. These two issues with respect to SCC3 have been referred to appropriate Ministry processes. MFish followed the Deemed Value Standard in developing this advice.
- 94 Information relevant to a deemed value adjustment is summarised in the analysis section for each stock. Information sheets for each stock can be found in Appendix 3.
- 95 All stocks included on the list (Tables 1 and 2) were reviewed by the deemed value review group at a meeting, held on Friday 5 December 2008. The SeaFIC representative was unable to attend the meeting but was consulted separately. At this meeting, each stock was assessed using the information and analysis described above. This assessment determined if a deemed value adjustment was, in the opinion of the review group, appropriate.
- 96 If a deemed value adjustment was considered appropriate, the following information sources were used to determine what the proposed new deemed value rate should be. This information was available to all participants at the deemed value review group meeting:
- a) Port price;
 - b) ACE trading price;
 - c) Export prices as a proxy for market values (where appropriate);
 - d) Bycatch ratios (where appropriate);
 - e) Cost recovery levy rates; and
 - f) Past deemed value payments.

Consultation process

- 97 Section 75A of the Act requires you to consult, if practicable, with persons or organisations that you consider represent classes of persons who have an interest in the stocks under review, including Maori, recreational, commercial and environmental interests. MFish followed its standard consultation process for IPPs in the April 2009 sustainability round. This involved posting all IPPs on MFish's website and alerting stakeholders to this through a letter sent to approximately 350 companies, organisations and individuals.
- 98 In addition to making the IPP publicly available, MFish also consulted with SeaFIC to discuss the proposed deemed value rates.

SeaFIC

- 99 SeaFIC was unable to participate in deemed value review group meeting so they were consulted with directly. MFish has also kept SeaFIC informed of the development of the deemed values rates that are recommended for your consideration in this advice paper.
- 100 In their submission SeaFIC commented that MFish did not meet the timeframes set out in the draft consultation standard when consulting on this deemed value review. The draft consultation standard remains a draft and MFish has not aligned its processes to that standard, MFish will endeavour to adjust processes to the timelines in the draft consultation standard until such time as they are finalised.

Assessment of management options

- 101 This section sets out a summary of the analysis for each stock, an assessment of why a deemed value adjustment is appropriate and recommended deemed value rates for your consideration.
- 102 MFish considers that not all stocks included on the review list required a deemed value adjustment. Details of these stocks are presented at the end of the analysis section.
- 103 MFish advises that for stocks that are subject to a TAC review in this sustainability round, you may need to reconsider the appropriate deemed value rate when you have set the TACC for that stock to ensure consistency of the two decisions. This advice is included in the FAP that recommends the TACC changes
- 104 If significant deeming is occurring in a fishery, this is strong evidence that the incentives are probably not correct and the situation needs to be rectified.
- 105 In this advice, MFish is recommending deemed value rates for the next fishing year so you need to be concerned that the incentives will be correct going ahead. MFish has tried to be proactive in recommending deemed value rates for fisheries where there is potential for problems in the future instead of being reactive and only taking action once problems become apparent in certain fisheries.
- 106 The recommendations are both responding to excessive deeming that has already occurred and also tries to maintain the appropriate incentives going forward.

107 As a general guide to setting deemed value rates under s 75 (2)(a), MFish advises the following actions should be considered to ensure the correct incentives are in place for commercial fishers to acquire or maintain sufficient ACE to cover their catch:

- a) When deemed value rates are below ACE price: Increase deemed value rates to a level between ACE price and landed price to provide the incentive to balance catch with ACE. There are transaction costs associated with finding, buying and registering transfers of ACE. Deemed values should be sufficiently above ACE price, such that fishers would not ordinarily pay the deemed values to avoid those transaction costs.
- b) When deemed value rates are above landed price: Decrease deemed value rates to a level between ACE price and landed price to provide an incentive not to discard fish.
- c) When there are different deemed values rates across QMAs for a species: consider whether less variation in deemed value rates across the QMAs may be appropriate to avoid providing an incentive not to misreport catch, leading to a failure to balance catch with ACE for the correct stock.

108 MFish further advises that an important exception arises with respect to its advice in the previous paragraph that deemed values should generally be set below landed price. That exception arises when:

- a) A species is a bycatch in a multispecies fishery, such as a mixed trawl fishery, and
- b) The catch of that bycatch species constrains the ability of the fishing fleet to capture other target species.

In this circumstance, the bycatch species is said to have a “shadow value” which reflects its value in permitting greater catches of other species in the overall fisheries complex. When the shadow value is high, the ACE value that will constrain catch to the TACC can often exceed the landed value. In this instance, the deemed value will typically need to exceed the landed value.

109 When the ACE price and the deemed values are above the landed value, incentives to discard the species are created. This may be an inevitable result of providing appropriate incentives to acquire ACE to cover catch. In this instance, you may be faced with conflicting considerations with respect to the objectives of 75 (2) (a). On the one hand, if you set the deemed value below the shadow value, there will be an incentive to land fish without acquiring ACE and instead landing against deemed values. On the other hand, if you set the deemed value above price, there will be an incentive to catch fish and then to fail to acquire ACE because the fish are discarded. When this occurs, you may want to consider the factors in 75 (2) (b) in your decision to balance these two factors.

110 Difficult issues may arise in setting deemed values if the same species is landed at dramatically different values. For example, in the present advice, sea cucumbers (SCC) may be worth \$20/kg from a dive fishery and \$3/kg from a trawl fishery due to substantial differences in quality. A deemed value that provides an appropriate incentive to balance catch against ACE per 75 (2) (a) in one fishery is very likely to provide inappropriate incentives in the other fishery. When you face conflicting

concerns with respect to s 75 (2) (a), you may want to consider the factors in 75 (2) (b) in reaching your decision.

111 All but a few species are caught in multiple QMAs. Each QMA has a deemed value set. When the deemed values are significantly different across different QMAs, and particularly when they are different in adjoining QMAs, an incentive to misreport the QMA in which catch occurred in order to use the lower deemed value may be created.

112 Section 75 (2) (a) says that the Minister must take into account the need to provide an incentive to acquire sufficient ACE that is not less than the total catch of **that** stock. When catch is misreported, it is balanced with ACE (or deemed values), from the wrong QMA. MFish is accordingly of the view that incentives to misreport can be considered under 75 (2) (a) and that in appropriate cases such incentives should be minimised as far as possible.

113 Misreporting can also, in MFish's view, be consider as an "any other matter" that may be considered under s 75(2)(b)(vi) since accurate reporting is a core part of the QMS system and the deemed values regime should not provide unnecessary economic incentives for misreporting

114 Arguments are often made in submissions that you should consider whether TACs and/or TACCs are set correctly in your decisions on deemed values. But Priestly J in *Pacific Trawling Limited* said

"[76] The obligations which the Minister has under Part 3 and the TAC and TACC setting mechanisms were not, in my judgment, matters which come into play when the Minister was setting DV rates under s 75.....In my judgment it is not permissible for the Minister, when considering DVs and the s 75(2)(a) requirement, to turn his mind to the possibility that relevant TACs may need revision or have been set faultily."

115 However, the deemed value standard does specify that MFish will, as part of its review process, identify concerns about inappropriate TACCs and refer these for further consideration. One stock was referred for such consideration in the present review.

116 The analysis for each stock follows.

Sea Cucumber: SCC1A, SCC1B and SCC7A

117 Sea cucumber (SCC) was brought into the QMS on 1 April 2004. The initial annual deemed value rate was set low (\$0.10 per kg) because of limited information on actual port price and because sea cucumber is typically a minor bycatch in some inshore trawl and dredge fisheries. It is clear that the deemed value rates were set based on limited information. The landed value of SCC had been reported to be \$20.00 per kg by the major SCC quota owner and exporter. Submissions indicate that divers are paid \$6 to \$10 per kg to land when ACE is provided by the LFR, while ACE value is \$10 to \$13.50 per kg. This indicates a landed value of \$16 to \$23.50 per kg. Because there have been no valid trades, no ACE price information is available for any of the SCC stocks. While price information remains limited, submissions are consistent with this price.

- 118 During the 2007-08 fishing year, SCC7A ACE was over caught by 52%. It is clear that the SCC7A case involved deliberate targeted fishing on deemed values. Deemed values were incurred in SCC1A (\$12), SCC1B (\$105) and SCC7A (\$407). The deemed value payment figures are deceptive as the annual deemed value rate for both SCC1B and SCC7A during the 2007-08 fishing year was \$0.10 per kg. So despite the low total deemed value payments, the amount of SCC1A deemed was 120 kgs, the amount of SCC1B deemed was 1,050 kgs and the amount of SCC7A deemed was 4070 kgs. This amounts to 6% of the SCC1A TACC (2 tonnes), 52.5% of the SCC1B TACC (2 tonnes) and 81.4% of the SCC7A TACC (5 tonnes).
- 119 Fishers can buy SCC ACE from the ACE holders but due to the low deemed value rate they have simply chosen to pay the deemed value instead of acquiring the appropriate ACE to balance their catch. It is clear that the deemed value rates were not providing the appropriate incentives to acquire sufficient ACE. This must be taken into account when setting deemed values under s 75 (2) (a).
- 120 It is important to note that sea cucumber fisheries worldwide have frequently been over exploited to satisfy high demand from Asian markets and that sea cucumber stocks elsewhere have been subject to dramatic collapses. The experience elsewhere suggests that New Zealand should provide strong incentives to remain within TACCs.
- 121 The deemed value rates for SCC1A, SCC1B and SCC7A were reviewed as part of the April 2008 sustainability round. The annual deemed value rates for SCC1B and SCC7A were increased to \$3.00 per kg and the interim deemed value rates were set at \$2.70 per kg. Standard differential deemed value rates were introduced into these fisheries as well. SCC1A had its annual deemed value rates increased to \$0.25 per kg and their interim deemed value rates increased to \$0.20 per kg.
- 122 From meeting with stakeholders in the SCC fisheries it has become clear that SCC1A stakeholders have or are attempting to establish target dive fisheries. SCC taken by divers is high quality and has the highest landed value. MFish is therefore basing its price and cost expectations for SCC1A on those for a dive fishery.
- 123 Both the level of the deeming and price information indicate that fishers lack appropriate incentives to acquire sufficient ACE, which the Minister must take into account when setting deemed values under s 75 (2) (a). The current deemed value rate in SCC1B and SCC7A (\$3.00 per kg) is well below the potential price they can receive for the landed SCC product (\$20.00 per kg). There can be a continuing incentive to fish without ACE. Even at the highest differential deemed value rate (\$6.00 per kg) the incentive to fish without ACE may exist.
- 124 In the IPP, MFish proposed treating the target dive fisheries (SCC1A, SCC1B & SCC7A) as a “high value single stock” and set the deemed value rates at twice market price. This strategy is used in both the paua (PAU) and spiny rock lobster (CRA) fisheries. The target dive fishery for SCC has no bycatch issues. Fishers can take exactly their ACE holdings. Setting the annual deemed value rate at twice landed price provides the correct incentive to match catch with ACE.
- 125 SeaFIC does not support the deemed value rates for SCC1A, SCC1B and SCC7A set out in the IPP. SeaFIC submits that the changes made on 1 April 2008 to the deemed values for SCC1A, SCC1B and SCC7A are sufficiently effective to address the deeming issue.

- 126 SeaFIC submits that the \$20 per kg landed value is incorrect because LFRs (who are ACE holders) pay divers only \$6 to \$10 per kg to land SCC to them and then provide ACE to the divers for free. SeaFIC fails to recognise that the value of ACE, which SeaFIC estimates at \$13.50 per kg, must be added to obtain landed value. Correctly applied, SeaFIC's estimates support a landed price of about \$20 per kg.
- 127 SeaFIC submits that it is inappropriate to treat SCC1A, SCC1B and SCC7A as a high value single stock species as it is caught in these areas by trawlers. SeaFIC submits that trawlers may seek to use the 6th Schedule provisions to return sea cucumbers to the sea where they are expected to survive; there will be catches which cannot be returned to the sea and be expected to survive. SeaFIC submits that LFRs will not pay \$10 per kg for such damaged stock and it is not justifiable to charge a deemed value of, say \$40 per kg, on a worthless catch.
- 128 As part of its planning processes, MFish met with quota owners and divers from SCC1A, SCC1B and SCC7B. That meeting led MFish to conclude that there is support for the twice landed value approach.
- 129 SCC is a 6th Schedule species which means it can be returned to the sea if it is likely to survive. MFish believes that SCC is a fairly robust organism that is likely to survive if it is returned to the sea after being caught in a trawl net.
- 130 There have been suggestions that different deemed value rates be set for SCC depending on whether it is caught in the target dive or bycatch trawl fisheries in the same QMA. This is currently not an option available to you under the Fisheries Act 1996.
- 131 MFish does agree that the presence of both a high value dive fishery and a low value trawl fishery presents challenges. MFish will work with the industry in the fish plan process to define strategies to address these challenges. These strategies could include future deemed value adjustments
- 132 Given the high value of the dive fishery, the low value in the trawl fishery and the availability of the 6th Schedule to manage the fishery for the trawl caught SCC, MFish recommends you approve the following deemed value rates for SCC1A, SCC1B and SCC7A for the 2009-10 season:
- a) Annual deemed value rate to:
 - i) SCC1A: increase from \$0.25 per kg to \$40.00 per kg;
 - ii) SCC1B: increase from \$3.00 per kg to \$40.00 per kg;
 - iii) SCC7A: increase from \$3.00 per kg to \$40.00 per kg;
 - b) Interim deemed value rate to:
 - iv) SCC1A: increase from \$0.20 per kg to \$20.00 per kg;
 - v) SCC1B: increase from \$2.70 per kg to \$20.00 per kg;
 - vi) SCC7A: increase from \$2.70 per kg to \$20.00 per kg;
 - c) Differential deemed value rates adjusted to reflect the proposed new annual deemed value rate, outlined in the table below.

Table 3: Proposed differential deemed value rates for SCC1A, SCC1B & SCC7A

Current differential rates				Proposed differential rates	
Catch in excess of ACE holdings (%)	Current deemed value rate for SCC1A (\$)	Catch in excess of ACE holdings (%)	Current deemed value rate for SCC1B & SCC7A (\$)	Catch in excess of ACE holdings (%)	Proposed deemed value rate for SCC1A, SCC1B & SCC7A (\$)
N/A	Differential deemed values currently do not apply	20	3.60 per kg	20	48.00 per kg
		40	4.20 per kg	40	56.00 per kg
		60	4.80 per kg	60	64.00 per kg
		80	5.40 per kg	80	72.00 per kg
		100	6.00 per kg	100	80.00 per kg

SCC3

- 133 During the 2007-08 fishing year, SCC3 ACE was over caught by 167%. Deemed value payments totalling \$125 were incurred in SCC3. The \$125 figure is deceptive as the annual deemed value rate during the 2007-08 fishing year was \$0.10 per kg. Despite the low total deemed value payment, the amount of SCC3 deemed was 1,250 kgs. This amount is 62.5% of the SCC3 TACC (2 tonnes).
- 134 In the April 2008 sustainability round SCC3 had its annual deemed value rates increased to \$0.25 per kg and its interim deemed value rates increased to \$0.20 per kg. At the time of the April 2008 deemed value review the price information available to MFish for SCC was limited. MFish recommended deemed value rate increases despite limited price data because of concerns of possible fishing on deemed values (which proved well founded).
- 135 Thus far in the 2008-09 fishing year deemed value payment of \$609.40 have been incurred in SCC3. This figure may come down at the end of year balancing but currently 163% of ACE has been caught so some deemed values payments will be incurred.
- 136 It is clear from the level of over catch and deeming in SCC3, that the appropriate incentives to acquire sufficient ACE, which the Minister must take into account when setting deemed values under s 75 (2) (a) are not present in SCC3 because significant deeming has occurred even after the April 2008 change.
- 137 The major quota owner in SCC3 (who owns 80% of the quota) has indicated that they are willing to work with fishers to reach an agreement on using their ACE.
- 138 However, there is an issue about how to treat bycatch SCC fishery in SCC3. SCC is taken as bycatch by inshore trawlers in SCC3. There is currently a small market for SCC in SCC3 through the United Fisheries auction in Christchurch. The SCC caught by the inshore trawlers is lower in quality than the SCC that is taken in the target dive fisheries. There are some indications that if the SCC taken as trawl bycatch is processed correctly (frozen immediately) its value can increase.
- 139 In the IPP, MFish proposed that the same deemed value rate regime for all SCC fisheries. MFish noted that this may create problems in SCC3 as this is a trawl fishery that generates lower commercial value. This would mean that the inshore trawlers who are currently landing some SCC to fill the demand from the United Fisheries auction will have to pay \$40.00 per kg for any of the SCC they land without ACE. At this price they will not make a profit fishing on the deemed value and will likely return all SCC they catch to the sea as SCC is on the 6th Schedule of the Fisheries Act.

The consequence of the proposed change would be that an utilisation opportunity could be lost.

- 140 The proposal in the IPP was based on significant concerns about potential misreporting. Paragraphs 46-48, above, discusses how misreporting is related to the considerations of s 75 (2) (a) and s 75 (2) (b). Misreporting is a much larger potential problem for SCC than for most other species. SCC is highly valuable, can be harvested by individuals in remote locations, and transport of small volumes is easy and potentially very lucrative. Very difficult enforcement problems could be created if deemed value rates vary widely across QMAs. Moreover, the international evidence on the susceptibility of some sea cucumbers species to over fishing suggests that misreporting could raise serious sustainability concerns.
- 141 In providing the initial recommendation for SCC3 in the IPP, MFish tried to balance three issues: loss of utilisation for trawl-caught sea cucumbers in SCC3; incentives to discard; and incentives to misreport. In the IPP, MFish placed greater weight on the misreporting issue for the following two reasons.
- 142 Discarding is less of an issue for SCC because SCC is on the 6th Schedule. Discarding of fish that will survive is not inconsistent with s 75 (2) (a). While MFish lacks information on *Stichopus mollis*, other sea cucumber species are reported to survive even severe damage.
- 143 MFish reasoned that utilisation of trawler-caught SCC3 was possible even under a \$40 deemed value. While trawlers would almost certainly not use deemed values to land SCC3, as they could purchase ACE from quota owners at prices well below deemed values. This happens in other high value species. Although the deemed value for CRA is \$100 per kg, ACE trades at values of \$15 to \$25 per kg. If the only use for SCC ACE in SCC3 is for by-catch in the trawl fishery, then the trawlers and the ACE holders must find mutually acceptable terms for this use.
- 144 Based on information received in submissions, MFish is making different recommendations to you than it proposed in the IPP. MFish has placed less emphasis on the discarding issue and greater emphasis on utilisation of trawl-caught SCC3.
- 145 The change in position reflects a consideration of submissions. Ocean does not support the deemed value rates for SCC3 set out in the IPP. Ocean does not believe that the market for SCC3 is as well developed as the market for SCC in the North Island. Ocean submitted that the deemed value rates set out in the IPP will only result in the all SCC3 being returned to the sea since it is a 6th Schedule species and the local market will be lost.
- 146 SeaFIC does not support the deemed value rates for SCC3 set out in the IPP. SeaFIC submitted that SCC3 is taken as a by-catch of the trawl fishery and only a fraction (less than 10%) of the catch is landed, the remainder is returned to the sea under Schedule 6 provisions. SeaFIC also submitted that the landed SCC3 is sold to a local domestic market and fishers receive between \$2.50 and \$3.00 for sea cucumbers in good condition.
- 147 Southern Seafood submitted that the statement in paragraph 66 of the IPP is incorrect and that they are willing to provide ACE. Southern Seafood also submits that the

value of trawl caught SCC3 is below that of the SCC caught in the target dive fisheries. Southern Seafood also submitted that MFish should reconsider whether SCC is on the 6th Schedule of the Fisheries Act. Southern Seafood did point out that misreporting of dive caught SCC as trawl caught SCC would be easy to detect due to the condition of the SCC.

- 148 Southern Seafood’s submission, in particular, points out that the limited size of the fishery and the clear difference in the condition of dive versus trawl caught product make detection of misreporting more likely. MFish agrees that this observation is directly relevant to how concerns over misreporting should be factored into the decision.
- 149 Therefore, MFish is recommending that the deemed value rate for SCC3 be based on the economic conditions for trawl caught SCC3. However, data for 2008-09 and Southern Seafood’s submission indicates that trawlers do deem even though ACE is available for SCC3. Therefore, the current deemed value rates fail to provide appropriate incentives for commercial fishers to acquire ACE. MFish recommends that the annual deemed value rate be set slightly below the trawl caught SCC landed price.
- 150 SeaFIC and Southern Seafood suggest that the TACC for SCC3 is too low. Southern Seafood also suggested the status of SCC as a 6th schedule species was affecting utilisation. These concerns have been relayed to MFish staff who are responsible for coordinating management of SCC3.
- 151 MFish notes that the deemed value rates for SCC3 may need to be revisited in future deemed value reviews. The deemed value would need to be revisited were the fishery to develop or change significantly. The deemed values may also need to be revisited if evidence of misreporting emerges. MFish hopes that the Southern Shellfish Fish Plan or a co-ordinated industry proposal will guide the setting of the deemed value for this fishery in the future.
- 152 MFish recommends you approve the following deemed value rates for SCC3 for the 2009-10 season:
- a) Annual deemed value rate to increase from \$0.25 per kg to \$2.00 per kg;
 - b) Interim deemed value rate to increase from \$0.20 per kg to \$1.50 per kg;
- 153 MFish is recommends that differential deemed value rates be introduced into SCC3 to further discourage fishing without ACE.
- 154 MFish recommends you approve introducing differential deemed value rates for SCC3 for the 2009-10 season:

Table 4: Proposed differential deemed value rates for SCC3

Current differential rates		Proposed differential rates	
Catch in excess of ACE holdings (%)	Current deemed value rate for SCC3 (\$)	Catch in excess of ACE holdings (%)	Proposed deemed value rate for SCC3 (\$)
N/A	Differential deemed values currently do not apply	20	2.40 per kg
		40	2.80 per kg
		60	3.20 per kg
		80	3.60 per kg
		100	4.00 per kg

SCC2A, SCC2B, SCC4, SCC5A, SCC5B, SCC6, SCC7B, SCC7D, SCC8, SCC9 & SCC10

- 155 There has been little or no utilisation of these SCC stock so there is little or no data to base recommendations upon. In 2007-08, there were very small landings in SCC5B and SCC7D in 2007-08; there were no landings in any of the other areas in this set of QMAs. During the 2007-08 fishing year, deemed values were incurred in SCC5B (<\$1 or <10 kgs), and SCC7D (<\$3 or <30 kgs). These are essentially unutilised stocks at present.
- 156 MFish advises that there are two considerations with respect to s 75 (2) (a). First, if a new dive fishery is developed by a quota owner, incentives will immediately be created for other fishers to land fish against deemed values, instead of acquiring ACE. Second, there may be an incentive for fishers to misreport the QMA of harvest in order to qualify for lower deemed values.
- 157 SCC was brought into the QMS in 2004. These are still developing fisheries, and discovery of new fishing grounds can result in rapid changes in fishing patterns. Experience in SCC1B and SCC7A indicate that if a new area for a dive fishery is discovered, incentives are created for fishers to harvest from those areas using deemed values. The result is catches in excess of ACE, which you must consider under s 75 (2) (a). Further, the experience in SCC1B and SCC7A indicate that very high levels of fishing on deemed values may appear very suddenly. Rather than waiting until the fishing on deemed values has occurred for 1 to 2 years, MFish recommends setting in advance deemed value rates that support appropriate development of these SCC stocks. Given the high potential value of a dive fishery, the most appropriate deemed value rates need to accommodate the development of a dive fishery. MFish proposes that the same deemed values be used in these QMAs as the target dive fisheries in SCC1A, SCC1B and SCC7A. The landed price would essentially be identical; the costs of fishing would also be similar, so the same deemed value rate is appropriate.
- 158 A second consideration is that if the current low deemed values (\$.25 per kg annual) are left, incentives will be created to misreport catch as coming from one of these areas in order to qualify for the low deemed values. MFish believes that misreporting is a consideration under s 75 (2) (a) and can be considered as well under s 75 (2) (b) (see paragraphs 46-48). By setting the deemed value rate in line with other dive fisheries, the incentive to misreport is avoided.
- 159 Using the high deemed value rate will prevent trawlers from using deemed values to land their bycatches. While this discarding could result in concerns under s 75 (2) (a) and s 75 (2) (b), MFish believes that the two considerations above outweigh this potential concern for several reasons. First, nothing prevents trawlers from acquiring ACE from quota owners and thus utilising their bycatches. Second, SCC is on Schedule 6, so trawlers have the option of returning fish that will survive to the ocean. Third, the level of trawl catch is currently very low, so any loss of utilisation will be very small if Schedule 6 is used. This very low level of loss must be compared to the very high potential value of a dive fishery that would be protected.
- 160 If there is evidence that one or more of these fisheries is being developed as a lower-value trawl fishery, MFish would expect to provide you advice to treat such stocks analogously to SCC3.

- 161 In the April 2008 sustainability round these SCC stocks had their annual deemed value rates increased to \$0.25 per kg and their interim deemed value rates increased to \$0.20 per kg. At the time of the April 2008 deemed value review the price information available to MFish for SCC was limited. MFish recommended deemed value rate increases despite limited price data because of concerns of possible fishing on deemed values.
- 162 In the IPP, MFish proposed that a uniform deemed value rates regime for all SCC fisheries be introduced based on strong concerns over misreporting. In its recommendations on SCC3 (above), MFish moved away from its proposal for a uniform deemed value across all QMAs to one that recommended an annual \$40 deemed value for the three dive-oriented QMAs and \$2 for the trawl-oriented SCC3. The advice for these developing fisheries is consistent with the advice in those active fishing areas.
- 163 SeaFIC does not support the deemed value rates for the remaining SCC stocks set out in the IPP. SeaFIC submits that there is no catch at all and very little deeming in these SCC fisheries. SeaFIC submits that the changes are not necessary and the current deemed value rates should be retained.
- 164 MFish believes the approach being recommended in these fisheries best addresses current circumstances. If a trawl bycatch fishery is proven to exist in one of these fisheries or if a development plan by a quota owner in one of these fisheries includes trawl fishing, MFish will consider making a recommendation to change the deemed values rate to match those recommended for SCC3 in a future deemed value review.
- 165 MFish recommends you approve the following deemed value rates for SCC2A, SCC2B, SCC4, SCC5A, SCC5B, SCC6, SCC7B, SCC7D, SCC8, SCC9 and SCC10 for the 2009-10 season:
- a) Annual deemed value rate to:
 - i) SCC2A: increase from \$0.25 per kg to \$40.00 per kg;
 - ii) SCC2B: increase from \$0.25 per kg to \$40.00 per kg;
 - iii) SCC4: increase from \$0.25 per kg to \$40.00 per kg;
 - iv) SCC5A: increase from \$0.25 per kg to \$40.00 per kg;
 - v) SCC5B: increase from \$0.25 per kg to \$40.00 per kg;
 - vi) SCC6: increase from \$0.25 per kg to \$40.00 per kg;
 - vii) SCC7B: increase from \$0.25 per kg to \$40.00 per kg;
 - viii) SCC7D: increase from \$0.25 per kg to \$40.00 per kg;
 - ix) SCC8: increase from \$0.25 per kg to \$40.00 per kg;
 - x) SCC9: increase from \$0.25 per kg to \$40.00 per kg;
 - xi) SCC10: increase from \$0.25 per kg to \$40.00 per kg;
 - b) Interim deemed value rate to:
 - xii) SCC2A: increase from \$0.20 per kg to \$20.00 per kg;
 - xiii) SCC2B: increase from \$0.20 per kg to \$20.00 per kg;

- xiv) SCC4: increase from \$0.20 per kg to \$20.00 per kg;
 - xv) SCC5A: increase from \$0.20 per kg to \$20.00 per kg;
 - xvi) SCC5B: increase from \$0.20 per kg to \$20.00 per kg;
 - xvii) SCC6: increase from \$0.20 per kg to \$20.00 per kg;
 - xviii) SCC7B: increase from \$0.20 per kg to \$20.00 per kg;
 - xix) SCC7D: increase from \$0.20 per kg to \$20.00 per kg;
 - xx) SCC8: increase from \$0.20 per kg to \$20.00 per kg;
 - xxi) SCC9: increase from \$0.20 per kg to \$20.00 per kg;
 - xxii) SCC10: increase from \$0.20 per kg to \$20.00 per kg;
- c) Differential deemed value rates adjusted to reflect the proposed new annual deemed value rate, outlined in the table below.

Table 5: Proposed differential deemed value rates for SCC2A, SCC2B, SCC4, SCC5A, SCC5B, SCC6, SCC7B, SCC7D, SCC8, SCC9 & SCC10

Current differential rates		Proposed differential rates	
Catch in excess of ACE holdings (%)	Current deemed value rate for SCC2A, SCC2B, SCC4, SCC5A, SCC5B, SCC6, SCC7B, SCC7D, SCC8, SCC9 & SCC10 (\$)	Catch in excess of ACE holdings (%)	Proposed deemed value rate for SCC2A, SCC2B, SCC4, SCC5A, SCC5B, SCC6, SCC7B, SCC7D, SCC8, SCC9 & SCC10 (\$)
N/A	Differential deemed values currently do not apply	20	48.00 per kg
		40	56.00 per kg
		60	64.00 per kg
		80	72.00 per kg
		100	80.00 per kg

Surf Clams: All BYA, DAN, DSU, MDI, MMI, PDO and SAE stocks

- 166 The comments in this section apply to all surf clam stocks. The surf clam fishery is a low knowledge fishery and the current TACCs were set on a conservative basis. It is not known what effect any over fishing would have on the sustainability of the stocks. MFish notes to date that there has been no catch in excess of ACE in any surf clam stock but surf clam quota owners are engaged in actively developing the fishery. So this is a fishery in which economic conditions could change rapidly and unpredictably. MFish is concerned that the absence of differential deemed value rates can run the unnecessary and unacceptable risk that inappropriate incentives to fish on deemed values may develop unexpectedly.
- 167 In setting the deemed values at the time surf clams were introduced into the QMS, MFish assumed then that the price and fishing costs will be similar across all QMAs for a given species. If different stocks of the same species have the same landed prices and face the same costs, then the ACE price will be similar. And if landed price and ACE price are similar, then the same deemed value will create the correct incentives to balance catches with ACE.
- 168 In the IPP, MFish did not propose that the annual or interim deemed values for any surf clam stock be changed expect for the interim deemed value for MMI. MFish did, however, specifically invite submissions on landed prices and ACE prices. MFish wanted to use this information on landed price and ACE price to advise the Minister so that the annual deemed values created appropriate incentives to balance catch with

ACE. However, no submissions were made on the surf clam stocks that included landed price or ACE price. Absent new information, MFish does not propose to alter the annual or interim deemed value rates for any surf clam species except for the interim deemed value for MMI.

- 169 In the IPP, MFish did propose to recommend that differential deemed values of twice the annual deemed value for all surf clam stocks at 100% in excess of ACE holdings be introduced. MFish believes that the obligation of the Minister to set deemed values to provide incentives to balance catch with ACE must be forward-looking. Differential deemed values are an important part of establishing resilient deemed value settings for a stock that will provide appropriate incentives to balance catch with ACE throughout the fishing year. For any stock, there is always a risk that market conditions will change during a year. Annual deemed values that provide appropriate incentives at the beginning of the year may fail to provide appropriate incentives later in the same year if, for example, landed price increases dramatically. Differential deemed values provide a mechanism that will provide an additional incentive to stop fishing on deemed values once the TACC has been exceeded by 100%. While differential deemed values cannot completely compensate for unexpected economic changes, they do limit the range of conditions within which inappropriate incentives to fish on deemed values, rather than to balance catch with ACE, will continue to operate. This will limit the impact until the necessary changes are implemented. MFish recommends that the single differential deemed value rate equal to twice the annual deemed value rate for catch all catch at 100% in excess of ACE holdings be implemented.
- 170 Section 75 (2) (a) says that the Minister, in setting deemed values, must take into account the need to provide an incentive for commercial fishers to have sufficient ACE to cover their catch. If commercial fishers find it profitable to fish on deemed values rather than using the TACC setting process, this is inconsistent with the objectives of s 75 (2) (a). Introducing a differential deemed value rate for all surf clam stocks helps provide the appropriate incentive for commercial fishers to balance catch with ACE. If fishers or quota holders believe that larger TACCs are warranted, they can use the TACC setting process to advance this point of view.
- 171 An economic disincentive to enter these fisheries is created by the New Zealand Food Safety Authority (NZFSA) since each fisher/harvester must acquire a shellfish sanitisation clearance for the area they wish to harvest the surf clams from before they can do so. Every fisher/harvester must apply for their own shellfish sanitisation clearance and cannot piggy back off the other applications. They must do all the relevant testing and analysis themselves. Because this is an expensive process, quota owners are not currently concerned about deemed value fishing.
- 172 The proposed differential deemed value rate would limit harvesting by non-ACE holders if the NZFSA were to change any regulations around the shellfish sanitisation clearance. Without ACE, they would face the higher value after the first kilogram caught.
- 173 SeaFIC submitted that they do not disagree with the deemed values rates proposed in the IPP for all surf clam stocks.
- 174 The recommendations below follow MFish's advice outlined above.

Frilled Venus Shell: All BYA stocks

- 175 MFish has limited information on the landed price of any BYA product or on the ACE price for BYA. When BYA was brought into the QMS, MFish used its limited information to set an annual deemed value of \$0.42 per kg and an interim deemed value of \$0.21 per kg.
- 176 MFish recommends you approve the following deemed value rates for all BYA stocks for the 2009-10 season:
- Annual deemed value rates to remain at \$0.42 per kg;
 - Interim deemed value rates to remain at \$0.21 per kg;
 - Introduce a differential deemed value rate into these fisheries at the rate outlined in the table below.

Table 6: Proposed differential deemed value rates for all BYA stocks

Current differential rates		Proposed differential rates	
Catch in excess of ACE holdings (%)	Current deemed value rate for all BYA stocks (\$)	Catch in excess of ACE holdings (%)	Proposed deemed value rate for all BYA stocks (\$)
N/A	Differential deemed values currently do not apply	100	0.84 per kg

Ringed Dosinia: All DAN stocks

- 177 MFish has limited information on the landed price of any DAN product or on the ACE price for DAN. When DAN was brought into the QMS, MFish used its limited information to set an annual deemed value of \$0.42 per kg and an interim deemed value of \$0.21 per kg.
- 178 MFish recommends you approve the following deemed value rates for all DAN stocks for the 2009-10 season:
- Annual deemed value rates to remain at \$0.42 per kg;
 - Interim deemed value rates to remain at \$0.21 per kg;
 - Introduce a differential deemed value rate into these fisheries at the rate outlined in the table below.

Table 7: Proposed differential deemed value rates for all DAN stocks

Current differential rates		Proposed differential rates	
Catch in excess of ACE holdings (%)	Current deemed value rate for all DAN stocks (\$)	Catch in excess of ACE holdings (%)	Proposed deemed value rate for all DAN stocks (\$)
N/A	Differential deemed values currently do not apply	100	0.84 per kg

Silky Dosinia: All DSU stocks

- 179 MFish has limited information on the landed price of any DSU product or on the ACE price for DSU. When DSU was brought into the QMS, MFish used its limited information to set an annual deemed value of \$0.42 per kg and an interim deemed value of \$0.21 per kg.