Setting of Sustainability and Other Management Controls for Stocks to be Introduced into the QMS on 1 October 2003

Final Advice Paper

18 July 2003

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INTRODUCTION

Purpose

1 This paper provides advice on six species – shortfin and longfin eels (Chatham Islands), kina (North Island), leatherjacket and rough and smooth skates – to be introduced into the Quota Management System (QMS) on 1 October 2003. The advice pertains to the setting of Total Allowable Catches (TACs), Total Allowable Commercial Catches (TACCs), and allowances for recreational interests, customary interests and other sources of mortality, and deemed values and overfishing thresholds.

New Species into the QMS

2 The Ministry of Fisheries (MFish) is introducing these six species into the QMS on 1 October 2003 as part of its programme to introduce around 50 further species by 1 October 2004.

3 The respective Quota Management Areas (QMAs), fishing years and units of measure for the six species to be introduced into the QMS on 1 October 2003 were *Gazetted* on 24 October 2002 and outlined in Table 1.

Table 1: Quota Management Areas, Fishing Years and Units of Measure for Fishstocks to be introduced into the QMS on 1 October 2003

Species (code)	Quota Management Areas	Fishing year	Unit of measure
Freshwater eels – Chatham Islands (SFE 17 & LFE 17)	1 based on FMA 4	1 October to 30 September	greenweight
Kina (SUR)	7 based on FMAs [1], [2], 8, 9, 10	1 October to 30 September	greenweight
Leatherjacket (LEA)	5 based on FMAs (1 & 9), (2, 7 & 8), (3, 5 & 6), 4, 10	1 October to 30 September	greenweight
Rough skate and smooth skate (RSK & SSK)	5 based on FMAs (1 & 2), (3, 4, 5 & 6), 7, (8 & 9), 10	1 October to 30 September	greenweight

Note: Parentheses ( ) denote a QMA based on the combination of noted Fisheries Management Areas.
Brackets [ ] denote a QMA based on a subdivision of noted Fisheries Management Areas.

4 Kingfish was also *Gazetted* for QMS introduction on 1 October 2003, however, it has undergone a separate consultation process, and final advice on this species will be provided by late July.

Initial Position Paper and Consultation

5 On 8 April 2003 an Initial Position Paper (IPP) was released that contains MFish's initial position on the proposed management measures for the above six species to be introduced into the QMS on 1 October 2003. MFish provided copies of the IPP to iwi, sector groups, and individuals and organisations considered to have an interest in the six species being introduced into the QMS. MFish also provided a copy of the IPP to those who requested a copy.

6 Stakeholders and iwi were asked to provide written submissions on the proposals for the six species by 23 May 2003.

Outline of Document

7 This paper provides you with MFish's **initial position** and **final advice and recommendations** on proposed TACs, TACCs, other allowances and management measures for the six species to be introduced into the QMS on 1 October 2003.

8 This paper is structured so that the **Initial Position** section for each species is followed immediately by the **Final Advice** section for that species.

9 In addition, this paper includes a section from the IPP, titled Statutory Obligations and Policy Guidelines, that relate to the setting of TACs, TACCs and other allowances for each species. This section is followed by another section from the IPP, titled Deemed Values and Overfishing Thresholds. This section is followed by discussion of generic issues raised by stakeholders in submissions, titled Generic Issues. The sections on the individual species then follow.

Implementation of Decisions

10 Following your final decision on the management measures outlined in this document, you will forward formal notification to the Parliamentary Counsel Office for declaration in a *Gazette* Notice. MFish anticipates the *Gazette* Notice will occur on Thursday, 7 August, for the above six species and on Thursday, 14 August for kingfish.

11 A meeting has been scheduled on Monday, 28 July to discuss the content of this document with you.

12 In addition, s 12(2) of the Fisheries Act 1996 (1996 Act) requires that after setting or varying any sustainability measure, you are to, as soon as practicable, write to sector groups advising them of the reasons for your final decisions. MFish proposes to compile a decision letter once decisions on TACs, TACCs and allowances, relevant regulatory amendments have been made for the six species, plus kingfish, being introduced into the QMS on 1 October 2003.

Final Advice for Regulatory Amendments

13 Separate advice has been provided to you on the regulatory amendments required as a consequence of the above six species being introduced into the QMS on 1 October 2003.

STATUTORY OBLIGATIONS AND POLICY GUIDELINES

Purpose of the Fisheries Act 1996

1 The purpose statement of the Fisheries Act 1996 describes the overriding objective of the Act as being to provide for the utilisation of fisheries resources while ensuring sustainability. The Act defines 'ensuring sustainability' as to 'maintain the potential of fisheries resources to meet the reasonably foreseeable needs of future generations; and avoiding, remedying, or mitigating any adverse effects of fishing on the aquatic environment'. Management of a specific stock must be consistent with these dual requirements in order that sustainability of the stock can be ensured.

2 '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 well-being. Within the parameters of these sustainability standards, there is a positive obligation to provide for the use of fisheries resources.

3 The extent of management measures required to achieve the purpose of the Act will produce a continuum of potential outcomes. Utilisation may be provided for at different levels and the extent of such use should be considered on a case by case basis. Where there is a significant threat to the sustainability of a fishstock, the measures adopted to achieve sustainability are likely to be more stringent than where there is a lesser threat.

4 Consideration of social, economic, and cultural wellbeing (in conjunction with other considerations consistent with the purpose and principles of the Act) may influence how measures to ensure sustainability are implemented. Hence, providing for utilisation while ensuring sustainability may be achieved in different ways, and the objective may be reached over time. Consideration of the purpose of utilisation may be relevant in determining which is the most appropriate approach.

Setting a Total Allowable Catch

5 Below the level of the purpose statement, the Act contains a number of specific provisions relating to ensuring a stock is managed sustainably. A key measure is the setting of a TAC for a QMS stock. The Minister is required to set a TAC for each QMS stock. The Act contains a number of different options in terms of the intended target level able to be implemented for a QMS stock. All of the options are consistent with the purpose of 'ensuring sustainability', but each option provides for a fundamentally different management outcome.

Maximum Sustainable Yield (s 13)

6 Section 13 represents the default management option that is to be applied when setting a TAC for a stock within the QMS, unless that stock qualifies under criteria for management under ss 14 or 14A.

7 Under s 13 there is a requirement to maintain the biomass of a fishstock at a target stock level, being at, or above, a level that can produce the MSY, having regard to the interdependence of stocks. 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 threshold level.

8 If a stock is currently below the 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 the target stock level (ie, at or above a biomass that will support MSY) and in a way and rate which has regard to the interdependence of stocks and within a period appropriate to the stock, and having regard to the stock's biological characteristics and any environmental conditions affecting the stock. If the stock is above a target stock level, there is a requirement to set a TAC that will result in the stock moving towards the target stock level, or alternatively remain above the target stock level, having regard to the interdependence of stocks (s 13(2)(c)). In determining the way in which, and rate at which, a stock is altered to achieve the target stock level, the Minister is to have regard to such social, cultural, and economic factors as he or she considers relevant (s 13(3)). Section 13(3) makes it explicit that such factors are relevant in the determination of the way and rate of progress to the target level, rather than in the determination of the target stock level itself.

9 There is no set rate, or time frame, within which a rebuild or a 'fishing down' of a stock must be achieved. However, the progress of moving towards the target stock level must be suitable to the fishery in question, having also considered those matters specified in s 13 of the Act. Hence, a TAC should be viewed as a tool for moving a stock towards the target stock level. Other measures may be adopted in conjunction with a change in the TAC. However any additional measures should not be relied on in place of the TAC.

10 Additional flexibility is encompassed within s 13 by the capacity to provide for an in-season adjustment to the TAC for certain stocks. 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. This Schedule can apply to any stock with a highly variable abundance. For such stocks in years of high abundance, the TAC may be increased in-season and the Minister may allocate all or part of that increase as Annual Catch Entitlements (ACE) to commercial fishers. At the commencement of the next fishing year the TAC reverts to the level set at the commencement of the previous fishing year. This means that commercial catch levels, not property rights in the form of individual transferable quota (ITQ) are increased during the fishing year.

11 An in-season TAC increase may be distributed between commercial, customary and recreational fishers, and an allowance made for other sources of mortality to the stock. The increase allocated to commercial fishers does not result in an increase to the TACC during the fishing year.

12 The fundamental objective of an in-season adjustment is to manage a stock at or above the level that can produce the MSY. Information about what is the desirable level of the TAC that can produce the MSY is available at such a time that a decision is made after the start of the fishing year. However, at the end of the fishing year, the TAC reverts to the level that was applicable at the start of the fishing year.

No Specified Target Stock Level (s 14)

13 Section 14 of the Act prescribes an exception to the target stock level based on an assessment of the MSY for those stocks where:

a) it is not possible to estimate MSY because of the biological characteristics of the species; or

b) a catch limit for New Zealand has been determined as part of an international agreement; or

c) the stock is managed on a rotational or enhanced basis.

14 For stocks that meet the above criteria, and as a result are listed on the Third Schedule of the Act, a TAC may be set other than in accordance with the requirements in respect of target stock levels stated in s 13, provided the TAC better achieves the purpose of the Act.

15 While any TAC must be set in a way that ensures use of the stock is sustainable, there is no requirement to take into account or be guided by the need to manage in accordance with MSY. In contrast to s 13, s 14 provides significant flexibility as to the target stock level set for a stock. The rationale for that flexibility is different for each of the categories of stocks eligible for listing on the Third Schedule.

16 The biological characteristics of some stocks mean that it is not possible or necessary to estimate the MSY to ensure the sustainability of the stock. For example, squid is a short-lived species. There is currently no ability to estimate the available abundance either before or within the fishing season. The extent of catch taken from the available biomass will not affect future recruitment or abundance of the species. For this reason, the TACs set for squid stocks have not been significantly changed during the last decade, but the actual catch levels have fluctuated markedly within that time.

17 Under an international agreement, a catch limit for a species may be set and allocated between individual fishing nations, eg, southern bluefin tuna. Typically such international agreements relate to highly migratory species or species that straddle national boundaries. The overall catch limit set for the species must be consistent with international fisheries management law; hence, the catch limit would need to ensure the sustainability of the species. There is no requirement that New Zealand separately manages that portion of the species it is allocated at MSY.

18 The third category relates to those stocks managed on a rotational or enhanced basis. The effect of rotational fishing or fisheries enhancement is that MSY may no longer be the appropriate target level (eg, scallops in area 7 (SCA 7)). Enhancement is designed to increase the level of abundance. While enhancement of the stock may not need to be consistently maintained, the ability to intervene to increase abundance

means that the sustainability of the stock can be ensured. The available yield will change over time.

19 Rotational harvesting involves selective harvesting of a portion of the stock. Rotational fishing is best suited to sedentary species or stocks with established fishing grounds. The yield taken in any one year may not be the MSY available for the stock overall. The ability to successfully manage a stock on a rotational basis may be dependent upon the biological characteristics of the stock.

20 A combination of rotational harvesting and enhancement may result in greater flexibility in setting a TAC that will ensure the sustainability of the stock. Enhancement may enable rotationally harvested areas to be restocked at a level above that which could be naturally produced. Enhancement may also provide an ability to maximise catch from each area as it is rotationally fished. Areas closed to fishing allow both enhanced and wild stocks to contribute to the spawning biomass and reach harvestable size before being subjected to commercial fishing. Area closures may protect sufficient adult stocks to ensure adequate recruitment to the fishery.

21 As with s 13, s 14 provides for an in-season increase to the TAC for stocks listed on the Third Schedule. The purpose of an in-season increase under s 14 is to take advantage of the available yield beyond any pre-determined target stock level. However, the level of the in-season increase must be consistent with the objective of ensuring sustainability of the stock.

22 An in-season TAC increase may be distributed between commercial, customary and recreational fishers, and an allowance made for other sources of mortality to the stock. Additional ACE is generated during the fishing year in respect of the increase in the TAC allocated to commercial fishers. At the close of the fishing year the TAC reverts to the level set at the beginning of that fishing year.

Above Level of Long Term Viability (s 14B)

23 A further exception to setting a TAC in accordance with the MSY is the management of a stock under s 14B of the Act. A TAC is to be set at a level that ensures the stock is maintained above the level that ensures its long-term viability. However, the Minister must be satisfied that the purpose of the Act would be better achieved by setting a TAC other than in accordance with s 13 of the Act (ie, at or above MSY). Maintaining a stock above the level that ensures its long-term viability is consistent with the purpose of the Act in relation to meeting the reasonably foreseeable needs of future generations.

24 The purpose of s 14B is to enable other related stocks to be fully harvested. The stock in question must be taken primarily as an incidental catch during the taking of one or more other stocks and must constitute only a small proportion of the combined catch taken. The Act does not prescribe a level that is deemed to be above that which ensures the long-term viability of a stock. That determination is required on a case-by-case basis, subject to the requirement that the TAC must be set at a level no greater than what is required to allow for the taking of another stock in accordance with its own TAC and TACC. Quota owners are required to take all reasonable steps to minimise the catch of the stock managed below B_{MSY}.

25 Section 14B addresses the difficulty of managing stocks within a mixed fishery to B_{MSY} without forgoing some economic return. In some mixed species fisheries the TACs of minor bycatch species limit the ability of fishers to catch their entitlement of the target species and could result in closure of the target fisheries.

26 Section 14A specifies a number of significant tests apply in order to mitigate the risk of managing a stock below B_{MSY}. First, the stock must be able to be maintained above a level that ensures its long-term viability. Secondly, the Minister is required to consider the need to: (1) commission appropriate research to assess the impact of reducing the stock below B_{MSY}; (2) implement measures to improve the quality of information about the stock; (3) close areas to commercial fishing to reduce any sustainability risk to the stock; and (4) avoid any significant adverse effects on the aquatic environment of which the stock is a component. Hence, the setting of a TAC under s 14B to allow for the taking of another stock may need to be balanced by the closure of areas to fishing to ensure the stock is maintained above a level that ensures its long-term viability. Consideration of significant adverse effects of fishing could have potential implications for the aquatic ecosystem as a result of reducing the biomass of the stock.

27 Consideration also needs to be given to the social, cultural and economic implications of managing a stock below B_{MSY}. The setting of a TAC above the level that ensures the stock's long-term variability must have the support of quota owners who hold 95% of the shares in the stock. Arrangements need to be in place to address the concerns of those quota owners who do not support the setting of a TAC under s 14B. The total benefits of managing the stock at a level other than that permitted under s 13 must outweigh the total costs. Managing the stock in a manner other than s 13 must have no detrimental effects on non-commercial fishing interests in the stock.

28 A final important check and balance when setting a TAC under s 14B is that the Minister for the Environment is required to concur with a proposal to enable a TAC to be set for a stock above the level that ensures it long-term variability.

29 The ability to set a TAC under s 14B is triggered by the submission of a proposal from quota owners to the Minister of Fisheries to manage the stock in this way. An Order in Council (ie, a regulation) must be made specifying the application of s 14B for the named stock. No proposal relating to s 14B has been received in respect of the stocks to be introduced to the QMS on 1 October 2003.

Other Statutory Obligations Applicable When Setting a TAC

30 When setting a TAC, a number of generic provisions of the Act need to be taken into account – in particular, the purpose of the Act (s 8), the environmental and information principles (outlined in ss 9 and 10 respectively), factors to be taken into account when setting sustainability measures (s 11), and the application of international obligations and the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (s 5).

Information Principles

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

s 10, the information principles to use when information is uncertain. Decisions should be based on the best available information that, in the particular circumstances, is available without incurring unreasonable cost, effort, or time. Decision makers should consider any uncertainty in the information available and be cautious when information is uncertain, unreliable, or inadequate. However, 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.

Environmental Principles

32 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. First, associated or dependent species (including non-fish bycatch) should be maintained above a level that ensures their long-term viability. Secondly, biological diversity of the aquatic environment should be maintained (ie, the variability of living organisms, including diversity within species, between species, and of ecosystems). Lastly, habitat of particular significance for fisheries management should be protected.

33 The Act defines associated and dependent species as any non-harvested species taken or otherwise affected by the taking of a harvested species. The term 'long term viability 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. Long-term viability may be considered in the context of the natural dynamics of populations. At one level the concept implies the need to ensure the continuing existence of species in the sense of maintaining populations in a condition that ensures a particular level of reproductive success. At another level, long-term viability implies an ability to maintain populations at a level that ensures the maintenance of biodiversity. 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. Long-term viability also needs to be considered with respect to utilisation by different sector groups. Equally, 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 TAC.

34 'Biological diversity' includes the variability among living organisms, including diversity within species, between species, and of ecosystems. The aquatic environment is of broad scope and encompasses:

a) the natural and biological resource comprising any aquatic ecosystem; and

b) all aquatic life and all places where aquatic life exists.

35 The maintenance of biodiversity needs to be considered in the context of the purpose of the Act that assumes that, where possible, a resource should be used to the extent that sustainability is not compromised. Determination of the extent of fishing or the impacts of fishing that can occur requires an assessment of the risk that fishing might cause a species to become extinct or biodiversity is reduced to an unacceptable level. In the absence of information to undertake a detailed assessment, the information principles specified in the Act provide guidance for decision makers on the approach to be adopted.

36 Habitat can be defined as '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, the source of the threats may not be confined solely to the activity of fishing. A range of terrestrial activities may impact on fisheries habitats. Habitats that assist in the reproductive and productive process of a fishery, hence are of special significance, should be protected. Adverse effects on such areas are to be avoided, remedied, or mitigated.

37 Insufficient information is available to undertake a systematic assessment of biodiversity for the stocks to be introduced to the QMS on 1 October 2003. No ecosystem, population, assemblage assessment has been undertaken in respect of the stocks reviewed. However, an assessment of the relative information available and the degree of risk in relation to the environmental principles are outlined in this document for each stock.

International Obligations (s 5(a))

38 There are a range of international obligations that relate to fishing. The two key pieces of international law relating to fishing, and to which New Zealand is a party, are the United Nations Convention on the Law of the Sea, 1982 (UNCLOS) and the United Nations Convention on Biological Diversity 1992 (the Biodiversity Convention). It is MFish's view that the provisions of the Act, and the proposed exercise of powers under the legislation are consistent with New Zealand's international obligations.

39 The Act is to be interpreted, and all persons exercising or performing functions, duties, or powers under the Act are required to act, in a manner consistent with New Zealand's international obligations relating to fishing. As a general principle where there is a choice in the interpretation of the Act or the exercise of discretion, the decision maker must choose the option that is consistent with New Zealand international obligations relating to fishing (s 5(a) of the Act).

40 MFish is involved in a number of initiatives relating to the management of stocks within the EEZ that are consistent with its international obligations. MFish seeks to give effect to those obligations on a generic basis. Application of generic policies, such as the marine protected area strategy and MFish's environmental management strategy, to the management of specific stocks will follow in due course.

Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (s 5(b))

41 The Act is to 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 (s 5(b)). This requirement is intended to further the agreements expressed in the Deed of Settlement referred to in the Preamble to the Settlement Act. In particular, Mäori non-commercial fishing rights continue to give rise to Treaty obligations on the Crown.

42 The species-specific papers in this document set out information relating to the customary interest in the species concerned. An allowance for customary fishing has been made for each stock on the basis of a qualitative assessment of that interest. The consultation process will provide Mäori with an opportunity to comment on the customary use and management of the stocks. However, no explicit consideration has been given to the application of the specific customary management tools available under the Act to the stocks concerned. Introduction of the species to the QMS will not preclude adoption of appropriate management measures in the future to provide for customary use and management practices.

43 In accordance with the Settlement legislation, the Treaty of Waitangi Fisheries Commission will be allocated 20% of all quota shares in the TACC set for the stocks on introduction to the QMS.

Additional Factors to be taken into Account (s 11)

44 Before setting or varying any sustainability measure (including a TAC) the following factors must be considered:

a) 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 which the Minister considers to be relevant;

b) Any effects of fishing on the stock and the aquatic environment;

c) Any existing controls that apply to the stock or area concerned;

d) The natural variability of the stock concerned;

e) Any conservation services or fisheries services;

f) Any relevant fisheries plan approved under this Part; and

g) Any decisions not to require conservation services or fisheries services.

45 Where any of the above factors are relevant, they are discussed in the species-specific sections. MFish is not aware of any specific plans, statements or strategies that are relevant to the stocks in this document. No fisheries plans have been approved to date. A fisheries plan for cockles in COC 3A has been submitted to the Minister but not approved. MFish is not aware of any other plans being contemplated at this time for any of the stocks being introduced into the QMS this year. No explicit decisions have been made not to require services in a fishery on the basis of any undertaking by stakeholders either within or outside a fisheries plan to undertake certain services directly.

46 Consideration also needs to be given to the most effective way of achieving the desired outcome of a sustainability measure. 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. However, the process of introducing stocks to the QMS is unlikely to involve implementation of measures on a non-regulatory basis. The actual commercial participants in the fishery may be largely unknown until such time as quota is allocated.

Guidelines for Setting TACs for New Species

47 There are a number of closely interrelated factors that need to be taken into account when setting the TAC. The following factors are identified as being of particular significance:

- Identifying the appropriate TAC option for a stock (ss 13, 14, 14B): The level at which the TAC is set will be heavily influenced by the statutory TAC option proposed for the stock. Existing estimates of yield based upon on MSY or an existing catch limit for a stock might not be applicable for a stock managed under ss 14 or 14B.

- The biological and fishery characteristics of the stock and associated stocks: The biological and fishery characteristics of the stock will influence the TAC option adopted for the stock. Implications of catch levels for associated stock complexes (target and bycatch relationships) should be expressly considered. In some instances information about current catch levels may not accurately reflect actual catch ratios in multi-species fisheries due to the nature of the reporting obligations for non-QMS stocks.

- The effects of harvesting the stock on the aquatic environment: The relative effects on the environment of different TAC options should be considered. Interactions with protected species and areas of high biodiversity need to be actively managed. Consideration of predator-prey relationships is an important factor. The effects of different fishing methods should be considered.

- The capacity for development of the stock: The Act requires that consideration be given to the development of fisheries resources while ensuring the sustainability of those resources. In the purpose statement of the Act (s 8), the definition of the word 'utilisation' includes 'developing' fisheries resources. The QMS provides the most appropriate mechanism for development to occur. Development can be actively provided under the various TAC options. Rotationally harvested and enhanced fisheries provide scope for a TAC to be set at a level other than one that moves the stock towards B_{MSY}. A stock managed below Bmsy may provide for additional catch to be taken. In some instances stocks introduced to the QMS have been lightly fished and are deemed to be in a near virgin state; hence the stock is well above B_{MSY}. While there is no provision in the Act for TACs to be set at a nominal level, there is scope for additional catch to be taken in the short term as the stock is fished towards a level that can produce MSY.

- Important factors to be considered when considering development potential are that:

  i) setting TACs at the level of current catch (in some instances a zero or one tonne TAC) may artificially constrain development of a stock where there is virtually no risk posed to the stock by setting a higher TAC;

  ii) existing catch limits (competitive or ICE) may not be appropriate for the purposes of setting a TAC/TACC. This is because they were originally designed to allow limited target fishing on a competitive

basis for those fishers with existing permits. The competitive catch limits may not be reflective of actual total landings for the species concerned.

iii) development may be constrained by a lack of a review of a stock in the immediate future once introduced to the QMS due to competing priorities for review of other stocks;

iv) a TAC may be set at a level that moves the stock over time towards a level that can produce the MSY (B_{MSY});

v) if a TAC is set at a level in order to move a stock towards B_{MSY}, information (catch and effort data or fishery independent research) needs to be forthcoming to assess when the stock is at or above the level that can produce the MSY;

vi) setting a TAC that provides for some level of initial development offers an incentive for fishers to invest in the fishery and develop initiatives such as adaptive management proposals and fisheries plans.

- The information principles: The Act specifies that the absence of, or any uncertainty in, any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of the Act. As noted above, the purpose of the Act contains two distinct elements 'ensuring sustainability' and 'providing for utilisation'. In the absence of an explicit hierarchy between the two objectives, a decision is to be made on a case by case basis that takes into account the available information to determine the relative weight given to each of the objectives. Any decision should explicitly identify the factors taken into account and the relative weighting placed upon the relevant information.

- Existing stock assessment information about the status of the stock: Information about current biomass and estimate of available yield may be available for only a limited number of stocks. An explicit CAY or MCY (or equivalent) management approach, complementary with the characteristics of the stock, may be adopted with the reasons stated for that approach. The certainty, reliability, and adequacy of that information needs to be taken into account. Existing estimates of yield might not be applicable for a stock managed under ss 14 or 14A.

- Current catch levels of the stock: In the absence of robust assessment information or an existing catch limit (competitive or ICE) current catch can be used as a basis for setting the TAC, subject to consideration of other relevant statutory obligations. The reliability of any information is to be taken into account.

- Monitoring of stock: Current and future monitoring of the stock is an important factor relating to an assessment of risk to sustainability. The ability to assess the stock, the nature of the assessment method and the likely robustness of that assessment, the level of observer coverage, and the nature of direct research are to be considered in the assessment of different potential TAC options.

- Relevant social, economic, and cultural factors: The ability to set a TAC at different levels will have commensurate social, economic, and cultural

implications. The way and rate at which a stock is fished towards B_{MSY} should explicitly take into account relevant social, economic, and cultural factors. The interests of future generations is an important social consideration that is reflected in consideration of the TAC option adopted, the level at which the TAC is set, and the effects of fishing for the stock on the aquatic environment. Treaty obligations arising in respect of a stock are encompassed within relevant cultural factors.

Development opportunity

48 MFish acknowledges that information on which to base catch limits in a number of non-QMS fisheries is deficient. However, in accordance with the use of the information principles, as discussed above, MFish believes that there is opportunity in a number of fisheries on introduction to the QMS to place greater weight on utilisation opportunity in the absence of any discernable risk to the stock or the aquatic environment when considering TACs.

49 Catch in a number of the fisheries proposed for introduction is not reflective of abundance, but rather has been influenced by the inability to obtain access to the fishery (as a result of the permit moratorium) and marketing/processing issues. In some cases there is also likely to be significant levels of underreporting, particularly in bycatch species. Introduction into the QMS will potentially provide more access opportunities and a better framework for managing the stock, given the reporting and catch balancing requirements on fishers.

50 The opportunity for development and the extent of utilisation provided for needs to be assessed on a stock by stock basis having regard to risk based on the following factors:

- Information on sustainability risk to the stock;
- Biology of the stock, including potential for localised depletion;
- Information on historical catch, if the stock has been lightly fished therefore biomass is likely to be close to virgin or at least above B_{MSY};
- Likely impacts of fishing on aquatic environment, including bycatch species etc;
- Socio-economic and cultural issues; and
- Anecdotal information on abundance, including consideration of the size of likely habitat in the management area.

51 In bycatch fisheries, in particular, interaction with other harvested stocks should be a consideration in any TAC proposed. In the absence of sustainability concerns fishers in bycatch fisheries will face punitive measures under the balancing regime if the TACs are not set appropriately.

52 While the initial TACs proposed are likely to provide some opportunity for development of the fishery by existing and/or new entrants, they might not provide the maximum utilisation possible for the stock. Further increases will require, in most cases, additional supporting information on the impacts of fishing on the stock and aquatic environment. There matters are best incorporated within stakeholder driven initiatives following introduction.

53 As a consequence of providing development opportunity above existing levels of utilisation, the TAC may not be fully caught immediately following introduction pending the development of harvesting/marketing/processing capacity. However, this in itself is not a reason not to provide opportunity for development when potential risk to the stock based on the factors noted above is considered acceptable.

54 MFish notes that a development opportunity within the TAC does not predetermine subsequent allocation decisions.

Use of information

55 The nature of the information available about each stock is likely to vary. A hierarchy (set out below) is proposed in respect of the nature of the information and hence the weighting to be assigned to that information. As a general rule greater weight will be placed on information at a higher level on the hierarchy. Stock assessment information is afforded greater weight than a non-QMS catch limit set for the stock. A catch limit or commercial catch limit may be afforded greater weight than information about historical and current catch levels.

56 However, careful consideration is required in assessing the nature of any current catch limit. In some instances competitive catch limits may not be reflective of actual total landings for the stocks concerned. Competitive catch limits may have also acted to constrain effort in a fishery in support of the permit moratorium (ie to limit new entrants), rather than as a measure explicitly designed to ensure sustainability of the stock. They were originally designed to allow limited target fishing on a competitive basis for those fishers with existing permits.

1.	Information about status of stock and estimates of available yield	Adopted in Plenary Report	Use as basis for setting TAC (subject to consideration of guidelines identified above – ie, general statutory obligations and TAC option, etc)
		Not adopted in Plenary Report	Take information into account, but receive limited weighting

2.	Existing catch limit set (CL/CCL – competitive or ICE)	CL or CCL and catch information of fishing sectors and other sources of mortality	Use as basis for setting TAC (subject to consideration of guidelines identified above, including validity of CL/CCL)
		Sustainability concern (in context of TAC option adopted)	Review and/or reduce existing catch limit when set TAC

3.	Catch information and estimates of other sources of mortality	Apply criteria (identified below) for calculating catch information	Use as basis for setting TAC (subject to consideration of guidelines identified above)
		Sustainability concern (in context of TAC option adopted)	Review and/or reduce overall catch when set TAC

57 The term ‘sustainability concern’ is used to describe a situation where, after considering all relevant issues, there is a conclusion that the existing non-QMS catch limit or current catch is not sustainable and should not be used as a basis for setting a TAC. The term ‘sustainability’ is intended to encompass issues relating to the stock itself and the effects of fishing on the aquatic environment (ie, impacts of fishing method, trophic relationships, target/bycatch stock complexes).

58 A significant increase in catch levels of a stock in recent years may not necessarily equate to increased abundance, but rather might be an indication of increased effort and targeting of the stock. Consideration of relevant information may result in a TAC being set that is more precautionary than the current catch level.

Criteria for Determining Catch Levels

59 Criteria have been developed for determining catch levels and other sources of mortality. In the absence of other information TACs may be set at levels based on consideration of known or estimated levels of recreational, Mäori customary, and commercial catch and all other sources of fishing related mortality. The purpose of the exercise is to calculate the overall level of catch being taken from the fishery. The information about the catch of each sector group may act as a guide to the subsequent allocation of the TAC but, in itself, that will not be determinative of that exercise. The Minister makes a separate decision about allocation after setting the TAC.

60 The criteria is as follows:

Commercial Catch	Current catch	Current commercial catch from the fishery
	Stable fishery	Average catch for a period since 1986 where catch level has been relatively stable for in excess of 3 years
	Developing fishery	Average catch over last 3 completed fishing years where a significant increase in catch has occurred
Recreational Catch	Existing estimates (diary surveys, etc)	Use as basis for determining current recreational catch
	No estimates but known recreational catch	Nominal catch level included
	No known recreational catch	No catch level included
Customary Catch	Existing estimates (customary permits/authorisations; information provided by tangata whenua etc)	Use as basis for determining current customary catch
	No estimates but known to be of significant importance to Mäori above the level of recreational take	Catch level above the known recreational catch included
	No estimates but known to be of importance to Mäori	Catch level similar to known recreational catch included
	No estimates but known customary catch (and stock of no particular importance to Mäori)	Catch level half of known recreational catch included
	No known customary catch	No catch level included
Other Sources of Mortality to the Stock Caused by Fishing	Quantitative information or estimates of illegal catch, discards, incidental gear mortality available	Use as basis for determining current level of other sources of mortality
	No estimates but other sources of mortality known to occur based on information about similar stocks and methods	Nominal mortality level included
	No known mortality	No mortality level included

61 In the absence of an estimate of sustainable yield from the fishery, or the presence of a robust and reliable Catch Limit (CL) or Commercial Catch Limit (CCL), an assessment of commercial catch based on the criteria of ‘stable’ or ‘developing’ has been undertaken. The criteria of ‘stable’ and ‘developing’ fisheries for estimating commercial catch were adopted in 1998 for the introduction of species into the QMS for 1 October 1998. A fishery is ‘stable’ when reported catches have remained relatively constant over an extended period of time (ie, in excess of three years). Included in the category of a ‘stable’ fishery are those stocks were the catch level has

fluctuated over time. In most fisheries such fluctuation is anticipated as a natural biological occurrence. For 'stable' fisheries commercial catch has been calculated using the average catch for a period since 1986 where the catch level has been relatively stable in excess of three years.

62 A fishery is 'developing' where a substantial increase in catch has been recorded over the last three completed fishing years. Where this has occurred the average total landings over the last three completed fishing years have been used as a basis for determining current commercial catch.

63 Calculation of commercial catch based on the criteria of 'stable' or 'developing' is one factor to be considered when setting a TAC. As indicated above, there may be the potential to provide some opportunity for development of a stock above existing catch levels.

Analysis of TAC Options

64 An analysis of different potential TAC options is undertaken in respect of each stock where there are viable alternatives. Where more than one statutory TAC option is available (ie, ss 13, 14 or 14A) an assessment of relevant information is provided. An important consideration is the respective trade-offs between different TAC options in terms of potential economic return, information levels – current and future, and sustainability concerns (stock specific and general environmental). The purpose is to indicate the relative weighting assigned to different factors for each TAC option. In most instances only a relatively subjective qualitative assessment can be undertaken.

Allocation of TAC

65 The Minister is required to make allowances for different fishing interests under the Act. The Minister must have regard to the TAC and allow for:

a) customary Mäori;

b) recreational fishers;

c) all other sources of mortality to the stock caused by fishing; and

d) the TACC.

66 In the absence of other information TACs may be set at levels based on consideration of known or estimated levels of recreational, Mäori customary, and commercial catch and all other sources of fishing related mortality. The information about the catch of each sector group also acts as a guide to the subsequent allocation of the TAC but that, in itself, will not be determinative of that exercise. The Minister makes a separate decision about allocation after setting the TAC.

67 The allocation of the TAC is an important element of the introduction process. The amount allocated to the respective interest occurs (except for Fourth Schedule stocks) without any compensation of current interests in the fishery. For example, 20% of the commercial allocation to the Treaty of Waitangi Fisheries Commission occurs by pro-rating downwards the total provisional catches if they exceed more than 80% of the TACC. The introduction process allocates ITQ to commercial fishers as a property

right. Any subsequent redistribution of the commercial allocation of the fishery to another sector may be subject to payment of compensation. (No compensation is payable where measures are taken to ensure sustainability.) MFish considers there is benefit in considering the initial allocation of catch in light of both current and reasonable future needs or interests in the resource. Decisions at the point of introduction to the QMS may resolve some of the problems about allocation that may occur in the short to medium term at no or minimal cost to any sector where a TAC is able to set, in accordance with the provisions of the Act, at a level above the extent of current catch.

68 Generic factors relevant to the determination of allocation of the TAC include:

a) population trends;

b) existing catch levels (including popularity and importance of the resource to each sector);

c) current fishing practices (including overfishing, voluntary shelving, or closures by a stakeholder);

d) economic impact of allocative decisions; and

e) social and cultural impact of decisions.

69 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, has a significant impact on particular fisheries. An allowance for the recreational interest and the corresponding management controls for a stock should take into account existing population distribution and growth.

70 Certain fisheries are considered to be of particular importance to a particular sector. The value attributed to a resource is not limited solely to economic value but may also include the non-market value. The abundance of a species and the availability of particular size fish for a specific stakeholder group may also be factors relevant to the allocation decision.

71 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. Equally stakeholders may elect to exercise their fishing rights in a manner which results in their allocation in a fishery being undercaught. Voluntary closures and temporary shelving of allocation may be undertaken as a means of improving the abundance of a species and the availability of certain sized fish. Current catch by customary Mäori may not reflect the extent of customary interests in a species. Decisions may be made not to fish a species due to non-availability. The allocation process should endeavour to take account of customary needs and not simply reflect the current level of catch, which may have been constrained by a lack of abundance.

72 The setting of a TAC and allocative decisions in a general context may impact on economic investment in terms of upgrading of plant and fleet structure. 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. Information on these matters, if available, is to be taken into account.

Recreational Allowance

73 In some cases estimates of recreational catches of the new species are available from recreational surveys. Where available, these estimates have been included and used as the basis for setting the recreational allowance. Where estimates are not available but there is known to be recreational catch, a nominal allowance has been made. For species and stocks where there is no or negligible recreational catch, no allowance is proposed. In all instances the allowance proposed also takes into account the factors identified above. MFish also notes that recreational fishers are not accorded a priority in the allocation of the TAC. The recreational allowance does not need to fully satisfy estimated recreational requirements.

74 Where appropriate, bag limits may need to be set for the stocks introduced to the QMS. The purpose of a bag limit is to ensure that the recreational allowance is not exceeded. The bag limit may also act as a means by which the sustainability of the fishery is ensured. For a number of stocks introduced under this process there is no current bag limit. The need to set a bag limit may be averted in the short term where the recreational allowance is based not on current catch but takes into future recreational interests in the resource. In the immediate term it may be unlikely that the recreational allowance for some stocks will be exceeded even in the absence of a bag limit.

Mäori Customary Non-Commercial Allowance

75 There are no quantitative estimates of the size of Mäori customary non-commercial catch for any of the stocks. Where estimates of customary catch of the new species is available from permits or authorisations under customary fishing regulations that information has been taken in to account. However, as noted above, the current level of catch may not entirely reflect the importance of the resource to customary fishers. Where estimates are not available but there is known to be customary catch, a nominal allowance has been made. In some instances the customary interest is considered to be greater than the level of recreational catch and that is reflected in the respective allowances. For stocks of importance to customary Mäori the allowance is based on the level of the recreational catch. For species and stocks where there is some catch but the stock is not considered of importance to customary Mäori then the allowance is based on half the recreational catch. Where there is no catch and negligible if any interest in the stock, such as for deepwater species, no explicit allowance is proposed. In all instances the allowance proposed also takes into account the factors identified above. MFish notes that the allowance made for customary fishers is not intended to act as a constraint of the level of catch taken.

All Other Fishing Related Mortality

76 No quantitative information is available to assess the level of all other fishing related mortality applicable to the new species or to attribute such mortality to a particular sector group. However, some level of mortality may occur as a result of the particular

method use to exploit a stock. Where appropriate MFish proposes to make an allowance for all other mortality to a stock caused by fishing. In addition MFish proposes that the allowance for other fishing related mortality be deducted from the allowance for a particular sector that is primarily responsible for the mortality.

Total Allowable Commercial Catch

77 The TACC for the new species has been proposed on the basis of the criteria used to determine the TAC in the absence of stock assessment information. The criteria applied are:

a) existing CLs or CCLs; or

b) average catch based on a stable or developing fishery classification; or

c) potential development opportunity.

78 Where sustainability concerns exist as to the level of total landings, the TACC has been modified appropriately. In all instances the TACC proposed also takes into account the generic factors identified above.

79 The Act provides that under specific circumstances foreign licensed access to a stock is to be provided within the TACC set for a stock. Foreign access is to be provided to that portion of the TACC held by the Crown where the quota is not tendered off and the ACE remains unsold after the Crown has offered the ACE for sale to persons entitled to own quota. MFish intends to undertake formal tenders for any quota and ACE allocated to it post introduction of these species into the QMS. Where a TACC is set in excess of the current commercial catch there is the potential in some stocks for some ACE to remain unsold as from 1 October 2003. Technically this could be made available to foreign vessels through the Minster establishing a foreign allowable catch under s 81 of the Act. Practically, there may be limited interest in fishing small quantities of fish available to foreign vessels. MFish will not be in a position to advise the Minster on the potential to establish foreign allowable catches until 2004, at the earliest.

Other Management Controls

80 The TAC is invariably supported by a number of management controls that collectively ensure the sustainability of the stock and provide for utilisation within accepted limits. The Act explicitly provides for the setting of sustainability measures relating to size limits, biological state, fishing seasons, methods restrictions, closed areas, plus measures such as overfishing thresholds and bag limits.

81 The species-specific papers set out those measures that currently apply which are being retained as part of the management framework for the stock under the QMS. The general intent is for the species-specific papers not to undertake a widescale review of all existing measures or potential measures that could be adopted. The ideal opportunity to discuss such issues will arise when quota is taken up by fishers and potentially within the context of development of a fisheries plan. However, where necessary, consideration of appropriate measures, such as method restrictions, is outlined.

Setting of Deemed Values and Overfishing Thresholds

82 A separate section in this document outlines the general principles relating to the setting of interim and annual deemed values for QMS stocks. The section contains information from a port price survey and sets out the interim and annual deemed values proposed for each of the species to be introduced in the current process.

83 The section also contains information about the setting of overfishing thresholds and tolerance levels for the stocks to be introduced to the QMS on 1 October 2003.

Cost Recovery

84 The Act provides a framework where certain costs of the Crown in delivering fisheries services or conservation services may be recovered from the commercial fishing industry. In summary these costs arise from research activities, administration of the QMS, enforcement activities delivered by (or through) MFish or in respect of conservation services delivered by the Department of Conservation. The services to be delivered in each of these areas are subject to annual consultation with stakeholders.

85 Having determined that some of the Crown's costs can be recovered the allocation of these costs is determined by the Fisheries (Cost Recovery) Rules 2001. In general the costs of research are targeted towards the fishery (or group of fisheries) to which specific research programmes relate. The costs of QMS administration and enforcement are generally targeted to quota holders. Therefore, upon introduction into the QMS, commercial quota owners will face some proportionate costs in these areas.

86 In a more general sense, cost recovery is a key fisheries management tool. The intent of commercial fishers meeting the full costs associated with access and property rights is to encourage rational business decisions that provide for the good husbandry of the resource. Following introduction to the QMS, fishers will have the opportunity to consider future management options including potential trade-offs that may be available between further research (with associated costs) and increased catch levels.

Regulatory framework

87 The intent of the quota management system is to provide a broad management framework that provides the opportunity to maximise efficient utilisation of fishing resources while ensuring sustainability. The introduction of a species into the QMS requires that a TAC and other management controls are set in order to ensure overall sustainability of the species. Certain controls in place for these species will no longer be required following implementation of QMS management measures. The review of regulations prior to introduction will ensure that regulations inconsistent with the QMS management regime are removed.

DEEMED VALUES AND OVERFISHING THRESHOLDS INITIAL POSITION PAPER

Deemed Values

Introduction

1 This paper sets out proposed deemed values for species that will enter the QMS from 1 October 2003.

Background

2 MFish is introducing a number of species into the QMS on 1 October 2003. The species and stocks are as follows:

Table 1: Fishstocks for introduction into QMS on 1 October 2003

Species	Current Management Areas
Skate (SKA)	FMAs 1-10
Leatherjacket (LEA)	FMAs 1-10
Kina (SUR)	FMAs 1, 2, 8, 9 & 10
Chatham Island Eels (SFE/LFE)	FMA 4

3 It is necessary to set deemed values for the above fishstocks. The Act, as amended by the Fisheries Amendment Act 1999, brought about a major change in the way catches are controlled in the QMS. The new balancing regime established in the Act came into effect on 1 October 2001. The major elements of the new system are set out below.

Fisheries Act 1996 Balancing Regime

4 Under the Act, instead of it being a criminal offence to take catch in excess of quota — as under the Fisheries Act 1983 — over-fishing is controlled, in the first instance, by the application of graduated civil penalties (deemed values). Non-payment of deemed values will lead to suspension of permits.

5 Section 75 of the Act establishes the basis for setting the primary administrative disincentives in the new balancing regime — interim deemed values and annual deemed values. Sections 77, 77A and 78 provide the basis for imposing the second part of the administrative regime — over-fishing thresholds.

6 In the new balancing regime, interim and annual deemed values must be set for all fishstocks in the QMS. Deemed values are charged on a monthly (interim deemed values) and annual basis (annual deemed values) for any catch of QMS stocks in excess of a person's ACE holdings. Balancing of catch against ACE occurs on the 15th day of each month. Deemed values are charged immediately following this balancing process.

7 The Minister of Fisheries has the responsibility for setting interim and annual deemed values by *Gazette* Notice under s 75 of the Act. In setting interim and annual deemed values, the Minister must take into account the need to provide an incentive for fishers to cover catch with ACE The Minister may have regard to:

a) the desirability of commercial fishers to land catch for which they do not have ACE;

b) the market value of ACE;

c) the market value of the stock;

d) the economic benefits gained by the most efficient person gaining benefit from that stock, or stocks taken in association with that stock;

e) whether the catch has, or is likely to, exceed the TACC; and

f) any other matters the Minister considers relevant.

8 In 2001 the Minister of Fisheries agreed to a policy relating to the setting of deemed values and overfishing thresholds.

Principles for Setting Deemed Values

9 MFish proposes a set of principles for setting deemed values under the new balancing regime. These principles, similar to those used in previous years, are as follows:

10 Overall objectives:

a) ensure that the total catch remains within the CCL to ensure sustainability;

b) provide incentives for fish to be retained and landed and thus:

c) recorded for management purposes; and

d) minimise wastage caused by dumping.

11 Incentives or disincentives for fishers:

a) by removing the economic benefit of taking unauthorised fish to ensure individual fishers' catches stay within their ACE holdings;

b) provide an incentive for fishers to undertake fishing within areas, times, depths and methods to keep catches to their ACE holding; and

c) encourage the landing of quota species caught in excess of entitlement by minimising incentives to dump because of deemed values.

12 Other considerations:

a) ensure deemed values are applied in an equitable manner to all fishers (proceeds from catching, processing, and exporting returns and therefore, incentives for fishers, processors, and exporters are to be taken into account);

b) the deemed values regime should be cost-effective and practical;

c) take into account amounts 'deemed' in previous years and catch against TACC;

d) where the TACC has been exceeded, the Crown to receive recompense for detrimental impact to environmental and non-commercial values;

e) assessed on the basis of the best available information (s 10, Fisheries Act 1996);

f) assessed following consultation with appropriate stakeholders; and

g) the ability to set a deemed value rate for stocks landed and received by a licensed fish receiver at the Chatham Islands that is different from the rate set in respect to fish of that stock landed elsewhere:.

13 The next step identified in the deemed values setting process is to establish criteria to give effect to the above principles. MFish proposes that, for the purposes of this exercise, the criteria should consist of two main elements:

a) the determination of the 'market value' for fishstocks; and

b) the factors applied to the 'market value'.

Annual Deemed Values

14 The annual deemed value is the main deterrent to fishers not balancing their catch with ACE. The Minister must set annual deemed values at a level that provides an incentive for every commercial fisher to acquire sufficient ACE to cover catch.

Interim Deemed Values

15 The interim deemed value plays an important role in ensuring that the overall objective of the balancing regime — ensuring catch is covered by ACE — is achieved. It does this by encouraging fishers to trade ACE during the year, thereby helping ensure they are in balance at the end of the year. It should be noted that the interim deemed value is designed to encourage fishers to balance throughout the year — not penalise them if they do not (provided they pay the interim deemed value demanded).

16 The interim deemed value also serves another role by helping prevent continued excessive fishing not covered by ACE during the year. It achieves this in conjunction with the permit suspension provisions in s 79 of the Act. Under this provision, a fisher's permit is suspended if a deemed value debt of more than $1,000 is not paid within 20 days of the demand. This helps ensure that a fisher does not continue fishing in excess of ACE with no intention of either acquiring ACE before the end of the year or paying annual deemed values at the end of the year. Without the requirement for payment of interim deemed values, such a fisher would only be excluded from the fishery at the end of the year.

17 The Act provides the same guidance to the Minister when setting an annual deemed value as for an interim deemed value. The only additional considerations are that the deemed value must be set at a higher rate than the interim deemed value and that a different deemed value rate must be set in respect of the same stock which apply to different levels of catch in excess of ACE.

Statutory Considerations

18 In setting interim and annual deemed values for new QMS species under s 75 of the Act, the Minister must take into account the need to provide an incentive for fishers to cover catch with ACE. MFish believes that it is providing that incentive by proposing annual deemed values that:

a) are set at a factor of the market value (ie, port price), depending on the status and value of the fishstock;

b) take into account the market value of the fishstock, using port price as the most useful indicator of the value of that stock to commercial fishers; and

c) have regard to the economic benefits obtained.

19 Similarly, s 75(3) of the Act requires that the Minister must set annual deemed value rates for a stock that are greater than interim deemed values for that stock. It is proposed to meet this obligation by setting interim deemed values at 50% of the annual deemed value rate.

20 Section 75(5) of the Act allows the Minister to set a different deemed value in respect of fish landed and received by a licensed fish receiver at the Chatham Islands to a stock of the same species landed and received by a fish receiver elsewhere.

The Determination of the 'Market Value' for Fishstocks

21 A range of values, including the port price, wholesale price, export price and retail price, can represent market value. The most common measures are port price and export price. Port price is the value of fish sold ex-vessel. Export price, usually notional Free on board (FOB), incorporates the price of processing and harvesting of the fish, but not the cost of transporting it to the international market place. The policy guidelines note that there are potential problems in collecting port price information, but states that port price remains a useful indicator of the value of the stock to commercial fishers. Importantly, port price figures can be determined for all species.

Port Price Survey

22 MFish conducted a port price survey to determine the average price paid to fishers for each species in each Quota Management Area (QMA) earlier this year. Licensed Fish Receivers (LFRs) were approached to provide information including:

a) the price (for the landed state) paid for fish landed into the LFR; and

b) the approximate tonnage received by the LFR of each species during the fishing year.

23 The results of the survey, undertaken in early 2003, were used to set the 'market value' for fishstocks. MFish notes that the survey indicated a port price of $3.50 for Chatham Islands eels. It should be noted, however, that unlike most marine species, this dollar value is effectively a landed price in either Christchurch or Wellington. The cost of landing live eels into either of these cities is borne by the permit holder.

In accord with s 75(5) of the Act, MFish proposes to reflect this in the deemed values proposed for the Chatham Islands freshwater eel fishery.

24 After discussion with North Island LFRs, MFish concludes that an appropriate port price for North Island Kina is 85 cents.

25 Port prices for new QMS species are set out in the Table in Appendix I.

Categories of Fishstocks

26 MFish proposes that deemed values will be set as follows for those species entering the QMS in 2003-04:

a) for high value single species fisheries (ie, those stocks that are of high value (port price and ACE value) and taken primarily with little, if any, by-catch), the annual deemed value for the 2003–04 fishing year will be set at 200% of the average port price on the basis that there should be no over-catch of these species. In future years, changes in the annual deemed value will be determined primarily by the effectiveness of the deemed value in restraining total catch within the available ACE. The interim deemed value for these stocks will be adjusted as required to remain at 50% of the annual deemed value;

b) for low knowledge fisheries (ie, fishstocks for which there is relatively little information on the fishery status and about which there are no sustainability concerns), the annual deemed value for the 2003-04 fishing year will be set at 60% of the average port price. The interim deemed value for these fishstocks will be adjusted as required to remain at 50% of the annual deemed value. In future years, changes in the annual deemed value for most stocks will be determined primarily by the effectiveness of the deemed value in restraining total catch within the available ACE. Deemed values for stocks in the low knowledge category will be adjusted, as required, to achieve the objectives for that fishery; and

c) for all other fishstocks (ie, those that do not necessarily have a high unit value and for which there is adequate knowledge for MFish to have confidence in the TACC), the annual deemed value for the 2002-03 fishing year will be set at 75% of the average port price. The interim deemed value for these fishstocks will be adjusted as required to remain at 50% of the annual deemed value.

27 The new QMS stocks are classified as follows in the balancing regime categories:

High value single species fishstocks

28 All stocks of the following species are high value single species fishstocks:

a) North Island Kina; and

b) Chatham Islands Eels.

Low knowledge fishstocks

29 All stocks of the following species are low knowledge fishstocks:

a) Skate; and

b) Leatherjacket.

All other fishstocks

30 No stocks fall within the category of 'all other fishstocks'.

Differential Deemed Values

31 For the 'High Value Single Species' and 'All Other fishstocks' categories above, differential annual deemed values will apply. The Act provides that the Minister of Fisheries may set different annual deemed value rates in respect of the same stock, which apply to different levels of catch in excess of ACE. Differential annual deemed values apply to the individual fisher rather than for the fishery as a whole. A differential annual deemed value rate will apply only to the amount of catch above the threshold that triggers the differential annual deemed value. The regime set out in Table. 2 below, approved by the Minister of Fisheries, will apply to all stocks for which differential annual deemed values are to be used.

Table 2. Differential Annual Deemed Values

Individual Catch as a Percentage of ACE Held	Differential Annual Deemed Value
100% < $x \leq$ 120% of ACE	Basic annual deemed value
120% < $x \leq$ 140% of ACE	120% of basic annual deemed value
140% < $x \leq$ 160 % of ACE	140% of basic annual deemed value
160% < $x \leq$ 180% of ACE	160% of basic annual deemed value
180% < $x \leq$ 200% of ACE	180% of basic annual deemed value
$x >$ 200% of ACE	200% of basic annual deemed value

32 These differential deemed values have been promulgated in the Fisheries (Interim and Annual Deemed Values) Notice 2001.

Consultation

33 Industry participants are invited to make submissions in respect of the proposed deemed values for the stocks in this paper.

Preliminary Recommendations

34 MFish recommends that the Minister:

a) **Note** that annual deemed values for high value single species fisheries entering the QMS from 1 October 2003 will be set at 200% of port price

b) **Note** that differential deemed values will apply to those new QMS species in the *high value single species fisheries* and *all other fishstocks* categories, but not to the *low knowledge fishstocks* category

c) **Note** that the deemed value proposed for the Chatham Islands freshwater eel fishery is adjusted to take account of landing live eels into 'mainland' cities.

d) **Note** the preliminary (subject to consultation) annual deemed values for those species entering the QMS from 1 October 2003, as set out in Appendix I.

Overfishing Thresholds

35 *Overfishing thresholds* (ss 77, 77A and 78 of the Act) ensure that, where interim deemed values have proved inadequate to prevent fishers continuing to catch in excess of ACE and where overfishing thresholds are applied, the fisher's permit is conditioned to prevent the fisher fishing in the relevant geographical area.

36 *Tolerance levels* (ss 77 and 78 of the Act) are designed to prevent *overfishing thresholds* being triggered by trivial amounts of catch in excess of ACE.

37 The Minister has established a policy framework for the imposition of overfishing thresholds and tolerances. Different approaches to the imposition of overfishing thresholds and tolerances exist depending on whether the fishery is a high-value single species fishery, a low knowledge fishery or another fishery subject to the QMS.

38 MFish does not propose to set overfishing thresholds in the following fisheries:

a) Skate; and

b) Leatherjacket.

39 These stocks are considered to fit the 'low knowledge' category of fishstocks. MFish sees no need to provide an exemption to this general policy for these stocks. Accordingly, MFish does not believe that overfishing thresholds or tolerances should be set for these species.

40 MFish proposes that overfishing thresholds should be set for the following species:

a) North Island Kina; and

b) Chatham Islands Eels.

41 North Island Kina and Chatham Island Eels are classified as high value single species stocks. In such circumstances the Minister's policy indicates that overfishing thresholds should be applied in such fisheries.

42 The Minister's policy indicates that where an overfishing threshold is to be set it should initially be set at 5% of a fisher's available ACE with a tolerance level of 25kg for fishers with a small (or no) ACE ownership.

43 MFish sees no reason to provide an exception to this normal rule in the case of North Island Kina and Chatham Island Eels and therefore recommends that an overfishing threshold should be set at 5% of a fisher's available ACE with a tolerance level of 25kg for fishers with a small (or no) ACE ownership.

Consultation

44 Industry participants are invited to make submissions in respect of the proposed over fishing thresholds.

Preliminary Recommendations

45 MFish recommends that the Minister:

a) **Agree** that overfishing thresholds are set for North Island Kina and Chatham Islands Eels at 5% of a fisher's available ACE with a tolerance level of 25kg for fishers with a small (or no) ACE ownership.

APPENDIX I

Proposed Annual Deemed Values for New QMS Species 2003- 04 Fishing Year

Species Fishstock	Survey Port Price ($/kg)	Proposed % factor	Proposed Annual Deemed Value ($/kg)	Differential Deemed Value (Y/N)	Overfishing threshold / tolerance
Skate (SKA) 1-10	0.73	60%	0.438	N	N
Leatherjacket (LEA) 1-10	0.39	60%	0.234	N	N
Kina (SUR) 1, 2, 8, 9 & 10	0.85	200%	1.70		
Chatham Island Eels (SFE/SFE) 4	$3.50 less allowance for cost of air freight (being $1.50) ie, $2.00	200%	$4.00		

GENERIC ISSUES

Best Available Information

Submissions

1 **SeaFIC** conveys frustration about MFish's interpretation of the information principles of the 1996 Act and the process used to give effect to that interpretation for developing sustainability and other management controls for stocks to be introduced into the QMS.

2 SeaFIC states that what could be considered the best available information is not being brought into the process in a manner that contributes to improved fisheries management outcomes. That is, the knowledge and information held by fishery stakeholders gained through years of experience of participating within the fishery. This information may range from anecdotal observations over time to fine scale spatial records documenting biological and fishery characteristics.

3 SeaFIC points to limitations of using catch estimates. It questions:

a) whether the proposals have been developed with the best available information;

b) whether there is sufficient consultation and time for stakeholder feedback to be incorporated into the management proposals;

c) whether stakeholders get the opportunity to evaluate and comment on the "best value" or full range of management options for the fishery, particularly those advanced by stakeholders in response to the Initial Position Paper;

d) the transparency of the process leading to the final proposals; and

e) whether the proposals reflect the purposes of the Act to enable people to provide for their social, economic and cultural well-being.

4 There are a number of factors SeaFIC identifies that collectively contribute to this situation, which include:

a) The absence of available information for new stocks being introduced that conforms to the current applied hierarchy for information to be considered;

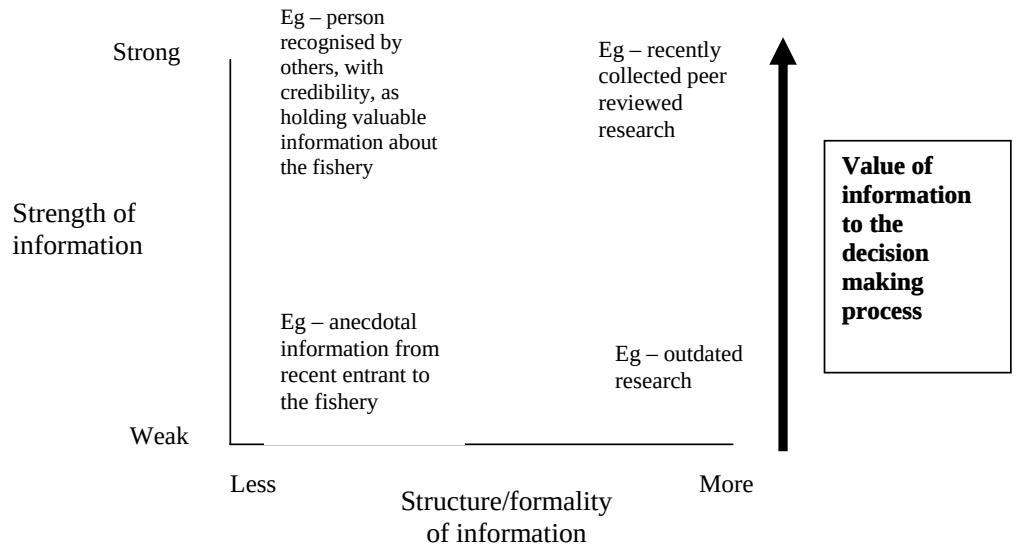
b) The limited scope of information explicitly considered within the best available information hierarchy; and

c) Reliance on the final stage of the consultation process (Initial Position Paper) to bring other sources of information into consideration after the proposals have been developed.

5 To address this situation SeaFIC considers that the process would be better served if MFish explicitly made allowance in the information hierarchy for the wider continuum of "best available information" as identified in the s 10 policy definition of the 1996 Act (refer Figure 1). In the absence of a scientific assessment, this

framework would ensure that the best available information, regardless of its origin, would be available for the development of fisheries management proposals.

Figure 1 Continuum of information



6 SeaFIC sees the fisheries assessment working groups as a forum to enable fishery stakeholders, including the science community, to pool and analyse both information and knowledge for the purposes of feeding advice into the science assessment and fisheries management process in a collective, coherent and efficient manner.

MFish Discussion

7 MFish acknowledges that there is uncertainty in the information regarding many of the stocks being introduced into the QMS. MFish notes that SeaFIC's suggestion to use the working groups as a wider forum is worthy of consideration. However, SeaFIC's suggestion would place the working groups well outside their current terms of reference, which is to assess scientific information and to provide advice on it, not to assess non-scientific information and to advise on the "fisheries management process".

8 In addition, the working groups, by their very nature, often conclude with commonly used phrases, such as "it is not known whether current catch will allow the stock to move towards MSY". While the wording of this type of commonly used phrase may be an appropriate response to the scientific information under consideration, it does not offer a great deal of insight for management purposes.

9 MFish notes that NIWA currently provides information on the biological characteristics of the stocks proposed for introduction. In the absence of stock assessment information MFish does not consider that the use of working groups

would provide any greater insight into the fisheries management process than that obtained through the consultation process.

10 Further, MFish notes that the working group process may not provide a better forum for discussion than the current consultation process, given that not all stakeholder groups have the resources to attend the working groups' meetings.

11 Also, there may be timing issues regarding the consultation timeframes and the working groups' ability to meet with a wider range of constituents to consider various sources of information.

12 The issue for MFish is how to make best use of the range of stakeholder views about a species based upon their involvement in the fishery. MFish questions SeaFIC's assumption that the current consultation process does not adequately address this issue. An IPP is released for the purpose of consultation, which provides an opportunity for a range of views to be expressed on proposed options and to be considered when formulating final advice. The key concern expressed in SeaFIC's submission is that MFish appears to not be taking sufficient notice of information from commercial fishers who have long-standing involvement in the fisheries in question. However, MFish carefully assesses all information included in submissions.

13 In saying that, the SeaFIC "continuum of information" (refer Figure 1) has some merit. However, its application might be far more subjective and open to debate and controversy than it first appears. In particular, identification of who should be recognised as having credibility so that their statements should receive greater weight is problematic. MFish accepts there is inherent difficulty in weighing the merit of different views about a fishery, but does not consider that SeaFIC's "continuum" will provide any greater certainty to the process of how to consider various sources of information, particularly anecdotal information. As well, defining what is outdated research would require careful consideration. The date of the research is not necessarily representative of its value. Placing information in generic categories is inevitably fraught with difficulty, and in any case the information does need to be considered on a case-by-case basis.

14 MFish considers that the information put before you in these IPPs and FAPs is the best available information as is required by s 10(a) of the 1996 Act.

Setting of TAC/TACCs

Submissions

15 **Te Ohu Kai Moana** (TOKM) sees the most important factor is to ensure that the bycatch nature of a species is recognised and that any regimes established do not act as inhibitors to access for other more preferred and more valuable species.

16 **Nga Hapu o Te Uru** (NHTU) (representing hapu and iwi between Waipingao (south of Mokau and Port Waikato)) state that where there have been no scientific assessments for a species or there is a lack of knowledge about the impacts of fishing on the species they should not be introduced into the QMS and a precautionary approach should be adopted.

17 SeaFIC notes that the IPP acknowledges the potential for valued target fisheries to be unnecessarily constrained as a consequence of setting a conservative TACC for non-target species caught in the same fishery. "SeaFIC agrees with this assessment, but believes that the proposed TACCs for leatherjacket, rough and smooth skates are inherently conservative, and as a result, constraints on the target fishery are highly likely to be an unintended outcome of the management proposals."

18 SeaFIC notes that historical catch landing records do not accurately reflect actual landings for these non-target species. Consequently, catch records and proposed TACs/TACCs are likely to be lower than actual catch levels. From a TACC setting and allocation perspective, SeaFIC sees that a conservative TACC raises the following points of concern:

a) The market price for quota, ACE, and deemed value charges are likely to be upwardly distorted;

b) Assuming the non-target species has an abundance and presence within the mixed species fishery greater than its TAC/TACC suggests, fishers will be in the unavoidable and unwarranted position of incurring deemed value charges; and

c) Provisional catch histories (PCH) and subsequent quota allocations, similarly, will not be an accurate reflection of a fishers current landings.

19 SeaFIC submits that fishers that do not have PCH, yet have contributed to the development of the fishery since 1990–91 to 1991–92 and current landings, may potentially be shut out of the fishery if there is insufficient ACE available to meet their requirements.

20 SeaFIC agrees in principle to the view put forward in the IPP to set a TAC that provides for some level of initial development, thereby offering an incentive for fishers to invest in the fishery. Future development would be advanced through stakeholder initiatives such as adaptive management programmes (AMP) and fisheries plans. SeaFIC notes that in practice, however, within a shared fishery such as kina, commercial stakeholders face considerable hurdles before achieving such an outcome. SeaFIC considers it is difficult to understand how the Minister could agree to increase a TAC as the result of either an AMP or fisheries plan when there is a complete absence of accurate catch estimates from the customary and recreational sectors. Furthermore, without a legitimately mandated recreational stakeholder body SeaFIC believes it will be impossible for commercial stakeholders to enter into, or advance, a multi-sector agreement to achieve the fine spatial scale management widely accepted as the most appropriate methodology for the kina fishery. SeaFIC considers, in the absence of any sustainability concerns when setting a TAC/TACC for kina stocks, consideration should be given to the barriers preventing commercial stakeholders advancing future proposals to provide for their well-being. In this instance, SeaFIC considers it would be appropriate to provide for the development potential in the stock in the initial TAC setting rather than look to future adjustments.

MFish Discussion

21 MFish does not regard the lack of information about a species as being adequate grounds for precluding introduction of the species to the QMS. The QMS provides a

better framework to manage species where information is uncertain, if they are of commercial or non-commercial interest, because of the requirement to set a TAC and make allowances. The lack of information is taken into account in setting the TAC, TACC and allowances and other management measures for a stock.

22 In setting TACs/TACCs MFish is mindful of the potential implications outlined by SeaFIC. MFish accepts that poor reporting may have occurred in different fisheries. The ability to ascertain the precise extent of historical catch as a basis for calculating TACs/TACCs is problematic. However, MFish does not consider that the solution is to set a TAC and TACC well in advance of current catch. In both the IPP and FAP MFish takes into account the relevant information about the species and the fishery to ensure that the TACs and TACCs proposed are consistent with the statutory obligations in the 1996 Act. Where it is considered appropriate to do so and consistent with those obligations a TAC and TACC are set in advance of current catch. MFish assessed this on a case-by-case basis having regard to risk attached to catch levels relative to known abundance, biology, and potential habitat.

23 The issue raised by SeaFIC about development of kina is worthy of consideration as a generic matter, as well as in terms of the specific TACs and TACCs proposed. MFish accepts that development of an AMP in a shared fishery is more problematic than in a fishery where commercial fishers are the sole users of the resource. However, this problem is not resolved by increasing the TAC in the absence of supporting information. Despite the nature of the fishery, there is still opportunity for the commercial sector to develop proposals for management and to discuss those with representatives of local non-commercial fishers. In the absence of agreement Government will be the final arbiter. However, steps taken by various groups to address problems in order to reach agreement will obviously be a factor relevant to Government consideration.

24 The purpose of initiatives, such as the AMP, are to provide a management framework that seeks to balance the risk attached to increased catch with increased levels of monitoring and reporting. The QMS introduction process does not allow for TACCs to be set above historical catch levels unless the assessment of risk suggests it is appropriate to do so in the absence of an AMP framework. To provide such headroom generically would not be consistent with your obligations under s 10(c) of the 1996 Act.

Preferential rights

Submissions

25 **Sanford Ltd** (Sanford) supports the development of a model in principle to address the concerns of fishers to access bycatch quota (ie, a preferential right). Sanford acknowledges that any preferential rights that are granted would create a precedent and encourage unsustainable fishing for non-QMS species in the expectation of preferential allocation upon QMS introduction. Sanford suggests that any model developed would need to address these concerns.

26 SeaFIC notes the potential for current fishers who do not hold PCH to be shut out of a fishery if there is insufficient ACE available to meet their requirements. SeaFIC also

notes that the fishers concerned may have contributed to the development of the fishery and the level of current landings that is used as a starting point for the setting of the TAC/TACC. SeaFIC considers there are a number of options for tendering "headroom" within the TACC to provide an opportunity to access quota.

MFish Discussion

27 MFish is aware of the ongoing concern raised by industry about the introduction of bycatch species into the QMS. MFish is currently reviewing its policy on the tendering of Crown-held quota that results from QMS introductions, and so at this time no definitive response can be given to Sanford's proposal for a model that has some type of preferential right to bycatch quota. MFish intends to discuss the option of preferential access with industry as part of the development of a paper for your consideration.

28 MFish accepts there is a need to undertake further discussions with industry on the issue of bycatch species and allocation of quota. MFish is developing a policy paper on the future fisheries management framework, which should address the matters raised by SeaFIC and Sanford.

Recreational Allocation

Submissions

29 SeaFIC finds it unacceptable that management proposals aimed at the recreational sector, including TAC setting and reallocation of proportional shares, have been progressed with the degree of uncertainty surrounding catch estimates and weak management frameworks.

30 SeaFIC notes that in a Ministerial press release titled *"Improved Data to Inform Marine Recreational Fishing Decisions"*, dated 29 November 2001, the Minister gave notice that any changes to marine recreational fisheries management would have to be based on better information about the recreational catch than that now available. The Minister identified the nature and extent of the catch from charter vessels and the frequency, consistency and accuracy of the MFish's four-yearly recreational surveys as two particular areas where a need for better information has been identified.

31 SeaFIC finds it disconcerting and a major failing that none of the management proposals under consultation either seek to address the Minister's concerns, or further the goals of MFish promoting increased stakeholder responsibility and participation in fisheries management.

MFish Discussion

32 MFish accepts that improved information about recreational catch is needed. However, as outlined in s 10(c) of the 1996 Act you must be cautious in making a decision where the information in uncertain, unreliable or inadequate and once the decision is made to introduce a species to the QMS you are required by s 21(1) to make an allowance for recreational fishing when setting the TACC. Issues regarding the next recreational survey cannot be resolved as part of the introduction of species

into the QMS on 1 October 2003. MFish remains interested in obtaining information from charter boat operations, however, further policy work is required on this matter.

33 MFish considers the allocation of quota to commercial fishers is an important first step in promoting increased stakeholder responsibility and participation in fisheries management. Therefore, the introduction of a species into the QMS may be necessary in order to provide stakeholder groups with incentives to consider, and hopefully agree, on how best to manage a fishery by way of a fishery plan. However, in and of itself, QMS introduction is not designed to resolve the issue of recreational rights or establishment of appropriate governance arrangements.

Customary Allocation

Submissions

34 **Te Runanga o Otakou** (TRO), a papatipu runaka of Te Runanga o Ngai Tahu, requests an allowance of 25% of the TAC for non-commercial purpose (within which 80% would be allocated as customary allowance). Such an allowance would recognise the principle that "the first priority for the resource is to provide for the needs of the community, including both customary and recreational fishers". A 25% allowance would avoid the risk that commercial and non-commercial uses will come into conflict in the foreseeable future. TRO considers such an allowance would provide an effective means for it to exercise its kaitiakitaka responsibility. TRO also requests MFish provide it with a quantifiable means to participate in the management of all species allocated with its takiwä.

MFish Discussion

35 MFish does not support a generic allowance of 25% of the TAC being allocated to non-commercial interests. MFish appreciates that the interests of tangata whenua to be able to exercise their responsibility of kaitiakitaka. However, it questions whether an allowance of 20% of the TAC, in effect, is necessary for that to occur. Further, MFish considers that a recreational allowance of 5% may not be appropriate in all circumstances. MFish considers customary and recreational allowances on a case-by-case basis. For this reason, MFish does not regard non-commercial allocations as the best means of providing tangata whenua with the "quantifiable means" to participate in the management of relevant species. There is a range of tools available under Part 9 of the 1996 Act to provide for customary interests.

Consultation with Mäori

Submissions

36 **Malibu Hamilton** (Ngati Maniapoto, Waikato Tainui) contends that the Crown has not acted in accordance with the Treaty of Waitangi principles, has failed to adequately consult with Mäori on the "reforms", and has failed to take Mäori interests into account. The failure to undertake consultation hui in the area from Mokau to Port Waikato is seen as an injustice.

37 **NHTU** states that based on Article II of the Treaty of Waitangi any decisions about the introduction of species into the QMS that impact upon hapu fishing rights and rohe moana need to be negotiated with coastal hapu. The limited time provided for consultation was noted, and a preference for face to-face meetings was stated with a minimum of two west coast venues included. Nga Hapu o Te Uru also make reference to a MFish presentation on a proposed Treaty framework that was well received as indicating something constructive was finally being done about facilitating better consultation and improving the relationship with MFish.

38 **Te Runanga o Ngai Tahu** (TRONT) raise concerns about the processes by which MFish has attempted to engage Ngai Tahu Whanui. A key issue is to ensure MFish recognise and provide for the input and participation of tangata whenua and have particular regard for kaitiakitanga in the TAC setting process. A particular concern is raised about closing area to commercial fishing of skate. TRONT advise that MFish correspondence contemplated TRONT facilitating their own hui and inviting MFish staff to attend. TRONT sees that it is MFish's role and function to implement its statutory obligations. TRONT does not believe that tangata whenua should be responsible for funding such initiatives. TRONT believes MFish to be in breach of its statutory requirements and seeks a response on how MFish proposes to rectify this breach.

39 TRONT also refer to the MFish Treaty strategy. Te Runanga proposes a regional liaison group approach, based on four key regions within the Ngai Tahu Whanui takiwä for the identification of areas that are appropriate for commercial fishing of skate and for the setting of culturally appropriate TAC's for these species. TRONT understands this approach would be complementary to the measures proposed by MFish in its draft Treaty strategy.

MFish Discussion

40 MFish accepts that only a few consultation hui have been undertaken on the species proposed for QMS introduction. Information has been sent to iwi informing them at various stages of the QMS introduction process, including the opportunities to make submissions.

41 MFish accepts the need to work with tangata whenua to ensure that effective management of fisheries resources is achieved. MFish acknowledges the request made by NHTU for face-to-face consultation. MFish has informally discussed the introduction process with Nga Hapu representatives. However, MFish does not accept that the introduction of species into the QMS requires a process of negotiation with tangata whenua, but instead a requirement to consult.

42 MFish regards the implementation of its Treaty strategy as an important objective. However, currently MFish is not in a position to implement the Treaty strategy. Certain key relationship positions with MFish have not been filled as yet. Significant resources have also been required in a number of other work areas, including the scampi inquiry and aquaculture reforms. Expertise within MFish has also been lost as staff working on customary issues has left the organisation.

43 MFish does not accept that it is in breach of its obligations, in particular in respect of the claim made by TRONT. Staff from the Dunedin office had two meetings with

Ngai Tahu runanga at a regional level and informally discussed matters with other runanga about measures for skate.

44 MFish believes that the consultation carried out on your behalf has discharged your obligations to consult with Mäori (and other interested parties) as is required in ss 13 (setting the TAC), 21(setting the TACC) and 74 (setting deemed values) of the 1996 Act.

Quota Management Areas

Submissions

45 NHTU requests that the QMA boundaries on the west coast be altered by excluding harbours from commercial fishing. The reason for this request is that the harbours are important breeding grounds. These grounds are overfished, and interim measures are needed until fisheries plans, currently being drawn up, can be approved and implemented.

MFish Discussion

46 MFish does not agree that boundary changes are needed at this time. The 1996 Act provides a basis for closing areas to commercial fishing when it is appropriate to do so and a means for changing QMAs after the introduction of a species to the QMS. Additionally, the QMAs for the relevant species have already been set by *Gazette* notice.

Deemed values

Submissions

47 SeaFIC submits the IPP proposes deemed values for four new species that will be introduced into the QMS on 1 October 2003. SeaFIC notes that MFish recommends setting deemed values for these species prior to allocation and tendering of quota. Proposed deemed values are based on port prices, using 200% of the port price for the two high value species and 60% of the port price for the three incidental catch species. SeaFIC notes that while a percentage of port price is often used as a basis for setting deemed values, this is an arbitrary method that may not agree with MFish's own policies regarding the appropriate basis for setting deemed values.

48 SeaFIC submits that in the case of the new introductions of the three incidental catch species (leatherjacket, rough skate and smooth skate), the deemed values proposed are likely to have a strong influence on the tender price of unallocated quota and may result in an undue transfer of wealth to the Crown from property rights holders in related fisheries. SeaFIC concludes that for these incidental catch species, there is in fact no need to set deemed values prior to allocation and tendering of quota. Only after TACCs are set and tendering takes place will the necessary information be available on which to set appropriate deemed values. SeaFIC submits doing so earlier will only encourage speculation aimed at extracting rents from associated fishery that have customarily taken these species as incidental catch.

49 SeaFIC notes that according to MFish policy documents, including the IPP for this paper, the primary factor you must take into account when setting deemed values is to provide fishers with the incentive to cover their catch with ACE. SeaFIC fully supports this policy in principal, but find MFish's implementation of the policy to be problematic in some cases. SeaFIC contends that to provide appropriate incentives deemed values would have to be set somewhat higher than market prices for ACE, which should be equal to the marginal rent associated with catching and selling the species. SeaFIC also contends that for species that are primarily taken as incidental catch, their marginal value may relate primarily to their role as a constraint on other fisheries. SeaFIC notes that the market ACE price and the associated deemed value should reflect the marginal value of quota, which may be either higher or lower than the average value. Setting a deemed value just above the market ACE price should remove any incentives to catch fish that cannot be matched with ACE. However, for new species to be introduced into the QMS, no ACE price exists. SeaFIC concludes the current logic for setting deemed values is flawed, in that deemed values tend to lead the setting of ACE prices rather than the opposite as intended. SeaFIC states the tender prices and resultant ACE prices may, in certain cases, be determined primarily by the deemed values if they are set prior to tendering. This is not likely to be a problem for the two high value species, but is a distinct possibility for the incidental catch species.

50 Sanford states an ongoing concern that the present levels of deemed values are too low (and have been since their introduction in October 1990). Sanford believes MFish has responded to some industry pressures that fishers need an incentive to land the fish to enable complete information to be gathered. Sanford considers the deemed values should be set to remove the total economic value of catch taken without ACE.

51 Sanford does not support port prices being used to establish deemed values due to certain factors influencing port price. In particular, port prices are used in the cost recovery allocation model. Sanford considers there are incentives for quota owners to maintain lower port prices so they will not attract a large proportion of the costs allocated using the port price index. Sanford states that some measure of market value (export and local) of fish is needed to provide a better guide to establishing deemed values.

52 Sanford also opposes the collection of deemed values for the consolidated fund. It requests Government remove itself from the present "insider role" in respect of setting the TACCs and then collecting excessive deemed value revenue from the industry.

MFish Discussion

53 MFish notes SeaFIC's comments that setting deemed values for new QMS species on the basis of a percentage of port price is an arbitrary process that may not agree with the its own policies. MFish believes, however, that the manner in which it has set deemed values for new QMS species is consistent with the catch balancing regime guidelines established under the 1996 Act). It is important to emphasise that the process for setting deemed values for new QMS species, where none existed previously, is different to the process for reviewing existing deemed values. The balancing regime guidelines are silent on setting deemed values for new QMS species, so a policy has been developed from the guidelines and past practice (as set out in the IPP).

54 MFish notes SeaFIC's belief that there is no need to set deemed values for three incidental catch species (leatherjacket, rough skate and smooth skate) prior to allocation and tendering of quota. This is not a practical option given that it is highly unlikely that allocation and any tendering would be completed in time for species' introduction on 1 October 2003, nor is it feasible in view of your obligations under the 1996 Act. Section 75A requires that you must, if practicable, consult representative persons or organisations prior to setting interim and annual deemed values. Similarly, there is no discretion under s 75 of the Act to exempt a QMS stock from deemed values from the date of introduction – s 75(1) states that "the Minister *must* by notice in the *Gazette*, set an interim deemed value rate and annual deemed value rate for that stock …" MFish notes that deemed values cannot be adjusted during a fishing year, but can be reviewed for these and other species in future years on the basis of TACC over-catch, revised market value information, or other factors.

55 In the absence of ACE prices for species in the year of QMS introduction, MFish must consider other options. Measures of market value as port price, wholesale price, export price and retail price were all considered when the balancing regime guidelines were developed. While there are problems with all these measures, port price remains the most useful indicator of the value of a stock to commercial fishers, particularly since a port price figure can be determined for all species.

56 Taking ACE prices into account in reviewing deemed values in future is certainly an option as the balancing regime guidelines are further developed and refined. However, the value of ACE trades change from year to year, and there is a problem of how to set deemed values that track those changes. Whatever the measure of market value, deemed values will always be set in advance of the fishing year to which they apply, so potentially the issue identified by SeaFIC (ie, deemed values tend to lead the setting of ACE prices rather than the opposite) may remain.

57 MFish notes Sanford's belief that the present levels of deemed values are too low. This argument appears to make no distinction between different categories of species. In the case of high value species, for instance, MFish agrees with Sanford that deemed values should be set to remove any incentive to take catch in excess of ACE. Accordingly, the deemed value is based on 200% of the highest port price, on the basis that there should be no over-catch of these species. Such an approach would not be appropriate in the case of low knowledge by-catch species, where deemed values are set at a level that encourage fishers to land catch taken in excess of ACE, for a period, in order to improve the available information on the fishery.

58 MFish also points out that the new balancing regime provides for a number of graduated administrative disincentives. In this regard, it is particularly important to note the differential annual deemed value, which applies to an individual fisher's varied levels of catch in excess of ACE, rather than the fishery as a whole.

59 Sanford favours some measure of market value being used to establish deemed values. However, MFish notes that the setting of deemed values based on factors such as market value (eg, local & export market value) penalises the non-quota owner and ACE fisher who does not receive the full market value of the fish.

60 Finally, MFish notes Sanford's opposition to deemed value revenues being directed to the consolidated fund. Under the 1996 Act, you have a statutory role to determine

TACCs and deemed values. It is partly to avoid any suggestion of "insider" bias that deemed values revenues are directed to the consolidated fund, rather than to any MFish purposes.

61 MFish notes that on issues associated with the under and over recovery of cost recover levies, the report to you from the joint Crown/industry working group recommended a review of deemed values be commenced in the second half of the 2003 calendar year.

FRESHWATER EELS (SFE 17 & LFE 17) – CHATHAM ISLANDS – INITIAL POSITION PAPER

Initial Position Paper

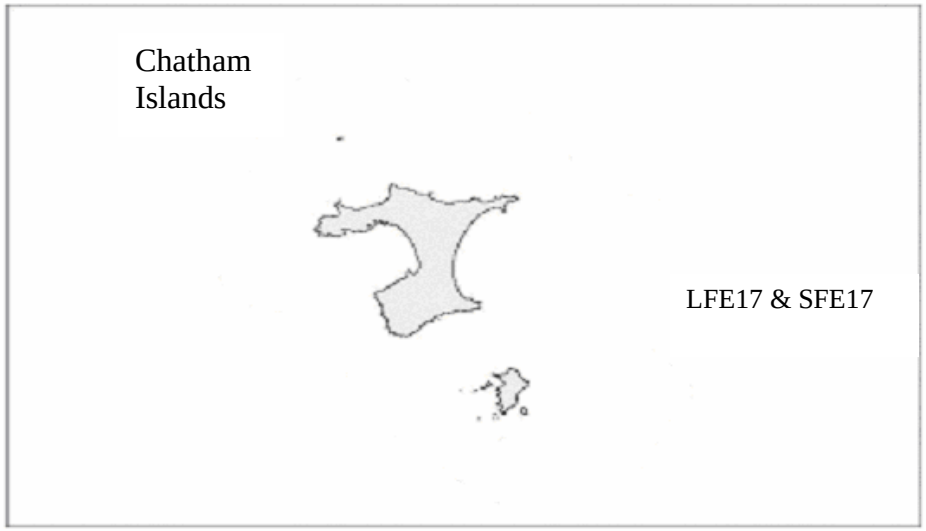
1 The Initial Position Paper (IPP) on the setting of sustainability measures for stocks being introduced into the QMS on 1 October 2003, has been developed for the purpose of consultation as required by s 12 of the Fisheries Act 1996 (the 1996 Act).

2 This section of the IPP should be read in conjunction with the statutory obligations section of the IPP, which sets out what the Minister of Fisheries is required to consider when making decisions in respect to the setting of sustainability measures under s 11 of the 1996 Act.

Introduction to the Quota Management System (QMS)

3 The Chatham Islands freshwater eel fishery (*Anguilla australis*—shortfin, *A. dieffenbachii*—longfin, and *A. reinhardtii*—Australian longfin) is to be introduced to the quota management system (QMS) on 1 October 2003 as two stocks, **shortfin/Australian longfin** and **longfin**. The quota management area (QMA) for the fishery has been determined as illustrated in Figure 1, which follows the standard fisheries management area (FMA) for area 4. The fishing year for these stocks will be from 1 October to 30 September, and TACCs and ACEs are to be expressed in greenweight.

Figure 1



4 The decision to introduce the Chatham Islands freshwater eel fishery into the QMS as two stocks enables the Crown's obligation to ensure the sustainable use of each species to be met. Where the population of one species is significantly smaller than the other, there is the likelihood (if two species are introduced into the QMS as a single stock) that the less common species, or less productive species, could become depleted over time without specific controls. Alternatively, if stocks are managed to ensure the sustainability of the more vulnerable species, full utilisation of the other species may not be provided for.

Species Information

Species Biology

5 Worldwide, there are 15 species of freshwater eel. The two main species found in New Zealand are the shortfin eel (*Anguilla australis*) and the longfin eel (*A. dieffenbachii*). A third species, the Australian longfin (*A. reinhardtii),* has recently been identified in the upper part of the North Island. The population of this species is small. The shortfin eel is found in New Zealand, South Australia, Tasmania, and New Caledonia. The longfin eel is endemic to New Zealand and offshore islands. Each species consists of one separate biological stock throughout New Zealand fisheries waters. The Australian longfin has not been recorded in the Chatham Islands.

6 Longfin and shortfin eel species occur in abundance throughout New Zealand, including the Chatham Islands. The two species have overlapping habitat preferences, with shortfin eels predominating in lowland lakes and muddy rivers, while longfin eels prefer stony rivers and can penetrate further inland to high country lakes. No survey of the species composition of the eel population in the Chatham Islands has been undertaken. It is likely that the coastal lakes and Te Whanga Lagoon would have predominantly shortfin populations, while longfin eels would be found in the lagoon's tributaries.

7 All species breed at sea only once, and die after spawning. The exact location of the spawning grounds within the South Pacific is not known. The spawning ground for the longfin eel is thought to lie east of Tonga, while the spawning ground for shortfin eels is further west, possibly northeast of Samoa. Larvae (*leptocephali*) are transported to New Zealand via the South Equatorial Current, and the metamorphosed juveniles (glass eels) enter freshwater from August to November.

8 The growth of eels in freshwater is variable and dependent on food availability, water temperature, and the density of eels. Growth rates, determined from commercial catch sampling programmes through 1995-96 and 1996-97, indicate that, in both the North and South Islands, rates are highly variable within and between catchments. Shortfin eels often grow considerably faster than longfin eels even when they are from the same location. South Island shortfin eels take, on average, nearly 13 years to reach the minimum commercial legal size of 220 grams, compared with 17½ years for longfin eels. In the North Island the equivalent times are nearly six and nine years respectively. No comparable data exists for the Chatham Islands.

9 Adult eels undertake an autumnal migration to the sea to spawn. The maturation of each sex occurs within a well-defined length range. The recruitment of juvenile eels back into freshwater is dependent on the spawning escapement from the range of habitat in which the adults are found. Unlike many fisheries, the harvest of eels is based on immature stocks before spawning.

10 The relationship between spawning escapement and recruitment is not known. Noting that longfin eels are endemic to New Zealand, NIWA has expressed concern about the status of this single genetic stock, which covers one spawning ground and is spread over a large geographic area including the Chatham Islands.

11 The contribution that areas lightly fished and areas closed to fishing make to spawning escapement has not been determined. Noting that recruitment into any particular catchment is dependent on the spawning success of the total spawning populations, which results from escapement of eels from throughout the country (including the Chatham Islands), current research is directed at establishing the contribution areas closed to fishing might make to the spawning escapement of both longfin and shortfin species.

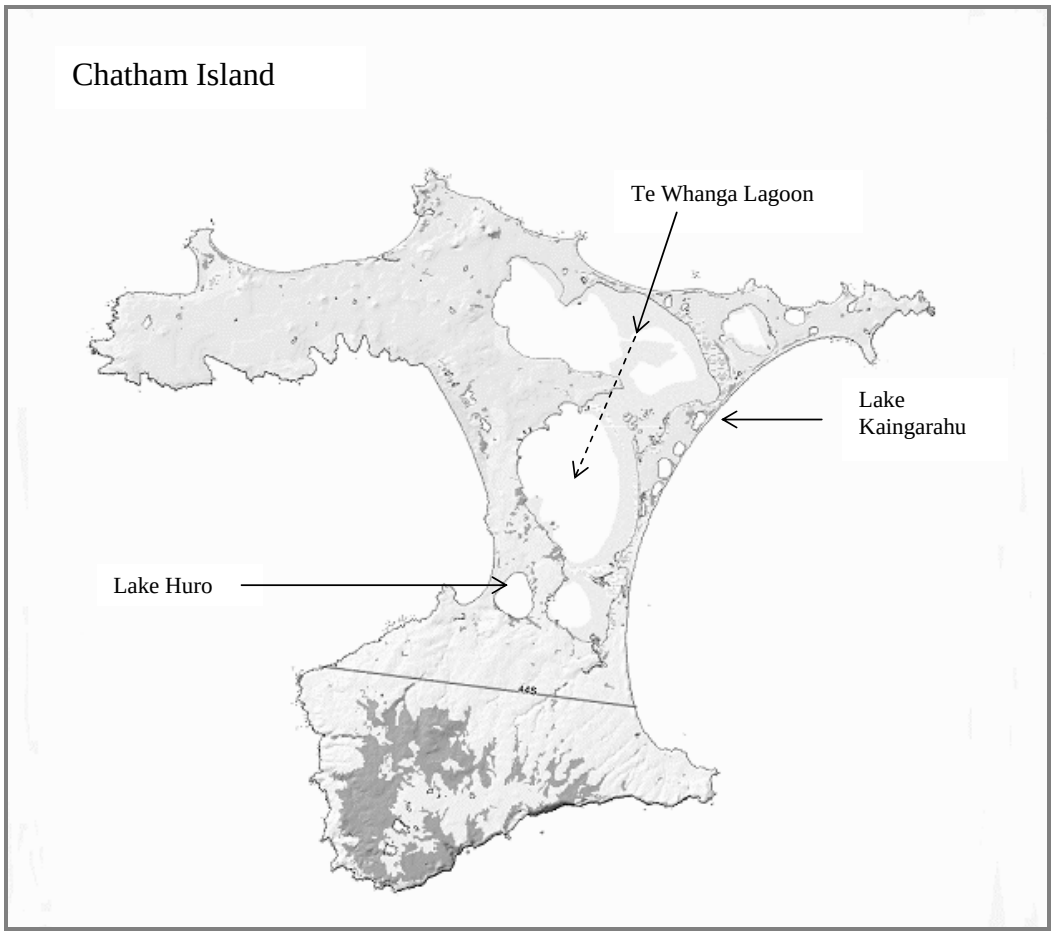
12 NIWA has expressed concern about the recruitment of longfin eels, with evidence of gaps in recruitment in some years for this species, but recently published data on glass eel arrivals over a five-year period shows no evidence of a declining recruitment for this species.

Fisheries Characteristics

Commercial catch

13 Commercial eel fishing using fyke nets began at the Chatham Islands in 1970 with landings in that year of around 42 tonnes. The fishery went into recess for a few years but, as a result of higher prices being paid on international markets, was re-activated in 1979. In that year, over a three-month period from the middle of February to the middle of May, approximately 47 tonnes were landed, of which about eight tonnes were taken from Lake Kaingarahu and 39 tonnes from Lake Huro (Figure 2.)

Figure 2



14 Lake Huro, near the main centres of Waitangi and Te One, is an area of about 775 hectares and is primarily a shortfin eel resource. Access to the sea is through the Mangape Creek via the Nairn River where both shortfin and longfin eels are found. Lake Kaingarahu, near Kaingaroa, is approximately 230 hectares and has access to the sea through Te Whanga Lagoon. Lake Kaingarahu is known to contain both shortfin and longfin eels.

15 Te Whanga Lagoon, while much larger than the sum of all the lakes combined on Chatham Island at over 19,000 hectares, has an abundance of eels but is not suitable for fishing with fyke nets due to the presence of weed. Tributaries that feed into the lagoon contain eels, particularly Te Awainanga River, as do all rivers and lakes throughout Chatham Island. However, Te Whanga Lagoon and its tributaries were closed, at the request of Moriori, by regulation to all commercial fishing in December 1997 due to the lagoon's spiritual and culture significance. The closure recognises and provides for the use and management practices of tangata whenua.

16 Although there is a considerable amount of information on the biology and ecology of eel species, there is relatively little that can be used to assess the status of exploited stocks. There have been no assessments of sustainable yield nor are there estimates of biomass or trends in relative abundance for either eel species, shortfin or longfin. Standard population models are inadequate to describe eels because of their unusual biology.

17 However, catch per unit effort (CPUE) data and analysis has established trends in the major fishing areas throughout New Zealand for the period 1990-1991 to 1998-1999. The Chathams Islands was not included in the analysis. Data was analysed by eel return areas (ERAs). Shortfin eel CPUE indicated a statistically significant decline in ERAs 14 and 16 (Marlborough and North Canterbury). Significant declines in CPUE for longfin eels were found in ERAs 2 and 3 (Auckland and Hauraki), 8 to 12 (Rangitikei-Wanganui, Taranaki, Manawatu, Wairarapa, and Wellington), 17 to 19 (North Canterbury, Waitaki, and Otago), and 20 (Southland). The largest decline was in Southland.

18 A summary of reported commercial catch for fisheries management area (FMA) 4 is shown in Table 1. Note there was no take from 1991-92 through to 1997-98 inclusive.

Table 1: **Total reported landed catch (tonnes greenweight) of freshwater eel (LFE/SFE) for FMA 4 by fishing year by all methods and target species taken from the landed section of Catch Effort Landing Returns. Fishing years extend from October to September the following year.**

Fishing Year(s)	LFE	SFE	Total
1990-91	2.488	7.325	9.813
1991-98	nil	nil	nil
1998-99	11.274	11.333	22.607
1999-00	3.021	6.559	9.580
2000-01	0.120	1.310	1.430
2001-02	nil	nil	nil

19 The number of people fishing for eels at the Chatham Islands from when commercial fishing started in 1970 is unknown, although there is talk of over 40 active permits during the 1970s. Part-time fishers were excluded from the fishery in 1984, and a policy of not issuing further permits was adopted in 1986 in response to concerns about the sustainability of the fishery throughout the country due to the potential to increase effort.

20 As a result of the statutory moratorium on the issue of new non-QMS permits for eels in 1988 (and all other non-QMS species in 1992), no new permits were issued after

1986. From the 1990-91 fishing year, only one active permit has been in existence. Landings, therefore, in Table 1 can be attributed to a single fisher.

21 The fisher did not fish in the 1991-92 fishing year. The permit subsequently lapsed and was not re-issued until 1998. As shown in Table 1, landings fluctuated markedly from a high of just under 23 tonnes in 1998-99, after a lengthy period without commercial fishing, to less than ten tonnes in 1990-91 and again in 1999-00, to less than 1½ tonnes in 2000-01. MFish understands that economics related to the international market for larger eels ie, eels between one and two kilograms, dictated fishing effort in 1999-00.

22 The reduction in landings in 2000-01 is a reflection on the economics of eel fishing at the Chatham Islands, with the cost of flying eels to the 'mainland'[1] being out of all proportion to the price being paid for these species. The same situation existed in 2001-02; accordingly, no commercial fishing was undertaken.

23 Table 1 shows that about 50% of landings in 1998-99 were longfin eels. This can be attributed to the fisher, who was unaware of the restrictions on commercial fishing that had been introduced since he last fished in 1991 in respect to the tributaries that flow into Te Whanga Lagoon—they contain a relatively high proportion of longfin eels—and the absence of any commercial fishing for over seven years.

24 In other years, 1990-91, 1999-00, and 2000-01, the percentage of longfin to shortfin landings ranges from 8% to just over 30%. The catch data, however, is insufficient to draw any conclusions about the species composition of the fishery.

Customary and recreational catch

25 The extent of non-commercial fishing for eels at the Chatham Islands is unknown.

26 Quantitative information on the level of customary take is not available, although Chatham Islands' Moriori and Mäori undoubtedly used eels as a major food source.

27 Surveys of recreational catches, including the MAF telephone and diary estimates of amateur catch and effort between 1991 and 1994 and the more recent MFish survey in 2000, did not include the Chatham Islands.

Illegal catch and other sources of mortality

28 The use of escapement tubes in fyke nets in the Chatham Islands eel fishery is believed to result in a relatively low mortality of the commercial catch, although there is no quantitative information on this or on the level of illegal catch. The latter is likely to be negligible, if at all, given the scale of commercial activity in this fishery.

29 Other sources of mortality, although not caused by fishing, result from habitat degradation such as drainage channel clearing, drainage, and spraying.

Regulatory Framework

30 No annual competitive catch limit is set for the Chatham Islands eel fishery.

[1] Term used to describe both the North and South Islands of New Zealand.

31 Eels are subject to the moratorium on the issue of new non-QMS fishing permits. While current permits are limited to one and the permit itself was in abeyance for a number of years, the lack of participation, while constraining access to eel stocks at the Chatham Islands, is not believed to have created difficulties for the Islands. Rather, there has been general acceptance, or even a preference by tangata whenua, for eel stocks to be managed as a non-commercial fishery.

32 A number of areas within the coastal waters of Chatham Island and Pitt Island are closed to commercial fishing by regulation. In terms of inland waters, commercial fishing is also prohibited in Te Whanga Lagoon and its tributaries.

33 There is a national commercial minimum legal size limit for both shortfin and longfin eels of 220 grams. Unlike the South Island, which has a maximum legal size of four kilograms for each species, there is no maximum legal size in the Chatham Islands (or the North Island). There is no legal size for the recreational sector.

34 Commercial fishers in the Chatham Islands (and the North Island) are required by regulation to have 25 mm escapement tubes in fyke nets, although MFish is advised that 50 mm escapement tubes have been used at the Chatham Islands for a number of years. In the South Island the minimum size is 28 mm but, by voluntary agreement, 31 mm escapement tubes are used by the majority of fishers.

35 A daily limit per person of six eels applies under amateur fishing regulations.

Fisheries Assessment

36 There are no estimates of current or reference biomass for the Chatham Islands freshwater eel fishery. Therefore, it is not known if recent landings are sustainable or whether they will allow stocks to move towards a size that will support the maximum sustainable yield (MSY).

37 **Estimates of fishery parameters and abundance**—the only data on population densities apply to small areas and have limited application to the rest of New Zealand, including the Chatham Islands. Given that stocks of both species are comprised of many heterogeneous populations, and given the quality of catch data, little emphasis has been placed on estimating stock size and levels of exploitation.

38 **Biomass estimates**—only limited data exist for small watercourses. Estimates of current and reference biomass are not available.

39 **Estimation of Maximum Constant Yield (MCY)**—an estimate of MCY for the New Zealand eel fishery is provided based on 1996–97 catch data sourced from the commercial sector. While the non-commercial component of this fishery is important, catch from this sector is unknown and no allowance has been made for it when estimating the following yield.

40 MCY was estimated using the equation MCY = cY_{av}. Based on the above estimates of M, the natural variability factor, c, was set at 1.0. The 'best estimate of annual catch' data were used to estimate Y_{av} for the period 1983–95 to 1996–97 (data from licensed fish receiver returns), during which time the fishery was relatively stable. The resultant average is 1 369 tonnes.

$$MCY = cY_{av} = 1.0 * 1\,369 \text{ tonnes} = 1\,369 \text{ tonnes (rounded to 1 370 tonnes)}$$

41 MFish stresses that this is an estimated commercial national total. While there is little relevance to the Chatham Islands eel fishery, it is noted that annual total commercial landings for the whole country over the last ten years have averaged just over 1 300 tonnes.

42 **Estimation of Current Annual Yield (CAY)**—CAY cannot be estimated because there are no estimates of current biomass.

Environmental Issues

43 The eel fishery is target specific, and eels are trapped in a manner that retains them alive until the point of processing. The primary method for harvesting eels is fyke nets, which contain escapement tubes, and is relatively selective. The fishing method has little direct environmental impact, particularly as eeling is a stationary activity and nets are small and lightweight.

44 The only by-catch of any significance of associated or dependent species in this fishery is possibly mullet or flounder, although neither of these species is likely to be found in the areas that are open to commercial eeling at the Chatham Islands. Like these two species, other by-catch, such as trout, perch, and *Galaxiid* species, are retained alive and released unharmed at the time nets are lifted. A potential exception to this is birds, such as ducks or shags, which may become entangled or entrapped in a net.

Current and Potential Research

45 There are no MFish research projects for the Chatham Islands freshwater eel fishery for the current fishing year nor are there any proposals for the 2003-04 fishing year. On a national basis, however, a research project is directed at establishing the contribution areas closed to fishing might make to the spawning escapement of both longfin and shortfin eel species.

Social, Cultural, and Economic Factors

46 Input from tangata whenua about the management of the freshwater eel fishery at the Chatham Islands has relevancy for each species, shortfin and longfin, particularly in relation to the proposal to set a TAC and, more importantly, a TACC for longfin eels. The significance of the customary value of the eel fishery also needs to be carefully considered when management options for the fishery as a whole are being developed.

47 The total commercial economic value of New Zealand's freshwater eel fisheries is around $5.2 million a year based on average landings over the past ten years (1 300 tonnes) at a port price of $4 000 a tonne. The contribution the Chatham

Islands' component of the fishery makes to this total is very small, ranging from about $6 000 to $90 000 based on landings expressed in Table 1.

48 Setting TACs and TACCs, where appropriate—recognising the need to provide for sustainable utilisation—and providing allowances for customary and recreational use as well as fishing related mortality, will provide social and cultural benefits by ensuring the sustainability of Chatham Islands eel stocks. Sustainability measures for these stocks will also provide for the interest of future generations.

Other Information Impacting on Management Measures

49 MFish is not aware of any provisions in any strategy or planning document under the Resource Management Act or Conservation Act that are relevant to the setting of sustainability measures for the Chatham Islands freshwater eel fishery.

50 There are no relevant fisheries plans approved that would have any bearing on the setting of a TAC for the two fishstocks and, similarly, no decisions have been made to require conservation services or fisheries services relevant to the Chatham Islands eel fishery.

51 The Department of Conservation recently classified longfin eels as in 'gradual decline' following its review of the threatened status of native flora and fauna. The classification is the lowest threat ranking and indicates an expected decline of 5 to 30% over the next ten years and into the future if current threats continue.

52 Factors leading to the classification were the estimated decline in recruitment; fishing-pressure and a decline in the catch per unit effort; loss of habitat due to fish passage barriers, water abstraction and other habitat modification; and the implications of a sex ratio bias (skewed towards males) in areas of the South Island. The combination of these factors is thought to place longfin eels at risk of decline, however, as the Department notes, there is no threat of extinction.

TACs, TACCs, and Allowances

53 In accordance with the decision to bring the Chatham Islands freshwater eel fishery into the QMS as two distinct stocks, ie, longfin and shortfin that includes the Australian longfin, the following discussion on TACs, allowances, and TACCs reflects that decision.

TAC Management Strategy

54 The Minister noted last year that the approach to mange the shortfin and longfin species separately, by way of different codes, provides an assurance that the Crown will meet its obligations to ensure the sustainable use of each species. The Minister noted that each species might warrant different sustainability settings.

55 In deciding on the QMA for the Chatham Islands freshwater eel fishery last year, the Minister also noted that preferred long-term approaches to harvesting eels might include rotational harvesting or harvesting across small spatial scales. There is insufficient information at present and it is not practical to set catch limits on the preferred spatial scale for eel management ie, by sub-areas. The QMA does provide

the boundary within which quota holders and stakeholders can practise small-scale rotational, or other harvest techniques. To assist quota holders and stakeholders, MFish has introduced the ability to report using sub-statistical reporting areas in the freshwater eel fishery as it is progressively introduced into the QMS.

56 MFish proposes the default management option for TAC setting under s 13 of the 1996 Act for the Chatham Islands eel fishery. Under this section, there is a requirement to maintain the biomass of a fishstock at a target stock level being at, or above, a level that can produce the MSY having regard to the interdependence of stocks.

57 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. It is not known, however, whether the Chatham Islands eel fishery is currently operating above or below MSY—s 13(2)(b)(c) of the 1996 Act.

58 Alternative TAC management strategies under ss 14 or 14A of the 1996 Act are considered either inappropriate, or unable to be applied in respect to the Chatham Islands eel fishery. While it is not known whether this fishery is operating above or below MSY, MFish maintains that the purpose of the Act would be better achieved under s 13 of the Act than any alterative approach provided by s 14 given the size of the fishery and the attempt to work within s 13 of the Act.

59 MFish notes, however, that s 14 of the 1996 Act allows eels to be added to the Third Schedule and managed under alternative TAC options if practical in the future. South Island eel stocks, which are managed under the QMS, are already listed on this schedule. In terms of the latter section ie, s 14A, it is noted that eels are a target fishery and are not taken as an incidental by-catch when targeting other stocks. Therefore, this section cannot be applied to the Chatham Islands eel fishery.

60 Accordingly, the preferred option for the Chatham Islands eel fishery is to set sustainability measures under s 13 of the 1996 Act that supports the biomass at, or above, a level that can produce the MSY.

61 MFish acknowledges the need to provide a degree of utilisation in respect to the Chatham Islands eel fishery while at the same time ensuring the sustainability of each of the two species. MFish again notes the concern that has been expressed over the status of one of the species, the endemic longfin eel. The following proposals seek to balance a level of utilisation within the TAC for this stock, while taking a precautionary approach in respect to its long-term sustainability.

62 TACs, allowances, and TACCs in tonnes greenweight, proposed for the Chatham Islands freshwater eel fishery are outlined in Table 2. MFish provides two options for consideration in respect of the longfin eel.

Table 2: Proposed TACs, Allowances, and TACCs for the Chatham Islands Eel Fishery

Stock	TAC	Customary allowance	Recreational Allowance	Other sources of fishing-related mortality	TACC
SFE 17	15	3	1	1	10
LFE 17					
(Option 1)	2	1	1	0	0
(Option 2)	3	1	1	0	1

Rationale for Proposed TACs

63 No reliable stock assessment information or estimates of biomass are available for the Chatham Islands freshwater eel fishery, SFE 17 or LFE 17. There are no CCLs for these stocks. In the absence of other stock information, including appropriately set commercial limits, proposed TACs for target fisheries are usually based on known or estimated levels of recreational, customary, and commercial catch and all other sources of fishing-related mortality.

64 Commercial catches of shortfin and longfin eels have fluctuated quite markedly from a high of over 22 tonnes in 1998-99, when fishing resumed after a period of seven years, to just under ten tonnes in 1990-91 and again in 1999-00, to about 1½ tonnes in 2000-01. There was no commercial fishing in 2001-02.

65 There are no estimates of customary or recreational harvest for the eel fishery at the Chatham Islands. There is also no information on the level of other sources of mortality caused by eel fishing at the Chatham Islands.

66 Given the absence of any commercial fishing in eight of the last twelve years, MFish is of the view that using average landings would not be appropriate when setting a TAC or a TACC. Another approach would be to be guided by the MCY, however, the contribution that the Chatham Islands eel fishery makes to the estimate of MCY of 1,370 tonnes for the fishery across the country is insignificant. It is proposed to set a TAC of 15 tonnes for short fin eel and a 2 or 3 tonne TAC for longfin eels. Combined with this approach, the fishery is to be monitored and reviewed as part of the annual stock assessment process. The proposed TACs are based primarily on consideration of habitat available to the species, biology and information on abundance. Consideration has also been given to available catch data, although MFish note that historical catch is not a good indicator of abundance given the impact of permit moratorium and fluctuating use of the fishery by permitted fishers. MFish considers that the proposed TACs best balance the need to provide for utilisation with ensuring sustainability.

67 In 1998-99, commercial landings of shortfin and longfin eels were almost equal, but in three other years landings of shortfin eels outweighed landings of longfin eels by as much as 90%; the range being from to 69% to 92%. The near equal landings in 1998–99 can be attributed to no commercial activity over a seven year period (1991–92 to 1997-98) and some fishing being undertaken in Te Awainanga River–the fisher was unaware that restrictions in respect to the tributaries that flow into Te Whanga Lagoon, of which the above mentioned river is one, had been introduced in 1997. In other years, the marked predominance of shortfin is a reflection of the likely

balance of the two species and the lack of suitable habitat for the longfin eel, particularly since 1999, with access to this habitat being restricted by an extensive regulated closure.

68 Some concerns have been expressed over the status of the longfin component of the eel fishery by both NIWA and the Department of Conservation, the latter recently classifying this species as being in 'gradual decline'. The former, NIWA, has advised that data from commercial catch sampling in the more heavily fished main stem rivers and lakes shows an absence of longfin females and shows few adult female longfin eels above the minimum size at migration. NIWA notes that this data is only representative of commercial catches and may not represent more lightly or un-fished populations. MFish has carefully considered TAC options for the longfin fishery. Given the extent of the closed areas (particularly to commercial fishing) and information on abundance of this species, MFish does not consider that a greater level of utilisation can be provided at this time. MFish note that the 3 tonne option has greater regard to historical catch in the fishery. MFish notes that landings of longfin eels, as a percentage of total landings in the Chatham Islands in 2000-01, was less than 10%. The Chatham Islands' longfin eel does not differ from those in the rest of New Zealand. Therefore, given the proposal to provide nominal level of utilisation, escapement of this species for eventual spawning from the Chatham Islands, although small, will assist in overall recruitment being a single genetic stock that is spread over a large geographic area, including the Chatham Islands.

Proposed Allowances and TACC

69 MFish notes that information about the existing catch in a stock can be used as a guide when considering allocation, but is not necessarily determinative of the final allocation. The Minister makes a separate decision on allocation of allowances that may not reflect the current catch of each stakeholder group.

Recreational allowance

70 When allowing for recreational interests in setting or varying any TACC, the Minister shall take into account any regulations that prohibit or restrict fishing under s 311 of the 1996 Act—s 21(5) of the Act refers. No regulations have been made under s 311 of this Act that prohibit or restrict fishing at the Chatham Islands.

71 MFish propose to set a recreational allowance of 1 tonne with the TAC for LFE and SFE for recreational fishers. Recreational fishing around the Chatham Islands is common, particularly in Te Whanga Lagoon where eels and flounders may be targeted, and in the 14 designated non-commercial marine areas around Chatham and Pitt Islands. This use, however, must be balanced with the relatively small population and the limited, but increasing, tourism targeted at the recreational fishing experience at the Chatham Islands.

72 While constraining utilisation for LFE based on concerns over abundance, MFish note that recreational fishers have access to a number of areas that contain a relatively high proportion of longfin eels that are closed to commercial fishing. Given the greater opportunity to take this species, MFish consider it reasonable to provide a nominal allowance to provide for utilisation of this species within the bounds of sustainability.

73 Recreational interests may wish to indicate whether they consider these allowances as being sufficient to meet their current and foreseeable needs, in addition to identifying sites where recreational fishers take eels. Information about the current state of the non-commercial fishing areas around the Chatham Islands, in particular Te Whanga Lagoon, would also be of value to MFish.

Customary Mäori allowance

74 When setting or varying any TACC, s 21(4)(i) of the 1996 Act states that the Minister must take into account any mätaitai reserve in the relevant QMA when allowing for Mäori customary non-commercial interests. Further, when allowing for this interest, the Minister must also take into account any area closure or any fishing method restriction or prohibition made under s 186A of the 1996 Act—s 21(4)(ii) of the Act refers.

75 No closure, restriction or prohibition has been made under s 186A of the 1996 Act in respect to the Chatham Islands. Mätaitai reserves have not been established in the relevant QMA, as Tangata Kaitiaki/Tiaki are yet to be appointed for the Chatham Islands under the Fisheries (Kaimoana Customary Fishing) Regulations 1998.

76 The level of take of freshwater eels for Mäori customary non-commercial purposes is unknown—it is also difficult to separate customary and recreational take. Functions are held on marae and there is anecdotal information that a reasonable number of freshwater eels are taken for the purpose of sustaining these functions.

77 Given the importance to Mäori of these species at a customary level and the likely level of customary harvest, MFish proposes to set the customary allowance above what is proposed for the recreational sector, being four tonnes. The proposal is to split this allowance disproportionately between shortfin and longfin ie, three and one tonnes respectively, in the knowledge that the overall fishery is predominantly shortfin but that the tributaries that flow into Te Whanga Lagoon, in particular Te Awainanga River, contain a relatively high proportion of longfin eels.

78 MFish requests that tangata whenua provide submissions on the proposed level of customary take in the fishery, particularly in respect to longfin eels from, for example, Te Awainanga River, and also on the option to manage longfins as a non-commercial fishery.

Allowance for other sources of mortality

79 MFish has noted that the use of fyke nets in the Chatham Islands eel fishery is believed to result in a relatively low mortality of the commercial catch, although there is no quantitative information on this or on the level of illegal catch. The latter is likely to be negligible, if at all. Accordingly, for the purpose of setting a TAC, a nominal one tonne allowance is proposed to cover other sources of mortality caused by fishing in the shortfin component of the fishery.

TACC

80 The non-QMS permit moratorium and the inactive permit for seven years between 1991-92 and 1997-98 have had an impact on the commercial eel fishery at the Chatham Islands.

81 The reported species composition of landings over four years out of the past 12 does not provide an accurate profile of the species composition of the Chatham Islands eel fishery. The distribution of the fishery in areas open to fishing would suggest that the future fishery would be predominantly shortfin.

82 MFish proposes that the TACCs for the Chatham Islands eel fishery be set at ten tonnes for shortfin eels and either zero or one tonne for longfin eels. The first option covering longfins effectively creates a non-commercial fishery for this species, noting it is a single genetic stock that only occurs in New Zealand. The first option reflects the desire to restrain utilisation based on concerns over abundance and the fact that large areas of longfin habitat are not open to commercial fishing. It is therefore unclear whether a significant fishery for longfin can operate in remaining areas. The second options reflects to an extent (within the bounds of sustainability) the historical commercial catch of longfin and provides the opportunity for nominal levels of utilisation in line with those provided to stakeholders. MFish notes that improved reporting following the clear separation of species after introduction into the QMS will provide more information on harvest of longfins. The one tonne TACC will provide an opportunity to examine the impacts of commercial harvest following introduction. Further adjustment can be made to the TACC following introduction if information indicates more utilisation can be provided for.

83 MFish requests that the commercial sector, including tangata whenua, provide submissions on the proposed TACCs, particularly in respect to longfin eels and the options to set a nominal TACC or to manage longfins as a non-commercial fishery.

Other Management Measures

84 A separate section in this document sets out the generic information on the setting of deemed values, and provides stock-specific information in relation to interim and annual deemed values proposed for the Chatham Islands freshwater eel fishery. MFish notes at this point, however, the ability under s 75(5) of the 1996 Act to set different deemed values for Chatham Islands' stocks.

85 The document also contains information on the setting of over-fishing thresholds and tolerance levels. MFish notes that an over-fishing threshold and tolerance level is proposed for the Chatham Islands eel fishery, being single species target fisheries, ie, shortfin and longfin.

Consideration of Schedules

86 MFish notes that there are optional QMS management measures provided by the 1996 Act that should be considered prior to the Chatham Islands eel fishery becoming part of the QMS. These include:

- the Second Schedule that lists stocks where abundance is highly variable—the

TAC of stocks on this schedule can be increased during a fishing year;

- the Third Schedule that list stocks managed with an alternative TAC;
- Schedule 5A that lists stocks to which ss 67A and 340A of the 1996 Act do not apply—these sections allow for under-fishing rights;
- the Sixth Schedule that lists stocks which may be returned to the water in accordance with stated requirements; and
- the Eighth Schedule that lists minimum annual holdings of ACE for specified stocks.

Schedule 2

87 MFish notes that South Island eel stocks, ie, ANG 11 to ANG 16 are listed on this schedule. The primary driver for the inclusion of these stocks on this schedule was to manage the variability associated with the Lake Ellesmere eel fishery, whereby an in-season mechanism was made available in order to take unlimited migrating male eels under certain conditions. MFish is of the view that this ability is not required in respect to Chatham Islands eel stocks.

Third Schedule

88 MFish also notes that South Island eel stocks are listed on this schedule. However, in terms of the Chatham Islands eel fishery, MFish is of the view that having the ability under s 14 of the 1996 Act to manage these stocks with an alternative TAC, which the Third Schedule provides, is not appropriate at this point in time given the size of this fishery and the attempt to work within s 13 of the Act ie, to estimate MSY. Rights holders, once this fishery is managed under the QMS, may wish to consider this option as part of the development of a fisheries plan.

Schedule 5A

89 This schedule provides an exception to the allocation of additional ACE in case of under-fishing and transitional provisions related to under-fishing. MFish notes that South Island eel stocks are listed on this schedule being single target medium-value fisheries. Along with these stocks, and to ensure consistency, there is no reason why under-fishing rights should not apply in the Chatham Islands eel fishery. It is a target fishery—neither is the fishery a by-catch of any other fishery. MFish therefore recommends that the Chatham Islands shortfin and longfin eel fisheries, ie, SFE 17 and LFE 17 be added to Schedule 5A. In acknowledging the proposal to set a zero TACC for longfin eels ie, option one, the recommendation in respect to this species is to cater for the possibility that commercial access to this stock may be provided in the future.

Sixth Schedule

90 This schedule includes stocks that may be returned to the sea in accordance with stated requirements. In terms of freshwater eels, this allows for a commercial fisher to return any eel of legal size to the waters from which it is taken if it is likely to survive, and the return takes place as soon as practicable after it has been taken. MFish notes

that freshwater eel in all New Zealand fisheries waters is already listed on the Sixth Schedule.

Eighth Schedule

91 This schedule lists minimum annual holdings of ACE for specified stocks. MFish notes that South Island eel stocks are listed on this schedule with minimum holdings of four tonnes. These stocks, along with other fisheries on this schedule, are effectively medium to high-value single target fisheries. The Chatham Islands eel fishery falls within this category, but, given the scale of this fishery, MFish questions, firstly, the need and, secondly, the size of any minimum holding. Generally, the rationale for including these fisheries on the Eighth Schedule has been to limit the numbers in each fishery as the very nature of them is potentially conducive to 'part-timers'. MFish considers that this is not the case with the Chatham Islands eel fishery, and therefore recommends that this fishery not be added to the Eighth Schedule.

Preliminary Recommendations

92 MFish recommends that the Minister:

a) **Agree** to set the TAC for SFE 17 (shortfin eels—*Anguilla australis* and Australian longfin—*A. reinhardtii*) at 15 tonnes. Within this set:

   i) an allowance for customary interests of three tonnes

   ii) an allowance for recreational fishing of one tonne

   iii) an allowance for other sources of mortality of one tonne

   iv) a TACC of ten tonnes.

b) **Agree** to set the TAC for LFE 17 (longfin eels—*A. dieffenbachia*) at either two tonnes **(option one)** or three tonnes **(option two)**. Within these options set:

   i) an allowance for customary interests of one tonne

   ii) an allowance for recreational fishing of one tonne

   iii) a TACC of zero **(option one)** or a TACC of one tonne **(option two)**.

c) **Note** it is proposed to set over-fishing thresholds for both SFE 17 and LFE 17—discussion of this issue is contained in the deemed values and over-fishing threshold section of this paper.

d) **Agree** to include both SFE 17 and LFE 17 on Schedule 5A.

Amendment to regulations

Consequential Amendments to the Fisheries (Reporting) Regulations 2001

Background

1 It is proposed to make consequential amendments to the Fisheries (Reporting) Regulations 2001 by amending:

- Table 11 of Part 1 of Schedule 3 of those regulations, which specifies the codes to be used when completing catch returns that must be furnished to the Chief Executive. This amendment will incorporate codes that reflect the QMA for Chatham Islands freshwater shortfin/Australian longfin eels; and
- Table 2 of Part 1 of Schedule 3 of those regulations defining the specific QMA defined by the Minister in his declaration notice of October 2002—new stocks subject to the QMS.

2 The Fisheries (Reporting) Regulations 2001 provide the framework for the completion and furnishing of statutory catch returns by fishers to the Chief Executive. Information contained in these returns is used for research, stock assessment, enforcement, and administrative reasons including balancing catch against ACE. With the revised QMA established by the Minister, it is appropriate to amend these regulations to ensure that they reflect the Minister's decisions on the QMA for the Chatham Islands freshwater eel fishery.

Problem definition

3 The obligations for fishers to report their catch and the codes used to complete these returns should reflect the Minister's decisions on QMAs for each species to be introduced into the QMS.

Preliminary consultation

4 No direct consultation on the need to amend these regulations has been undertaken as it is a consequential amendment flowing from the Minister's decision to introduce the Chatham Islands eel fishery into the QMS; specifically, the establishment of a QMA for SFE 17 and LFE 17.

Options

5 As the reporting framework is contained in regulations, there is no other option than to amend these regulations.

Costs and benefits of the proposal

6 The proposed amendments clarify the obligations for fishers when completing their statutory returns. Regulatory clarification means fishers are aware of their reporting obligations and complete their returns in the simplest fashion possible.

Administrative implications

7 Minor amendments to forms and explanatory notes will be required consequential to this regulatory amendment.

FRESHWATER EELS (SFE 17 & LFE 17) – CHATHAM ISLANDS – FINAL ADVICE

Initial Proposal

1 It was proposed in the initial position paper (IPP) to set the following TACs, allowances for customary fishing interests, recreational interests and other sources of fishing-related mortality, and TACCs for SFE 17 (shortfin, *Anguilla australis* and Australian longfin, *A. reinhardtii*) and LFE 17 (longfin, *A. dieffenbachii*) stocks (two options) being introduced into the QMS on 1 October 2003 (refer Table 1).

Table 1: Proposed TACs, Allowances, and TACCs for the Chatham Islands Eel Fishery

Stock	TAC	Customary allowance	Recreational allowance	Other Sources of Fishing-Related Mortality	TACC
SFE 17	15	3	1	1	10
LFE 17 Option 1	2	1	1	0	0
LFE 17 Option 2	3	1	1	0	1

2 This proposal is part of a package of measures regarding the introduction of Chatham Islands shortfin and longfin eels into the QMS. Other measures proposed for these stocks have been addressed in a separate advice paper to you and include:

a) placing shortfin and longfin eels on Schedule 5A;

b) providing species codes to be used by eel fishers when completing their statutory catch returns; and

c) setting over-fishing thresholds and deemed values for shortfin and longfin eels.

Biological and Fishery Information

Submissions

3 **The Chatham Islands Conservation Board** has concerns about setting catch limits when there is a lack of biological information regarding species composition, recruitment, growth, biomass, and population trends. The Board also expresses concern regarding spawning escapement and recruitment of freshwater eels and the link to the amount of time that Te Whanga Lagoon is open to the sea.

4 **The Department of Conservation (DoC)** submits that extrapolation from New Zealand data or models is dubious as, in almost every other natural resource the Department has been involved with, the Chatham populations are very distinctive and significantly different from New Zealand ones.

5 **Te Ohu Kai Moana (TOKM)** has strong doubts regarding the application of biological information for freshwater eels from mainland New Zealand to the

Chatham Islands. In addition, TOKM is unhappy with the lack of Chathams-based information on biological and fisheries parameters such as abundance, growth rates, and relative exploitation rates. TOKM urges that Chathams-based data be obtained for the SFE 17 and LFE 17 fisheries as a matter of urgency.

6 TOKM also rejects DoC's classification of longfin eel as being in 'gradual decline'. TOKM notes that there has been a lack of consultation with iwi and TOKM regarding this classification.

MFish Discussion

7 As noted in submissions, and in the IPP, there is no data, specific to the Chatham Islands, available on species composition, recruitment, growth, biomass or population trends of longfin eels or shortfin eels. Nor is there information regarding the relationship between spawning escapement and recruitment of freshwater eels in New Zealand. Therefore, MFish must use the best available alternative information.

8 The only data available is for the shortfin and longfin eel stocks from mainland New Zealand. However, shortfin and longfin eels each consist of one separate biological stock throughout New Zealand. Further, eel growth is generally variable throughout New Zealand, being dependent on food availability, water temperature and eel density.

9 There are no MFish research projects specifically directed at the Chatham Islands freshwater eel fishery for the current fishing year, and none are proposed for the 2003–04 fishing year. However, there are national research projects directed at establishing the contribution that areas closed to fishing might make to the spawning escapement of longfin eels, and the establishment of a time series of data on the recruitment of juvenile eels. These projects have relevance to Chatham Islands eels stocks in that both longfin eels and shortfin eels are panmictic species, each consisting of one biological stock throughout New Zealand.

10 As research knowledge increases, MFish will ensure that this information is taken into consideration in the management of Chatham Islands eels.

11 MFish has forwarded TOKM's submission concerning the recent classification of longfin eels as 'in gradual decline' to DoC. Notwithstanding the status of the classification, it indicates a general level of concern regarding the abundance of longfin eels, which is reflected in the proposed TAC for longfin eels in the Chatham Islands (see para 18).

Environmental Considerations

Submissions

12 The Chatham Islands Conservation Board is concerned about gaps in research and knowledge regarding the ecological role of shortfin and longfin eels within Chatham Islands lagoon, lake and stream habitats.

MFish Discussion

13 MFish agrees that there is little known about the ecological role of shortfin and longfin eels, particularly with regard to the functioning of the Chathams' lagoon, lake and stream habitats. In the absence of such information, MFish is obliged to act with caution in providing recommendations on catch levels for these stocks. A precautionary approach will help ensure that the environmental principles of the 1996 Act are adequately upheld.

TAC Setting Considerations

Submissions

14 TOKM supports the TAC proposed for SFE 17.

15 TOKM does not support either TAC proposed for LFE 17 to the extent that they are based on the Department of Conservation's classification of longfin eels as 'in gradual decline' and that insufficient weight has been placed on commercial landings data from the 1998-99 fishing year.

16 **Leigh Thompson**, a Chatham Islands commercial eel fisher, supports the setting of a TAC of three tonnes for LFE 17 (as set out in option two of the IPP). Mr Thompson submits that most of the lakes and the one river available to be fished have abundant stocks of longfin eels, and a TAC of three tonnes would be appropriate. Mr Thompson suggests that longfin eels be treated as a non-target species, with all large longfin eels returned to the water.

17 DoC questions using the historic catch from one fisher to decide on an appropriate sustainable harvest.

MFish Discussion

18 No reliable stock assessment information or estimates of biomass are available for the Chatham Islands eel fishery, SFE 17 and LFE 17. Given the inadequacy of stock information, MFish proposes a precautionary approach to setting TACs based on the best available information, and monitoring and reviewing the fisheries as part of the annual stock assessment process.

19 MFish agrees with DoC that using the historic catch from one fisher would not be appropriate when setting a TAC or a TACC for the Chatham Islands eel stocks. The proposed TACs are based primarily on consideration of habitat available to the species, biology, and information on abundance.

20 The proposed TACs have been set with regard to the s 13 obligation to set the TAC at, or above, a level that will move the stock towards maximum sustainable yield (MSY). Some concerns have been expressed over the status of the longfin component of the eel fishery by both NIWA and DoC (refer to IPP, para 10 & 68). For this reason, MFish's TACC proposals place greater weight on the catch of shortfin eels relative to longfin eels (15 tonnes TAC for SFE 17 and either two or three tonnes for LFE 17 - options one and two, respectively).

21 The commercial catch data from the 1998-99 fishing year is discussed in the TACC section below (para 23, 30, 31).

TACCs and Allowances

Submissions

22 TOKM supports the proposed TACCs and allowances for SFE 17.

23 TOKM does not support either TACC option for LFE 17. TOKM would like greater weight placed on the 1998–99 commercial catch data for LFE 17, but does accept that an ongoing catch of 11 tonnes may not be sustainable based on the decline in abundance of longfin eels in South Island rivers. Instead, TOKM proposes that a TAC for LFE 17 be set at seven tonnes, with customary and recreational allowances being one tonne each, and a TACC of five tonnes.

24 Leigh Thompson submits that there must be a small entitlement of longfin eels, as suggested in option two, as some longfin eels will unavoidably be landed as bycatch.

25 Mr Thompson also believes that taking one tonne of longfin eels commercially will not have any effect whatsoever on sustainability. As there are eight lakes and one main river open to commercial fishing, he feels a TACC for longfin eel of one tonne is overly cautious.

MFish Discussion

Recreational Allowance

26 No submissions regarding recreational allowances were received. The IPP contains a discussion of matters relating to the setting of the recreational allowances (refer IPP para 70 – 73).

Customary Allowance

27 No submissions regarding customary allowances were received. The IPP contains a discussion of matters relating to the setting of the customary allowances (refer IPP para 74-78).

Other Sources of Fishing-Related Mortality Allowances

28 No submissions regarding other sources of fishing-related mortality were received. The IPP contains a discussion of matters relating to the setting of the allowances for other sources of fishing-related mortality (refer IPP para 79).

TACCs

29 The MFish initial proposals were that the TACCs for the Chatham Islands eel fishery be set at ten tonnes for shortfin eels and either zero or one tonne for longfin eels. The latter would allow for some non-commercial utilisation of the longfin stock while being cautious in the face of uncertainty and concern regarding the sustainability of longfin stocks throughout New Zealand (refer IPP para 10, 12 and 68). However, if the status of longfin eels improves in the longer term, commercial access to this species at the Chatham Islands could increase.

30 As noted in the IPP, eel landings in the Chatham Islands have fluctuated markedly in recent years. Commercial landings of both longfin eels and shortfin eels were made in only four of the past twelve years (1990-91 & 1998-99 to 2000-01). The catch recorded in 1998-99 was taken after a period of seven years when no commercial fishing occurred. Further, although 50% of the landings in 1998-99 were longfin eels, it should be noted that the longfin take is attributed to a single fisher who was unaware at the time that restrictions had been placed on commercial fishing in tributaries that flow into Te Whanga Lagoon. These tributaries contain a relatively high proportion of longfin eels.

31 In the other three years (1990-91, 1999-00, 2000-01), the percentage of longfin landings varied from 8% to just over 30% of total landings. However, the reported species composition of landings over four years out of the past twelve does not provide an accurate profile of the species composition of the fishery. Taking into account the habitat and the distribution of the fishery in areas open to fishing, it is highly likely that the future Chatham Islands eel fishery will predominantly consist of the take of shortfin eels.

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Social, Cultural and Economic Factors

Submission

32 DoC notes that creation of quota for Chatham Islands eel stocks will likely result in eventual sale and ownership by New Zealand mainlanders, perpetuating the adverse effects this has caused to the Chathams community, especially iwi.

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MFish Discussion

33 Upon introduction into the QMS, 20% of Chatham Islands shortfin and longfin eel quota will be allocated to Mäori. Surplus quota, as required by legislation, will be allocated to the Chatham Islands Enterprise Trust.

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Other Management Measures

Submissions

34 Leigh Thompson submits that the longfin eel be treated as a non-target species, with all large longfin eels (over 4 kg) being returned to the waters they were taken from.

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35 Mr Thompson also submits that a new hydro scheme will create a new eeling area of some magnitude and, therefore, there should be a mechanism to adjust the TACC on a seasonal basis.

36 Mr Thompson would also like to see the commercial eel fishery added to the Eighth Schedule of the 1996 Act (Minimum Annual Holdings of ACE for Specified Stocks) with a minimum ACE holding of four tonnes. This would limit the number of fishers in the fishery and allow for better management.

MFish Discussion

37 Both shortfin and longfin eels, nationwide, are listed on the Sixth Schedule of the 1996 Act, thus allowing for their return to the water if they are likely to survive. Therefore, stakeholders in the Chatham Islands eel fishery have a mechanism available to return eels of either species to the water. Given that the Chatham Islands eel fishery is likely to remain a small fishery, both in size of catch and in number of participants, MFish considers that initiatives such as returning large eels to the water could be implemented by voluntary agreements.

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38 MFish is aware that the proposed hydro scheme on the Te Awananga River, which flows into Te Whanga lagoon, is still in the planning stages. If Chatham Islands eel stocks increase significantly in future years, for whatever reason, the TACs and TACCs can be adjusted through the annual review of sustainability measures.

39 The Eighth Schedule lists minimum annual holdings of ACE for specified stocks. Under s 74 of the 1996 Act, no commercial fisher may take any stock listed in the Eighth Schedule unless the fisher holds, at the time of taking, the minimum amount of ACE that is specified in that schedule in relation to that stock.

40 Generally, the Eighth Schedule includes medium to high-value, single target fisheries. The rationale for including these fisheries on the Eighth Schedule is to limit the number of participants in each fishery as the very nature of the listed fisheries is potentially conducive to 'part-timers'. The South Island eel stocks are currently included on the Eighth Schedule, with a four tonne minimum holding.

41 MFish notes that setting a minimum annual holding is likely to have implications for ACE and quota prices. A greater minimum holding will make it more difficult for new entrants to acquire quota and be able to fish. With less demand, ACE and quota prices might be expected to be lower for a large minimum holding than for a regime where there is a small or no minimum holding.

42 Given the scale of the Chatham Islands eel fishery, setting a minimum ACE holding could create a lack of flexibility for utilising the fishery. MFish recommends that this fishery not be added to the Eighth Schedule at this time.

Deemed Values

Stakeholder submissions

43 **New Zealand Seafood Industry Council (SeaFIC)** submits that the proposed deemed values (200% of port price) should achieve the general objectives of encouraging fishers to cover catches with ACE, should provide a strong incentive to maintain aggregate commercial catches within the TACC, and should not unduly influence the tendering of quota.

MFish Discussion

44 MFish agrees with SeaFIC that deemed values are designed to provide incentive for commercial catch to remain within the TACC, and that the proposed deemed values for SFE 17 and LFE 17 should achieve this. The potential for deemed values to unduly influence the tendering of quota is discussed in the Generic Issues section.

Legal Obligations

43 The statutory considerations that must be taken into account when setting TACs and allowances for Chatham Islands eels were identified in the IPP (refer to IPP para 43–52). No additional information has come to hand regarding these considerations.

Conclusion

44 Fish proposed, in the IPP, to set a TAC for Chatham Islands shortfin eels of 15 tonnes, and a TAC of either two or three tonnes for Chatham Islands longfin eels, based on the default management option for TAC setting under s 13 of the Act.

45 In the absence of reliable stock assessment information or estimates of biomass, with no estimates of customary or recreational harvest available, and given the absence of any commercial fishing in eight of the last twelve years, the proposed TACs are based primarily on consideration of habitat available to each species, biology, and information on abundance.

46 Some concerns have been expressed over the status of the nationwide longfin component of the eel fishery by both NIWA and DoC, the latter recently classifying this species as being ‘in gradual decline’.

47 Allowances have been proposed for customary and recreational fishers, for other sources of fishing related mortality, and TACCs.

48 Submissions generally support the proposals for shortfin eels, although there was concern expressed regarding the lack of biological information pertaining to eels in the Chatham Islands.

49 Accordingly, in terms of the TACs and allowances recommended for SFE 17, MFish proposals for this stock remain as stated in the IPP.

50 Submissions also support some commercial utilisation of the Chatham Islands longfin fishery, although views differ on the level of utilisation.

51 MFish has considered the options proposed for longfin eels, and the issues and concerns raised in submissions. Consideration has been given to the concerns over abundance of longfin eels, and the fact that large areas of longfin habitat are not open to commercial fishing. On the other hand, there has been an historical commercial catch of longfin eels.

52 Submissions and the other information available suggest a small commercial catch would allow for some utilisation of the longfin stock, while being cautious in the face of uncertainty and concern regarding the status of longfin stocks nationwide. MFish, therefore, proposes that the TAC for longfin eels in the Chatham Islands be set at three tonnes, with allowances of one tonne each for recreational and customary fishers, and a TACC of one tonne (as stated in option two of the IPP).

53 The proposed TACs and allowances (TACCs, and allowances for recreational and customary catch, and other sources of fishing-related mortality) are set in accordance with the requirements of ss 13 and 21 of the 1996 Act. MFish notes that there is no scientific data about whether or not the proposed TACs will allow the stocks to be maintained at or above the level that can produce the MSY. MFish has considered the information on abundance, habitat and biology of the stocks and the information principles of the Act (s 10). MFish believes the TAC proposals are consistent with s 13, and the TACC proposals consistent with s 21, to provide for utilisation of shortfin and longfin eels at the Chatham Islands while ensuring sustainability (s 8).

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54 One submitter considers that Chatham Islands eels should be added to the Eighth Schedule of the 1996 Act. Given the scale of the Chatham Islands eel fishery, setting a minimum ACE holding could create a lack of flexibility for utilisation. MFish recommends that this fishery not be added to the Eighth Schedule at this time.

Recommendations

55 MFish recommends that you:

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a) **Agree** to set a TAC for SFE 17 (shortfin eels – *Anguilla australis* and Australian longfin – *A. reinhardtii*) at 15 tonnes. Within this TAC, set:

   i) an allowance for customary interests of three tonnes;

   ii) an allowance for recreational fishing of one tonne;

   iii) an allowance for other sources of fishing related mortality of one tonne; and

   iv) a TACC of ten tonnes.

b) **Agree** to set a TAC for LFE 17 (longfin eels – *A. dieffenbachia*) at three tonnes. Within this TAC, set:

   i) an allowance for customary interests of one tonne;

   ii) an allowance for recreational fishing of one tonne; and

   iii) a TACC of one tonne.

c) **Agree** to set annual deemed values for the above mentioned Chatham Islands eel stocks of shortfin and longfin at $4.00/kg.

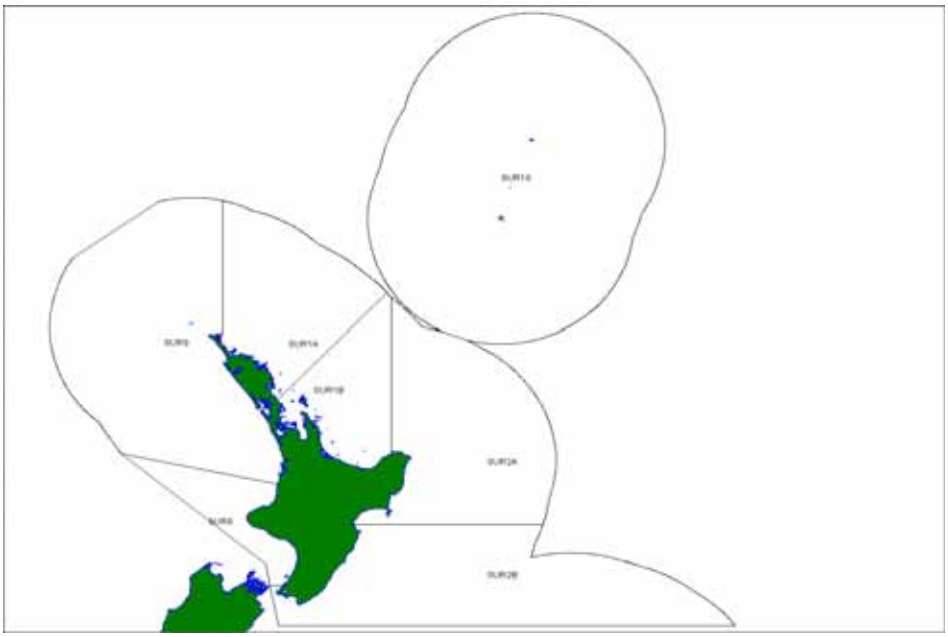
KINA (SUR) – NORTHERN NEW ZEALAND – INITIAL POSITION PAPER

Introduction into the Quota Management System (QMS)

1 The kina fisheries of northern New Zealand (the North Island and the Kermadec Islands) are to be introduced into the QMS on 1 October 2003. In October 2002, the Minister of Fisheries decided to set quota management areas (QMAs) for these fisheries as shown in Figure 1 [SUR 1A (East Northland), SUR 1B (Hauraki Gulf and Bay of Plenty), SUR 2A (East Coast), SUR 2B (Wairarapa and Wellington), SUR 8, SUR 9, and SUR 10]. The fishing year for these stocks will begin on 1 October and end on 30 September of the following year. The TACC and ACE are to be expressed in terms of greenweight.

2 South Island and Chatham Islands kina fisheries were introduced into the QMS on 1 October 2002. Kina stocks in northern New Zealand were scheduled for introduction one year after the southern New Zealand stocks. The staggered approach recognised the Mäori interest in the northern stocks, and to provide opportunity for stakeholders to become more familiar with the QMS introduction process.

Figure 1: Quota Management Areas for the kina fishery in northern New Zealand



Species Information

Species Biology

3 The New Zealand kina (*Evechinus chloroticus*), also known as sea urchin or sea egg, is very common in shallow coastal waters throughout New Zealand, including the Chatham Islands. It is typically found on reef areas, usually close to seaweed stands, and is generally absent on sandy, exposed shores. There are several other species of sea urchin in New Zealand, but kina is the most abundant and widespread species. Kina is the only species commercially targeted; it accounts for more than 99% of the recorded sea urchin catch.

4 Kina has an annual reproductive cycle, which culminates in spawning between November and March, and this timing is relatively consistent throughout New Zealand. Spawning may reduce the volume of the gonad by 40–50%. Gonad size/state is important for the fishery because the gonads are the marketable/edible parts of kina.

5 After spawning, kina take 4–6 weeks to develop through their larval stages and settle on reefs. Settlement is likely to be sporadic between years and appears to differ among locations and habitats. There is no evidence of adults acting as a 'nursery' for juveniles. It has been found that few genetic differences in kina populations exist from Leigh (North Auckland) and Stewart Island, which suggests that there is at least some mixing between populations.

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6 It is estimated that kina grow 8–10 mm in diameter in their first year of life. Growth rate will vary considerably, depending on local conditions, but kina may take eight to nine years to reach 100 mm diameter and very large individuals may reach ages of more than 20 years. Size at maturity appears to vary considerably among locations in New Zealand, and may be as small as 30 mm and as large as 75 mm test (shell) diameter.

7 There is little information available on the interactions between kina, its predators, and competitors. Although a wide range of fish and invertebrate predators consume kina, there is only limited evidence that any of these species control or limit kina populations. Paua is a likely competitor, and a negative association between this species and kina may exist in some areas.

8 Recent work in a marine reserve, where large predators such as reef fish and crayfish are abundant, indicates that predators can control the number of kina surviving the transition from crevice-bound to open substratum grazing. A direct link has been drawn between the increases in snapper and crayfish populations and the long-term decline in kina populations in the Leigh Marine Reserve. It is likely, however, that changes in the abundance of kina and the consequent changes in habitat representation, are part of a complex set of interacting processes, including, but not exclusively, increased predation.

Fisheries Characteristics

Commercial Catch

9 The commercial catch of kina in the northern fisheries has been summarised previously by Fishery Management Area (FMA), sourced from the MFish Report from the Stock Assessment Plenary 2002 (Table 1). Catch information from the most recent fishing years, as added to Table 1, was sourced using MFish's Fisheries Information System (FIS), based on Catch, Effort and Landing Returns (CELRs).

Table 1: Total reported catch (tonnes greenweight) of kina by FMA and fishing year. Data from 1989 and 1990 are combined from the Fisheries Statistics Unit (FSU) and CELR databases. Data in subsequent years are derived from CELR databases. The data for FMAs 6, 8 and 9 have been combined in this table because too few permit holders recorded catches in those FMAs to report them singly.

Year	FMA1	FMA2	FMAs 6,8,9	Unknown
1982-83	66.2	33.0	3.6	11.6
1983-84	81.4	180.3	0.3	5.7
1984-85	64.5	83.8	0.9	9.7
1985-86	72.0	139.1	2.0	1.1
1986-87	52.1	142.6	0.1	0.1
1987-88	22.1	154.1	-	-
1988-89	35.5	92.8	1.5	-
1989-90	10.0	282.4	6.5	-
1990-91	71.5	87.2	4.4	-
1991-92	78.7	37.3	5.0	-
1992-93	89.7	170.4	-	-
1993-94	150.7	176.7	2.3	-
1994-95	155.9	129.7	89.5	-
1995-96	174.5	41.2	0.1	-
1996-97	161.6	49.9	0.2	-
1997-98	134.8	36.5	1.4	-
1998-99	201.4	20.2	0.5	-
1999-00	297.4	14.5	0.1	2.2
2000-01	184.5	11.4	3.1	-
2001-02	237.9	2.5	-	-

10 The number of permit holders in the commercial fishery is useful to note when considering the level of fishing effort, and the resulting catch in the fishery, over the last twenty years (Table 2). There has been a general trend of a diminishing number of permit holders from the early 1990s to the present. Some fluctuation in the number of people holding a fishing permit has occurred over time. Some people eligible for permitting access in more recent years may not have always maintained a current fishing permit from one fishing year to the next.

Table 2: **Number of permit holders in the kina fishery for the period 1983 to 2003. Data for the period 1983 to 2000 based on commercial fishers recording catch by FMA (*2000 data incomplete). Data for the period 2001 to 2003 sourced directly through MFish's Fisheries Information System. Information for SUR 6 (Sub-Antarctic Islands), 8 and 9 is pooled, although no fishing permits have been issued for fishstocks 6 and 8 in recent years.**

Year	SUR 1	SUR 2	SUR 6, 8 and 9
1983	18	9	10
1984	18	11	1
1985	16	7	2
1986	12	7	2
1987	9	5	1
1988	16	4	2
1989	8	3	14
1990	9	5	3
1991	21	7	4
1992	32	6	6
1993	35	10	3
1994	33	9	3
1995	31	9	2
1996	27	7	1
1997	32	6	11
1998	20	3	0
1999	20	4	0
2000*	14	1	0
2001	13	3	2
2002	15	3	2
2003	16	7	5

11 In order to better assess where this commercial catch was taken in relation to the kina QMAs decided by the Minister, estimated catch data (~9700 records) showing the statistical area where the catch was taken were sourced directly from MFish's Fisheries Information System. This data was manually 'groomed', involving the removal of approximately 1500 records (obviously incorrect), and summarised (Table 3). A common error found was the misinterpretation of gurnard catch (coded 'GUR') with the code for kina ('SUR'), and the incorrect use of the 'KIN' code (used for kingfish) when the catch was clearly kina. The grooming exercise was simple to undertake given the known identity of permit holders in the kina fishery, the limited methods used, and the target-specific nature of the fishery.

12 MFish considers that the estimated catch records for kina are a reasonable reflection of the landed catch, although some under-estimation may be possible based on a 2001 analysis undertaken by NIWA. Estimated catch is normally based on the number of sacks taken, and commercial fishers typically use sacks of a standard size (holding ~25 kg of kina). The estimated weight is considered to be representative of the landed weight of kina taken. Further, MFish notes that the groomed estimated catch data presented in Table 3 is generally comparable to the 'landed' catch data provided in the report from the Fishery Assessment Plenary of May 2002.

Table 3: **Estimated commercial catch (kg) taken within the new QMAs for kina in northern New Zealand. No catch has been taken from SUR 10 (ie, the Kermadec Fishery Management Area).**

Year	SUR 1A	SUR 1B	SUR 2A	SUR 2B	SUR 8	SUR 9
1990-91	2 019	20 582	90 028	803	0	60
1991-92	24 076	54 945	36 458	845	980	814
1992-93	16 850	35 846	182 133	4 307	0	434
1993-94	27 804	116 546	165 533	2 290	3 480	15
1994-95	10 954	149 752	131 520	450	0	700
1995-96	17 352	176 083	43 622	0	150	500
1996-97	8 653	155 682	50 945	1 020	0	400
1997-98	8 334	126 072	39 460	0	0	772
1998-99	9 190	163 017	21 448	0	0	400
1999-00	17 345	208 535	10 530	1 598	0	0
2000-01	8 368	138 374	4 659	7 610	0	0
2001-02	38 287	195 338	0	1 100	0	30
Average	**15 769**	**128 398**	**64 695**	**1 669**	**384**	**344**

Non-commercial Catch

13 Kina is an important customary and recreational fishery. Estimates of recreational catch, expressed in numbers of kina taken, were made in 1993-1994, 1996 and 1999, based on scaled-up telephone and diary surveys (Table 4). The estimates are considered to be uncertain, but provide the best available information on the size of recreational catch. An indication of the tonnage is calculated by assuming an average whole weight of 248.3 g per kina (derived from diameter-weight relationship for kina between 60 and 110 mm diameter from Dusky Sound), and further assuming that kina are caught in equal proportion across a size range of 60 to 110 mm diameter. Similar statistics are not readily available for kina in the North Island other than an offshore site at Ariel Reef, Gisborne. The size distribution of kina at this site in 1993 was comparable to the size range used for the diameter-weight conversion for estimating recreational catch tonnages.

Table 4: **Recreational harvest of kina for 1993-1994, 1996 and 1999. The coefficient of variation (c.v.) is indicated only for those estimates with adequate sample sizes.**

Year	Area (FMA = Fishery Management Area)	Number of kina	c.v. (%)	Catch (tonnes)
1993-94	East Northland	109 000	60	27.1
1993-94	Hauraki Gulf	14 000	-	3.5
1993-94	Bay of Plenty	648 000	49	160.9
1993-94	FMA 1	801 000	41	198.9
1993-94	FMA 9	30 000	72	7.4
1996	FMA 1	316 000	24	78.5
1996	FMA 2	61 000	-	15.1
1996	FMA 8	43 000	-	10.7
1996	FMA 9	30 000	-	7.4
1999	FMA 1	1 793 000	35	445.2
1999	FMA 2	1 026 000	57	254.8
1999	FMA 8	85 000	-	21.1
1999	FMA 9	82 000	-	20.4

14 There are no estimates of customary catch available at a stock-wide level, although it is known that kina is an important customary food item. MFish is aware that Mäori provide customary authorisations under regulation 27 of the Fisheries (Amateur Fishing) Regulations 1986 to enable the harvest of kina for customary purposes (ie, hui or tangi). The resource is relatively easily accessed as an intertidal or shallow subtidal customary fishery.

Regulatory framework

SUR 1A, SUR 1B and SUR 9

15 Regulation 22A of the Fisheries (Auckland & Kermadec Areas Commercial Fishing) Regulations 1986 provides that commercial fishers fishing within the waters of 'Quota Management Areas 1 and 9' may take and possess kina up to a maximum quantity of 300 kilograms. This limit, implemented originally as a permit condition in the 1980s, was not based on any yield estimate, and may have been derived simply in light of what commercial fishers could typically harvest in one day at that time. No overall CCL has been put in place within these areas to date. Fishing for kina is restricted to the method of hand-gathering.

16 Within the quota management stock SUR 1B, commercial kina fishing has been prohibited for several decades in the eastern Bay of Plenty between Pokahinu Point and Cape Runaway. This restriction was implemented by a condition on fishing permits issued for kina until a regulated closure was imposed from 1 November 1989. The closure recognises the importance of kina for subsistence and customary purposes within the area.

SUR 2A, SUR 2B and SUR 8

17 Annual competitive CCLs were regulated from 1 November 1989 for Fishery Management Areas 2 (a limit of 350 tonnes) and 8 (a limit of 50 tonnes). These limits were not based on estimates of biomass, but were apparently considered appropriate on the basis of the available habitat and likely size of the resource across these broad geographical areas, in addition to catch information. At the same time, a daily limit of 900 kilograms was applied, and it was specified that hand-gathering was the only permitted fishing method.

18 In February 2003, within the SUR 2A stock, a temporary closure, made pursuant to s 186A of the Fisheries Act 1996, was put in place at Hicks Bay for two years. The closure prevents the taking of shellfish resources from that area for two years. The local Wharekahika Mäori Committee requested the closure as it wished to see the rebuilding of shellfish resources in the area, particularly rock lobster and paua, but kina was also mentioned in discussions.

19 There are other areas within SUR 2A where commercial fishing for any fish (including shellfish) is prohibited. For example, the area from Paritu, around the Mahia Peninsula, including Portland Island, to the Nuhaka River mouth. Kina is likely to be found and regularly used by resident non-commercial fishers in this area.

20 Regulatory provisions were also introduced at the same time as the CCLs (for FMA 2) to stipulate that commercial fishing specifically for kina was not permitted in certain

areas within SUR 2B. These specific areas extend from the Tukituki River mouth around Cape Kidnappers to the Waipuka Stream (adjacent to Ocean Beach, and thus adjoining the general commercial fishing prohibition area extending further south, as noted in the preceding paragraph). In addition, commercial kina fishing has been prohibited in Wellington Harbour and its entrance between the Red Rocks and Baring Head.

21 Within the SUR 2B stock, commercial fishing for any fish (including shellfish) is prohibited by regulation in a number of coastal areas. One of these includes an approximately seven nautical mile area between Ocean Beach, including Bare Island and an adjacent shallow reef, to a point just south of Karamea/Red Island, in the vicinity of the Waimarama community. Another is the Wellington Harbour and its entrance. These closures will continue to be of importance to the non-commercial sector.

22 Within SUR 8, regulations prohibiting commercial kina fishing apply to the area between Paraparaumu Beach south to Rock Point (adjacent to Porirua), including Porirua Harbour. A two year temporary closure on the taking of aquatic life by all persons (other than fish taken by line fishing) was implemented at Pukerua Bay in December 2002. More generally, the SUR 8 kina area has not been made an authorised stock for the purpose of permitting commercial fishing since 2001.

SUR 10

23 SUR 10 is unable to be fished. A regulatory prohibition on the commercial fishing of all non-QMS species within the entire Kermadec Fishery Management Area, other than tuna, was applied from 1 November 1989. This regulation maintains its currency, despite the subsequent 1990 establishment of a 12 nautical mile marine reserve around all the islands in the area.

General

24 Commercial fishers cannot use underwater breathing apparatus to take kina, whereas non-commercial fishers may use this method. Commercial fishers in the North Island are restricted to the method of hand-gathering which is a highly selective fishing method.

25 There is no minimum or other size limit for kina.

26 A daily limit of 50 kina per person applies under amateur fishing regulations in all areas.

Fisheries Assessment

27 Although there is a wealth of information on the biology and ecology of this species, there is relatively little that can be used to assess the status of kina stocks in New Zealand. Indices of abundance are available for some specific sites in New Zealand, but not at the level of a stock.

Associated Fisheries

28 In the North Island kina are harvested by hand-gathering. This method is highly selective and there is no bycatch of any associated or dependent species in the target fishery.

Environmental Issues

29 Hand-gathering as a fishing method has little direct environmental impact. For northern kina stocks, MFish would not support the use of fishing methods that are less selective, or where their use may harm the seafloor. Hand-gathering is considered to be the appropriate method to pursue the fishery.

30 Kina play a role in the dynamics of the biological community structure of coastal reef systems. The 'barrens habitat', comprising a characteristic flora and fauna usually within a particular depth zone of less than 12 m, is maintained by high densities of kina populations, and results in different assemblages of seaweeds, invertebrates and fish life.

31 A reduced number of kina in an area, as a result of harvest activities or the influence of other natural events (eg, disease), is likely to result in a re-colonisation of seaweeds that will subsequently affect the assemblage of species co-existing with it. The effect of this change will vary depending on latitude, depth and exposure to wave action. Harvesting regimes that might significantly affect kina densities might also have impacts on biodiversity, although these relationships are complex and not well understood. Under differing circumstances, biodiversity might either decrease or increase.

32 Similarly, the role that kina play in facilitating the creation or maintenance of habitats of particular significance to fisheries management is unknown. There is likely to be a range of interacting ecological processes that generally affect the prevalence of such habitat.

Research – Current / Future

33 There are no MFish research projects proposed for kina fisheries for the 2003-2004 year, or beyond, at this time.

34 It would be desirable to undertake research that could be applied to an assessment of the status of the stocks (eg, biomass estimates, analysis of stock structure), as well as obtaining further estimates of non-commercial catch. Techniques that could be applied to monitor trends in a kina fishery should also be considered, particularly as this relates to a local scale. Further research on the interrelationships between kina and other elements of the aquatic environment, would be useful.

35 Avenues for future research can be developed via stakeholder input to research planning processes convened by MFish.

Other information impacting on management measures

36 Before setting any sustainability measures, the Minister must have regard to 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 applies to the coastal marine area and is considered to be relevant by the Minister. MFish is not aware of any provisions in any strategy or planning document under the Resource Management Act or Conservation Act that are relevant to the setting of sustainability measures for the kina fishery.

37 Similarly, before setting any sustainability measure relevant to the Hauraki Gulf (eg, a TAC for the SUR 1B stock), the Minister must have regard to s 7 and s 8 of the Hauraki Gulf Marine Park Act 2000. The Hauraki Gulf is defined in that Act to include all coastal waters and offshore islands from near Te Arai Point (being the boundary between the SUR 1A and SUR 1B stocks) offshore to the Moko Hinau Islands, and south to Homunga Point (north of Waihi Beach). This Act's objectives are to protect and maintain the natural resources of the Hauraki Gulf as a matter of national importance. MFish considers that the setting of sustainability measures for the SUR 1B stock in particular will better meet the purpose of the Act, and ensure that the range of values associated with the use of the kina resource are enhanced for the people and communities in the area.

38 Before setting any sustainability measures, the Minister must also take into account any conservation services or fisheries services, any relevant fisheries plan approved under the Act. There are no relevant fisheries plans approved that would have any bearing on the setting of TACs for kina stocks, and similarly no decisions have been made to require conservation services or fisheries services relevant to the kina fishery. The level of conservation or fisheries services that might be required will depend on the range and level of risks associated with any particular fishery.

39 For the kina fishery, the catch limits proposed in each QMA are not considered to warrant an immediate need to generate fisheries or conservation services. However, there are several avenues of work that could be undertaken in the short to medium term. These are outlined in the previous section.

40 Some stakeholder groups have noted the desirability of enhancing existing reporting systems to facilitate fine-scale catch reporting. This might enable future management measures to be applied with greater certainty for all interests at a range of smaller spatial scales.

TAC and Allowances

41 MFish recommends TACs, non-commercial and other allowances, and TACCs (all in tonnes) for kina stocks of northern New Zealand as outlined in Table 5.

Table 5: Proposed TACs, and specific allowances, including TACCs (all in tonnes), for kina stocks of northern New Zealand.

Stock	TAC	Customary allowance	Recreational allowance	Other sources of fishing-related mortality	TACC
SUR 1A	242	100	100	2	40
SUR 1B	448	142	142	4	160
SUR 2A	314	90	90	4	130
SUR 2B	160	54	54	2	50
SUR 8	38	16	16	1	5
SUR 9	32	14	14	1	3
SUR 10	0	0	0	0	0

TAC Management Strategy

42 MFish proposes to set a TAC for all kina stocks using the default management option of s 13 of the Fisheries Act 1996 (the Act). MFish notes that neither the B_{MSY} levels nor current biomasses are known for any stocks of kina. Until more information on the status of each stock's current biomass relative to B_{MSY} is obtained, it is not possible to determine the rate at which stocks should be moved towards or above the level that will support the maximum sustainable yield.

43 The alternative TAC management strategy option under s 14A of the Act is considered inappropriate. This provision, and the related provision in s 14B, enables the Minister to set a TAC that maintains stocks at a level that ensures their long term viability, while other inter-related stocks can be taken at TAC and TACC levels set for those stocks based on B_{MSY}. Kina form an important part of the aquatic environment, and managing them at a level that would only ensure their long term viability is likely to result in ecological imbalances.

44 Under s 14 of the Act, the Minister of Fisheries can increase a TAC of a stock listed on the Third Schedule to the Act. To do so, the Minister must be satisfied that the purpose of the Act would be better achieved. In order for a stock to be added to the Third Schedule, the Governor-General must agree that the biological characteristics of the species prevent the estimation of a maximum sustainable yield, or that the catch limit for any of the stock forms part of an international agreement, or that the stock is managed on a rotational or enhanced basis.

45 MFish considers that yield for kina can be estimated, and catch limits are not part of international agreements. While longer-term approaches to harvesting kina might include rotational harvesting or harvesting of enhanced areas, kina stocks are not explicitly harvested on this basis currently. This may be practical in the future, but initially some basic assessment of the stock size and distribution would be desirable to assist with identification of resource management strategies, particularly given the different interests in this fishery.

Rationale for proposed TACs

SUR 1A

46 MFish proposes that a TAC of 242 tonnes be set for SUR 1A.

47 There is no estimate of biomass or available yield for this fishery. There is no overall catch limit in place for the stock. In the absence of other stock information, including appropriately set CCLs, the proposed TAC is based on known or estimated levels of commercial, recreational, and Mäori customary catch, and all other sources of fishing-related mortality. MFish considers that the proposed total levels of catch are reflective of the abundance of kina in the QMA, having regard to the amount of suitable habitat available within the stock boundary.

48 The average commercial catch taken from this QMA over the last twelve years is 15.8 tonnes. Within that period, commercial catch has ranged from 2 to 38 tonnes. Commercial catch has exceeded 24 tonnes in three years and reached 38 tonnes in the 2001–02 fishing year. The variability in the quantity of reported commercial catch is not considered to be a reflection of any change in kina abundance due to fishing. It is more likely to be indicative of the limited fishing effort that has been applied by commercial fishers during that time. Based on a review of the returns received, it is also possible that commercial fishing activity has not occurred across the full stock area.

49 Given the variability in the annual commercial catch taken, MFish considers that the use of the average 12 year catch figure would under-represent the extent of commercial catch taken from the stock in some years. Similarly, the number of participants in the fishery has not been consistent over this time. MFish suggests that a figure closer to the higher annual catch levels experienced should be used for the purpose of TAC setting. A figure of 40 tonnes is proposed. This is slightly higher than the quantity removed from the stock in all but the last fishing year. There are no known risks to stock sustainability or interrelated stocks at this level of commercial catch.

50 Estimates of recreational catch of kina vary considerably between the surveys undertaken. A 1993 estimate of recreational catch from the East Northland area of 27.1 tonnes, that approximates the SUR 1A boundary, suggests that recreational catch in SUR 1A was about 15% of the total recreational catch from Fishery Management Area 1.

51 MFish considers that this does not appropriately represent the split of recreational catch between SUR 1A and SUR 1B for more recent surveys where estimates are only available on a Fishery Management Area basis. The 1993 estimates are highly uncertain (cv's in Table 4 are up to 60%). Given the importance of kina to recreational harvesters in the areas, MFish suggests that more recent recreational catch estimates should be attributed more equally between SUR 1A and SUR 1B. Accordingly, the SUR 1A recreational estimates for 1996 and 1999 are 39.25 tonnes and 222.6 tonnes respectively. Because of the uncertainties in the estimates, an average of the three adjusted survey estimates is used for the purpose of TAC setting. This provides a figure of near 100 tonnes.

52 Using the rationale that kina is an important component of Mäori customary practices, it is suggested that the taking of kina for customary purposes in the east Northland area might be equivalent to the estimate of recreational catch. Accordingly, a figure of 100 tonnes is proposed.

53 In the absence of information on other sources of mortality to the stock, a quantity of 2 tonnes is considered reasonable, reflecting a view that illegal activity, and other sources of mortality, is relatively low.

54 It is not known whether a TAC set at the proposed level of 232 tonnes will maintain the stock biomass at or above that required to produce B_{MSY} or move it towards those levels, although in the short term, the proposed level is considered to be sustainable.

SUR 1B

55 MFish proposes that a TAC of 448 tonnes be set for SUR 1B.

56 There is no estimate of biomass or available yield for this fishery. There is no overall catch limit in place for the stock. In the absence of other stock information, including appropriately set CCLs, the proposed TAC is based on known or estimated levels of commercial, recreational, and Mäori customary catch, and all other sources of fishing-related mortality. MFish considers that the proposed total levels of catch are reflective of the abundance of kina in the QMA, having regard to the amount of suitable habitat available within the stock boundary.

57 The commercial fishery is based primarily around the Coromandel Peninsula and outlying islands, including Great Barrier Island. The average commercial catch over the last 12 years is 128 tonnes, although the commercial catch has exceeded 120 tonnes each year since the 1994-95 fishing year.

58 A more stable period of annual commercial catch that would justify the use of an average figure to reflect commercial activities would be for the nine fishing years from 1993-1994 to 2001-2002. The average annual catch taken for that period is 159 tonnes. MFish notes that no sustainability concerns are apparent at the level of the stock, although it is aware of concerns about localised depletion that may or may not have arisen through commercial fishing. Accordingly, MFish proposes to use a figure of 160 tonnes for the purpose of TAC setting.

59 MFish staff, Honorary Fishery Officers, and comments from recreational fishers, suggest that considerable recreational harvest of kina occurs in the greater Auckland area, and signs of localised depletion have been observed there and at other places near large population centres. While the TAC is not considered a tool by which to effectively manage local depletion, the TAC level can influence the potential for local depletion and associated environmental effects. Those are considerations when assessing any scope for development when setting the TAC.

60 Further, representatives of Mäori in the western Bay of Plenty have indicated a concern about the status of kina within their local areas, and consider that current harvest activity might be exceeding sustainable catch levels. Representatives have suggested that commercial fishing be significantly reduced or stopped in such areas.

The kina populations in the Eastern Bay of Plenty are probably fully utilised by non-commercial fishers for subsistence and customary purposes.

61 Estimates of recreational catch of kina vary considerably between the surveys undertaken. A 1993 estimate of recreational catch from the Hauraki Gulf and the Bay of Plenty area of 164.4 tonnes, that approximates the SUR 1B boundary, suggests that recreational catch in SUR 1A is about 85% of the total recreational catch from FMA 1.

62 MFish considers that this does not appropriately represent the split of recreational catch between SUR 1A and SUR 1B for more recent surveys where estimates are only available on a FMA basis. The 1993 estimates are highly uncertain (cv's in Table 4 are up to 60%).

63 MFish suggests that more recent recreational catch estimates should be attributed more equally between SUR 1A and SUR 1B. Accordingly, the SUR 1B recreational estimates for 1996 and 1999 are 39.25 tonnes and 222.6 tonnes respectively. Because of the uncertainties in the estimates, an average of the three adjusted survey estimates is used for the purpose of TAC setting. This provides a figure of 142 tonnes.

64 Using the rationale that kina is an important component of Mäori customary practices, it is suggested that the taking of kina for customary purposes in the Hauraki Gulf and Bay of Plenty area might be equivalent to the estimate of recreational catch. Accordingly, a figure of 142 tonnes is proposed for the purpose of TAC setting.

65 In the absence of information on other sources of mortality to the stock, a quantity of 4 tonnes is considered reasonable, reflecting a view that illegal activity, and other sources of mortality, is relatively low. The figure is slightly higher than that provided for SUR 1A on the basis that the overall TAC for SUR 1B is greater than that proposed for SUR 1A.

66 It is not known whether a TAC set at the proposed level of 448 tonnes will maintain the stock biomass above that required to produce B_{MSY} or move it towards those levels, although in the short term, the proposed level is considered to be sustainable. The TAC is likely to reflect the past harvest. Given the uncertainty of the stock's status, and an indication that current harvest activities might be causing local depletion in some areas, MFish does not consider that there is much opportunity to provide for utilisation at a level beyond that experienced to date.

SUR 2A

67 MFish proposes that a TAC of 314 tonnes be set for SUR 2A.

68 There is no estimate of biomass or available yield for this fishery. There is a CCL in place for the broader FMA 2 area of 350 tonnes. The catch limit is unlikely to have been based on a scientific assessment of yield, and MFish does not propose to rely on the CCL as the basis for one element of information for TAC setting. However, it is useful to note that the CCL was set at a time when most of the commercial fishing activities were undertaken in the SUR 2A stock boundary. In the absence of other stock information, including appropriately set CCLs, the proposed TAC is based on known or estimated levels of commercial, recreational, and Mäori customary catch,

and all other sources of fishing-related mortality. MFish considers that the proposed total levels of catch are reflective of the abundance of kina in the QMA, having regard to the amount of suitable habitat available within the stock boundary.

69 Commercial fishers took a maximum of 182 tonnes from this stock in 1992-1993, whereas the 12 year average is only 64.7 tonnes. The lower average is due to a decline in commercial effort since the mid-1990s (no commercial catch was taken in the 2001-2002 fishing year), and is unlikely to reflect any downturn in the state of the resource. The number of participants in the fishery is also much lower than historically involved in the kina fishery of FMA 1.

70 MFish does not consider that commercial use of the SUR 2A fishery has been stable enough over a sustained period of time to justify the use of an average commercial catch figure as a source of information for TAC setting. Similarly, the basis for the CCL is uncertain, and commercial fishers have taken on an annual basis no more than 182 tonnes from the SUR 2A stock. However, commercial catch has exceeded 130 tonnes in three consecutive years (1992-1993 to 1994-1995), without any apparent sustainability concerns arising. MFish considers that the figure of 130 tonnes is a reasonable reflection of commercial catch to use for the purposes of TAC setting.

71 Estimates of recreational catch of kina in FMA 2 are available only from the 1996 and 1999 surveys. They vary considerably between the two surveys undertaken with values of 15.1 and 254.8 tonnes respectively. The estimates are uncertain, but provide best available estimates for purposes of TAC setting.

72 Other than the Wellington coast, it is assumed that the majority of the recreational catch in FMA 2 was taken in the East Coast area given the prevalence of suitable habitat within this geographical area, and general observations that kina are regularly taken for subsistence purposes. This area is characterised by low employment and possibly strong reliance on the resources of the sea for sustenance. Accordingly, for the purpose of this initial position paper, it is assumed that just under two-thirds of the recreational catch from FMA 2 is taken from SUR 2A stock. This translates to figures of about 10 tonnes in 1996 and 168 tonnes in 1999. Because of the uncertainties in the estimates, an average of the two adjusted survey estimates is used for the purpose of TAC setting. This provides a figure of near 90 tonnes.

73 Using the rationale that kina is an important component of Mäori customary practices, it is suggested that the taking of kina for customary purposes in the SUR 2A area might be equivalent to the estimate of recreational catch. Accordingly, a figure of 90 tonnes is proposed for the purpose of TAC setting.

74 In the absence of information on other sources of mortality to the stock, a quantity of 4 tonnes is considered reasonable, reflecting a view that illegal activity, and other sources of mortality, is likely to be relatively low.

75 It is not known whether a TAC set at the proposed level of 314 tonnes will maintain the stock biomass at or above that required to produce B_{MSY} or move it towards those levels, although in the short term, the proposed level is considered to be sustainable. The TAC is likely to reflect the current harvest activities, and levels of harvest that have previously been taken by the commercial sector.

SUR 2B

76 MFish proposes that a TAC of 160 tonnes be set for SUR 2B.

77 There is no estimate of biomass or available yield for this fishery. There is a CCL in place for the broader FMA 2 area of 350 tonnes. The catch limit is unlikely to have been based on a scientific assessment of yield, and MFish does not propose to rely on the CCL as the basis for one element of information for TAC setting. However, it is useful to note that the CCL was set at a time when most of the commercial fishing activities were undertaken in the SUR 2A stock boundary. In the absence of other stock information, including appropriately set CCLs, the proposed TAC is based on known or estimated levels of commercial, recreational, and Mäori customary catch, and all other sources of fishing-related mortality. MFish considers that the proposed total levels of catch are reflective of the abundance of kina in the QMA, having regard to the amount of suitable habitat available within the stock boundary.

78 The SUR 2B stock covers a reasonably large stretch of coastline from Napier around to Rock Point, near Porirua. While the region does not have many large embayments that might afford a greater range of habitat suitable for kina, there are nonetheless a number of reef systems along the Wairarapa and Wellington coasts that would support reasonable populations of kina. The amount of suitable habitat for kina within the SUR 2B stock boundary is not thought to be as extensive as that observed in SUR 2A. The resource is probably lightly exploited in comparison to other areas, although some local areas are significant for non-commercial fishing (eg, the Porirua coast), and may be subject to more intensive harvest.

79 There is little useful information on which to base recommendations for a TAC for this stock. Historically, commercial fishing has been intermittent and at low levels, averaging 1.6 tonnes, and peaking at 7.6 tonnes in 2000-2001. This low commercial catch does not necessarily reflect the abundance of kina within the stock, but more the intermittent involvement of the few commercial fishers with access to the fishery. Further, the historical catch was largely taken south of Castle Point, and is therefore not reflective of the available resource over the entire stock area.

80 The basis for the CCL of 350 tonnes for FMA 2 is uncertain, and is unlikely to have related to any estimate of biomass or yield. Therefore MFish does not propose to rely on the CCL for TAC setting. Because there has been little history of commercial fishing, yet the extent of suitable habitat is likely to support reasonable populations of kina, MFish considers that historical levels of catch should not be used as a contributing determinant of the TAC for SUR 2B because those levels would not represent a reasonable level of utilisation when considered against risks to the stock. MFish proposes that a figure of 50 tonnes is used for the purpose of TAC setting.

81 Estimates of recreational catch of kina in FMA 2 are available only from the 1996 and 1999 surveys. They vary considerably between the two surveys undertaken with values of 15.1 and 254.8 tonnes respectively and both estimates are uncertain.

82 For the purpose of this initial position paper, it is assumed that just over one-third of the recreational catch from FMA 2 is taken from SUR 2B stock. This takes into account the likelihood that the amount of suitable habitat for kina, and the degree of use of the resource, is likely to be relatively less than that in the SUR 2A stock across

its overall distribution. This translates to figures of about 6 tonnes in 1996 and 102 tonnes in 1999. Because of the uncertainties in the estimates, an average of the two adjusted survey estimates is used for the purpose of TAC setting. This provides a figure of near 54 tonnes.

83 Using the rationale that the harvesting of kina is considered an important component of Mäori customary practices, it is suggested that the taking of kina for customary purposes in this stock is equivalent to the recreational catch estimate of 54 tonnes, bearing in mind that there are several coastal whänau and hapu within the stock boundary that rely on this and other species for special occasions.

84 In the absence of information on other sources of mortality to the stock, a nominal quantity of 2 tonnes is considered a reasonable input to the TAC setting process, reflecting a view that illegal activity, and other sources of mortality, is likely to be relatively low.

85 MFish believes that there is an opportunity to provide for initial development of SUR 2B within the QMS by setting a TAC in excess of current catches. A TAC of 160 tonnes is proposed. It is not known whether a TAC set at this level will maintain the stock biomass at or above that required to produce B_{MSY} or move it towards those levels, although in the short term, the proposed level is considered to be sustainable.

SUR 8

86 MFish proposes that a TAC of 38 tonnes be set for SUR 8.

87 There is no estimate of biomass or available yield for this fishery. There is a CCL in place for the FMA 8 area of 50 tonnes. The CCL is unlikely to have been based on a scientific assessment of yield, and MFish does not propose to rely on this figure as the basis for one element of information for TAC setting. In the absence of other stock information, including appropriately set CCLs, the proposed TAC is based on known or estimated levels of commercial, recreational, and Mäori customary catch, and all other sources of fishing-related mortality. MFish considers that the proposed total levels of catch are reflective of the abundance of kina in the QMA, having regard to the amount of suitable habitat available within the stock boundary.

88 There is limited habitat available for kina in the coastal waters between Rock Point (south of Porirua Harbour) and Tirua Point (south of Kawhia Harbour). In the south, kina populations are likely to extend about 60 kilometres from the stock boundary (Rock Point) to Pukerua Bay, before the start of the open sandy beach habitat of the Kapiti coast. However, it is also known that people wishing to harvest kina, who live in this area, travel south to the Makara to Wellington coast because kina numbers are relatively low in the Porirua coastal area.

89 The open beach, unsuitable as kina habitat, extends north from Pukerua Bay to Patea on the southern Taranaki coast. North of Patea, around Taranaki, to Tirua Point, there are a number of reef areas where kina is found, although these are not considered as extensive as those found on the North Island east coast. Accordingly, the potential opportunity for increased kina harvest activities from this stock, based on an assessment of the habitat features and observations from stakeholders in the area, is considered to be relatively low.

90 MFish staff and stakeholders also observe that the size of kina on the west coast is slightly smaller than those found in less exposed environments. The swell conditions, and the movement of sand over the Taranaki reef systems, make it an arduous environment for the survival of individual kina. Similarly, marine algal assemblages found in the stock area are unlikely to be as abundant or as widespread as populations on the North Island east coast. As expected, fishing activities by customary, recreational and commercial fishers are largely dependent on the weather.

91 Commercial fishing has not occurred within SUR 8 since 1995-1996, with catches being intermittent and low in earlier years (150 to 3 480 kilograms). Based on the catch returns received, almost all of the catch taken is likely to have come from the Kapiti to Porirua coast. There were few commercial fishers holding an authorisation to fish this stock, and generally none in more recent times.

92 Overall, existing commercial fishing catch figures for kina of effectively zero do not contribute to the calculation of a proposed TAC for this stock. On the basis that a CCL was established, it is possible that some use of the resource by commercial fishers was considered feasible in 1989, such that some consideration of potential catch could be made toward the calculation of a TAC. However, given the relatively limited habitat available to support kina populations, and the observed lower abundance of kina in the southern part of the stock, it is considered that the scope for further utilisation is limited. A figure of 5 tonnes is suggested for the purpose of setting the TAC.

93 Estimates of recreational catch of kina in FMA 8 are available only from the 1996 and 1999 surveys. The estimates vary between 10.7 and 21.1 tonnes respectively. Because of the uncertainties in the estimates, an average of the two surveys is used for the purpose of TAC setting. This provides a figure of 16 tonnes.

94 Within the northern part of SUR 8, kina is the most popular kaimoana taken by Mäori. More generally, using the rationale that kina is an important component of Mäori customary practices, it is suggested that the taking of kina for customary purposes in the SUR 8 area might be equivalent to the estimate of recreational catch. Accordingly, a figure of 16 tonnes is proposed for the purpose of TAC setting.

95 In the absence of information on other sources of mortality to the stock, a nominal quantity of 1 tonne is considered a reasonable input to the TAC setting process, reflecting a view that illegal activity, and other sources of mortality, is likely to be relatively low.

96 Given the relative lack of suitable habitat in the stock area, and the importance of the fishery for Mäori, MFish considers that the scope for further utilisation of the resource is limited. On the basis of available information, MFish proposes a TAC of 38 tonnes. It is not known whether a TAC set at this level will maintain the stock biomass at or above that required to produce B_{MSY} or move it towards those levels, although in the short term, the proposed level is considered to be sustainable.

SUR 9

97 MFish proposes that a TAC of 32 tonnes be set for SUR 9.

98 There is no estimate of biomass or available yield for this fishery. There is no overall catch limit in place for the stock. In the absence of other stock information, including appropriately set CCLs, the proposed TAC is based on known or estimated levels of commercial, recreational, and Mäori customary catch, and all other sources of fishing-related mortality. MFish considers that the proposed total levels of catch are reflective of the abundance of kina in the QMA, having regard to the amount of suitable habitat available within the stock boundary.

99 The relative distribution and abundance of this stock is affected by the same habitat factors discussed for the SUR 8 stock. However, the harbour areas within SUR 9 afford some sheltered areas where further kina populations are found. These areas may not be extensive, and may be limited to headlands or areas of mudstone or other reef areas not subjected to the prevailing swell, or influences of catchment conditions on salinity (eg, floods). Muddy or sandy harbour channels do not afford suitable habitat. A large part of the coastal area north of Raglan is open sandy beach, which is unsuitable habitat for kina.

100 Commercial catch has not surpassed 814 kilograms in any of the last twelve years. The average commercial catch for the 12 year period from 1990-91 to 2001-02 is only 0.4 tonnes. This is largely a factor of the few commercial fishers with authorisations to fish in this area, and the preference to fish in more sheltered east coast waters than that experienced on the west coast. The reported commercial catch does not reflect the likely abundance of the resource. Overall, commercial fishing catch figures do not materially contribute to the calculation of a proposed TAC for this stock. However, given the limited habitat in the stock area, MFish proposes a figure of 3 tonnes for the purpose of TAC setting. This figure is less than SUR 8 on the basis that the extent of suitable habitat available for kina within SUR 9 is more limited.

101 Estimates of recreational catch of kina in FMA 9 are available only from the 1996 and 1999 surveys. The estimates vary between 7.4 and 20.4 tonnes respectively. Because of the uncertainties in the estimates, an average of the two surveys is used for the purpose of TAC setting. This provides a figure of 14 tonnes.

102 The figure of 14 tonnes may be an underestimate of the quantity that might be harvested, particularly given the human population adjacent to this stock (eg, the greater metropolitan area around Auckland). However, the collection areas adjacent to the city, and more generally the full length of the coast within the stock, may not be as extensive as the length of coast might indicate. From the relatively restricted habitat for kina along the entire SUR 9 coast, MFish infers that the populations of kina would not be able to sustain intensive fishing pressure.

103 Customary harvest of kina is likely to be locally important within some parts of SUR 9, although some Mäori communities in Northland are more likely to harvest kina from the east coast where weather conditions and the local abundance of the resource makes this easier. MFish understands that kina within the far northern part of SUR 9 are not as important as other shellfish species taken for customary purposes. However, in the Waikato area, customary fishing of localised populations of kina is carefully monitored by kaitiaki, and use of the resource is highly regarded.

104 On balance, using the rationale that kina is an important component of Mäori customary practices, it is suggested that the taking of kina for customary purposes in

the SUR 9 area might be equivalent to the estimate of recreational catch. Accordingly, a figure of 14 tonnes is proposed for the purpose of TAC setting.

105 In the absence of information on other sources of mortality to the stock, a nominal quantity of 1 tonne is considered a reasonable input to the TAC setting process, reflecting a view that illegal activity, and other sources of mortality, is likely to be relatively low.

106 Given the relative lack of suitable habitat in the stock area, and the likelihood that kina populations are discrete in nature, the scope for future utilisation of the resource is likely to be limited. Using the available information, MFish proposes a TAC of 32 tonnes. It is not known whether a TAC set at this level will maintain the stock biomass at or above that required to produce B_{MSY} or move it towards those levels, although in the short term, the proposed level is considered to be sustainable.

SUR 10

107 In SUR 10, all coastal waters out to 12 nautical miles around the Kermadec Islands are within the marine reserve, and the remaining area is not suitable habitat for the species. Accordingly, it is proposed to recommend a TAC of zero for SUR 10.

Proposed allowances and TACCs

108 The Minister is required to make separate decisions on allowances for each stock. MFish proposes allowances as shown in Table 5. MFish notes that information about the existing catch in each stock can be used as a guide when considering decisions on allocation, but it is not necessarily determinative of the final allocation.

Recreational allowance

109 Kina is clearly an important resource for the recreational fishing sector in the North Island.

110 MFish believes that the estimates of recreational catch provided by the telephone and diary surveys, although uncertain, illustrate the overall importance of the resource for the sector. Estimated catches varied between the surveys, and because of the uncertainties in the information, MFish has derived estimates of recreational catch by averaging the estimates from the surveys. MFish considers that the recreational allowances for kina stocks should be based on information derived from these surveys as it is the best available.

111 MFish has further proposed, in apportioning 1996 and 1999 recreational catch estimates between the East Northland (SUR 1A) and Hauraki Gulf – Bay of Plenty (SUR 1B) stocks, that these estimates of recreational catch should be more equally distributed than was indicated in the 1993 surveys. This recognises similarities in the communities of interest and their characteristics, and the observed use of the kina resource in the respective areas. MFish considers that this is more realistic than an apportionment using the 1993 survey information alone. The 1993 value, although uncertain, strongly favours the Hauraki Gulf – Bay of Plenty stock. Including the 1993 area-specific information in the averaged estimate results in a greater allowance for SUR 1B.

112 SUR 1B incorporates the greater metropolitan area of Auckland with its diverse communities. There is considerable interest in the harvest of intertidal shellfish, including kina, within the greater metropolitan area of Auckland. In addition, on a seasonal basis, holiday-makers from large metropolitan cities may take kina from the Coromandel and Bay of Plenty coasts. Further, in the Bay of Plenty, there are a number of local recreational fishers who rely on kina for food. Accordingly, MFish considers that a recreational allowance of 100 tonnes for SUR 1A, and 142 tonnes for SUR 1B are reasonable as initial proposals.

113 A recreational allowance of 90 tonnes is proposed for SUR 2A. This quantity recognises the importance of this resource to the East Coast community, and their dependence on food from the sea. In deriving this figure, MFish considered that recreational catch estimates from the 1996 and 1999 surveys for the FMA 2 area should be apportioned more in favour to the East Coast (SUR 2A) stock than the Wairarapa – Wellington stock (SUR 2B). MFish believes that the recreational use of the resource in the SUR 2A stock is likely to be more extensive throughout the entire stock boundary, and the number of recreational fishers is likely to be greater within the SUR 2A fishery, in comparison to SUR 2B. MFish also considers that the use of the resource is also likely to be a function of its greater availability in the SUR 2A stock.

114 A recreational allowance of 54 tonnes is proposed for SUR 2B. In addition to the comments in the preceding paragraph, MFish considers that the recreational fishers within SUR 2B are less likely to be reliant on this resource for subsistence purposes in comparison to recreational fishing interests in the SUR 2A stock.

115 A recreational allowance of 16 tonnes is proposed for SUR 8, based on the average of the two recreational catch estimates for 1996 and 1999. There are locally important kina populations that are the subject of recreational harvest activities. The allocation reflects the existing and foreseeable use of the resource, the localised nature of the fishery and the expectation that its abundance is relatively low, such that the opportunity for further utilisation is limited. A reasonably significant part of the stock area does not contain suitable habitat for kina.

116 A recreational allowance of 14 tonnes is proposed for SUR 9, based on the average of the two recreational catch estimates for 1996 and 1999. There are locally important kina populations that are the subject of recreational harvest activities, particularly in the southern part of the stock boundary. The proposed allowance is likely to reflect the existing use of the resource, and the relatively low abundance of the stock given the limited extent of suitable habitat within the stock boundary.

117 No recreational allowance is proposed for SUR 10.

118 Recreational interests might wish to indicate in submissions whether or not the proposed allowances are sufficient to meet the sector's current and foreseeable needs, in addition to providing information about recreational kina catch.

Customary Mäori allowance

119 There is no information available on the level of customary harvest for kina at the level of a complete stock. It is known that the species is of importance to Mäori, and

MFish proposes that the allowance provided should be similar to the known level of recreational catch. The allowances proposed also take into account the extent of suitable habitat for kina.

120 MFish would welcome views from Mäori about the quantities of kina that are currently harvested for customary purposes (ie, hui or tangi) in order to evaluate the allowances proposed in this paper. It would be helpful if submissions from Mäori incorporate information on how much kina is taken for customary purposes from a defined area in any given year, and how representative that year's harvest was in comparison to previous years.

121 A customary allowance of 100 and 142 tonnes is proposed for each of SUR 1A and SUR 1B. As a reference of local needs, notifications made to the Auckland office of MAF Fisheries between 1994 and 1996 indicated that customary authorisations for kina were common. Amounts taken typically ranged from 3 to 12 'sugar bags' (75 to 300 kg) of kina for each customary occasion (ie, hui or tangi). There were some customary occasions where several thousand people gathered and considerably more kina would have been harvested.

122 A customary allowance of 90 tonnes is proposed for SUR 2A, and 54 tonnes for SUR 2B. The customary allowance for SUR 2B is smaller given that the habitat and coastal geography within SUR 2B is more likely to support smaller populations of kina than observed in SUR 2A.

123 A customary allowance of 16 tonnes and 14 tonnes respectively are proposed in SUR 8 and SUR 9. These allowances reflect the lack of suitable habitat for the species within each stock area, particularly between Pukerua Bay and Patea, and north of Raglan, as the open sandy beach environment begins to dominate. Kina populations are usually discrete in nature along this coast. More recent information made available from kaitiaki in the King Country and Taranaki coastal areas suggest that at least 4 tonnes of kina are taken annually under customary authorisation along this stretch of coast.

124 A customary allowance of zero is proposed for SUR 10.

Allowance for other sources of mortality

125 There is no information on the current level of illegal catch or other sources of mortality. Given the highly selective nature of the fishery, incidental mortality would be expected to be negligible. It has been suggested that some fishers might check the condition of kina roe before electing to harvest kina from a particular location. This will result in a small source of mortality.

126 MFish proposes an allowance of 4 tonnes in SUR 1B and 2A, 2 tonnes in SUR 1A and SUR 2B, and 1 tonne for other sources of mortality for SUR 8 and SUR 9. Stocks with relatively higher TACs and allowances for both non-commercial and commercial harvesters might account for a proportionally higher level of mortality. Similarly, a further consideration is that the quantity of illegal take might be of more consequence in the North Island in comparison to the South Island given the higher level of local demand and proximity of markets.

127 An allowance for other sources of mortality of zero is proposed for SUR 10.

Total Allowable Commercial Catch

128 MFish proposes the TACCs as set out in Table 5. The TACCs provide opportunities for some commercial development in SUR 1A, SUR 2A and SUR 2B. The TACC proposed for SUR 1B (ie, 160 tonnes) reflects the average catch taken from this area over the last nine years, and when considered together with the additional catch allowance proposed in SUR 1A (ie, 40 tonnes), maintains commercial catches near a level experienced over the last few years (eg, average commercial catch from SUR 1B over last three years is 180.7 tonnes). MFish also acknowledges that representatives from several Mäori tribes within the Bay of Plenty have expressed concerns about the potential extent of commercial fishing for kina once it is introduced into the QMS. The proposed TACC for SUR 1B would not lead to further expansion of the fishery within that area on introduction into the QMS.

129 MFish's initial view is that the resource within SUR 8 and SUR 9 is not capable of sustaining a significant level of fishing over and above the current and foreseeable use of the resource by non-commercial fishers. A TACC of 5 tonnes and 3 tonnes is proposed for SUR 8 and SUR 9 respectively as an initial position. This quantity will allow some evaluation and commercial use of the resource without compromising the stock's sustainability in the short term, or adversely affecting the non-commercial values associated with the fishery.

130 MFish notes that it is unlikely that a commercial fisher would be reliant on the west coast kina resource within the SUR 8 and SUR 9 stock boundaries in any significant way, even if the abundance of the resource could afford larger TACs, and perhaps larger TACCs. Accessing the fishery is weather dependent, and the market acceptance of kina from these areas will be dependent on roe quality. This is further affected by the occurrence of kina of a size smaller than that proposed by fishers, and the influence that habitat quality has on the development of kina gonads.

131 Kina populations are relatively discrete as a result of the distribution of suitable habitat within the SUR 8 and SUR 9 stocks, and are important at a local scale to local communities. In addition, the number of people from Auckland who harvest shellfish, including kina, on a recreational basis along the Waikato coast has increased since the early 1990s. Similarly, anecdotal observations emphasize the importance of the kina resource to the local communities within the SUR 8 stock boundary. In the case of Pukerua Bay, Te Runanga o Toa Rangatira Inc have advised that the kina population is much reduced from previous times, and the kina resource consists of immature individuals.

132 A TACC of 5 tonnes is proposed for the SUR 8 stock and a TACC of 3 tonnes is proposed for the SUR 9 stock. MFish would welcome new information that stakeholders could provide regarding the potential for sustainable commercial utilisation of the resource in these areas.

133 A TACC of zero is also proposed for SUR 10 given the presence of the Kermadec Islands marine reserve.

Other Management Measures

134 A separate section in this document sets out generic information on the setting of deemed values and provides stock-specific information in relation to interim and annual deemed values proposed for kina. The document also contains information on the setting of overfishing thresholds and tolerance levels. MFish notes that an overfishing threshold is proposed for kina.

135 MFish proposes to revoke existing CCLs set for kina in FMAs 2 & 8 and the daily commercial take or possession limit for kina in FMAs 1, 2, 8, and 9. The limits are inconsistent with introduction of kina into the QMS and the setting of a TAC. In addition, MFish also proposes to introduce a number of amendments to the reporting regulations to ensure the effective and efficient operation of the QMS. Details of the proposed amendments are attached as annex one to the kina section.

Preliminary Recommendations

136 MFish recommends that the Minister:

a) **Agree** to set a TAC for SUR 1A of 242 tonnes and within that TAC sets:

   i) a recreational allowance of 100 tonnes;

   ii) a customary allowance of 100 tonnes;

   iii) an allowance of 2 tonnes for fishing-related mortality; and

   iv) a TACC of 40 tonnes.

b) **Agree** to set a TAC for SUR 1B of 448 tonnes and within that TAC sets:

   i) a recreational allowance of 142 tonnes;

   ii) a customary allowance of 142 tonnes;

   iii) an allowance of 4 tonnes for fishing-related mortality; and

   iv) a TACC of 160 tonnes.

c) **Agree** to set a TAC for SUR 2A of 314 tonnes and within that TAC sets:

   i) a recreational allowance of 90 tonnes;

   ii) a customary allowance of 90 tonnes;

   iii) an allowance of 4 tonnes for fishing-related mortality; and

   iv) a TACC of 130 tonnes.

d) **Agree** to set a TAC for SUR 2B of 160 tonnes and within that TAC sets:

   i) a recreational allowance of 54 tonnes;

   ii) a customary allowance of 54 tonnes;

   iii) an allowance of 2 tonnes for fishing-related mortality; and

   iv) a TACC of 50 tonnes.

e) **Agree** to set a TAC for SUR 8 of 38 tonnes and within that TAC sets:

i) a recreational allowance of 16 tonnes;

ii) a customary allowance of 16 tonnes;

iii) an allowance of 1 tonne for fishing-related mortality; and

iv) a TACC of 5 tonnes.

f) **Agree** to set a TAC for SUR 9 of 32 tonnes and within that TAC sets:

i) a recreational allowance of 14 tonnes;

ii) a customary allowance of 14 tonnes;

iii) an allowance of 1 tonne for fishing-related mortality; and

iv) a TACC of 3 tonnes.

g) **Agree** to set a TAC for SUR 10 of 0 tonnes and within that TAC sets:

i) a recreational allowance of 0 tonnes;

ii) a customary allowance of 0 tonnes;

iii) an allowance of 0 tonnes for fishing-related mortality; and

iv) a TACC of 0 tonnes.

h) **Agree** to amend:

i) regulation 22A of the Fisheries (Auckland and Kermadec Areas Commercial Fishing) Regulations 1986 to revoke the daily limit of kina that may be taken or possessed by a commercial fisher within the waters of QMA 1 or QMA 9; and

ii) regulations 14B(1), 14B(2), 14B(3) of the Fisheries (Central Area Commercial Fishing) Regulations 1986 to revoke the annual competitive CCLs for kina in the waters of QMA 2 and 8, and to revoke the daily limit of kina that may be taken or possessed by a commercial fisher within those waters.

iii) The Fisheries (Reporting) Regulations 2001 to outline the codes to be used by commercial fishers when completing their statutory catch returns.

i) **Note** that it is proposed to set deemed values and overfishing thresholds for kina and that discussion of this issue is contained in the deemed values and overfishing threshold section of this Initial Position Paper.

ANNEX ONE

Amendment to regulations

Redundant catch limits

Proposal

1 MFish proposes to revoke existing CCLs set for waters within QMAs 2 and 8 and the 900 kg daily take or possession limit for kina in these areas, in addition to the 300 kg daily take or possession limit for kina in QMAs 1 and 9. Those controls are inconsistent with introduction of kina into the QMS and the setting of a TAC/TACC.

Background

2 Under the Fisheries (Central Area Commercial Fishing) Regulations 1986, annual competitive catch limits apply to commercial kina fishers in the waters of QMAs 2 and 8. These limits were set in November 1989 to constrain commercial catches.

3 In addition, a daily take or possession limit of 900 kg also applies to commercial fishing in QMAs 2 and 8. This restriction was similarly introduced in November 1989 to spread fishing effort throughout the fishing year in light of the annual CCL. A daily take or possession limit of 300 kg in QMAs 1 or 9 was also applied through the Fisheries (Auckland and Kermadec Areas Commercial Fishing) Regulations 1986 in November 1989. This latter restriction had previously been applied by a condition on fishing permits issued for this species in the relevant area.

Problem definition

4 The purpose of the CCLs was to constrain commercial catch to certain, presumably sustainable, levels. The QMS constrains catch to sustainable levels using a TAC. The retention of annual CCLs under the QMS for kina stocks within the waters of QMAs 2 and 8, as well as a daily take or possession limit for the stocks in the waters of QMAs 1, 2, 8 and 9, will be redundant after kina stocks enter the QMS. Further, the management area boundaries applying to the annual CCLs and daily limits do not correspond to the new kina QMAs.

Preliminary consultation

5 No preliminary consultation has been undertaken concerning the removal of the annual CCLs or daily catch limits, although some industry members are aware that this will be a probable result of QMS introduction of kina stocks in northern New Zealand.

Options

6 Given that a TAC and TACC must be set for each stock upon QMS introduction, CCLs and daily take or possession limits are no longer required. Further, given that

commercial fishers are obliged to balance catch against ACE, there is no need to unnecessarily constrain the efficiency of their operation through continued application of a daily catch limit. No option, other than to amend the regulations to revoke these provisions, is considered appropriate. Regulation 22A of the Fisheries (Auckland and Kermadec Areas Commercial Fishing) Regulations 1986 is set out in a table form that includes both the daily limit and the method specification, and will need to be re-configured to retain the restriction that hand-gathering is still the only permissible fishing method allowed to take this species. The hand-gathering only provision is set out in a separate regulatory provision in the Fisheries (Central Area Commercial Fishing) Regulations 1986, and those regulations will not require amendment.

Non-regulatory measures

7 There are no non-regulatory alternatives to revoking the annual and daily CCLs.

Regulatory measures

8 Revoking the CCL regulatory provisions removes restrictions that are no longer necessary under the QMS. A minor revision of the Fisheries (Auckland and Kermadec Areas Commercial Fishing) Regulations 1986 will be necessary to retain the restriction that hand-gathering is the only permissible fishing method for the taking of kina.

Costs and benefits of the proposal

9 Revoking the regulatory provisions removes the requirement to enforce competitive catch limits and / or daily catch limits, and avoids duplicate catch limits.

10 Revoking the daily catch limits will enable commercial fishers to manage their fishing operations more efficiently in accordance with quota and/or ACE holdings. It will serve to promote the efficient use of the fishery. Latent effort, in the form of a number of fishing permits managed by a few individuals acting as agents, is unlikely to continue in existence as harvesting rights are likely to be consolidated under new entities. Harvesting operations will then be carried out more efficiently without daily catch restrictions.

11 The only cost associated with revoking these regulatory provisions relates to the government processes required to implement the changes sought.

Administrative implications

12 There are no administrative implications associated with revoking these regulatory provisions other than those normally required of government processes when minor regulatory amendments are made.

Conclusion

13 CCLs for kina stocks are redundant under the QMS. The proposed revocation of the redundant regulations will result in benefits at no on-going cost.

14 The daily catch limits applying to kina taken in the waters of QMAs 1, 2, 8 and 9 are redundant under the QMS. The proposed revocation of the redundant regulatory provisions will result in benefits at no on-going cost.

Consequential Amendments to the Fisheries (Reporting) Regulations 2001

Background

1 It is proposed to make amendments to the Fisheries (Reporting) Regulations 2001 by amending:

a) Table 1 of Part 1 of Schedule 3 of those regulations that specifies the codes to be used when completing catch returns that must be furnished to the Chief Executive. This amendment will incorporate codes which reflect the QMAs for kina; and

b) Table 2 of Part 1 of Schedule 3 of those regulations defining the specific QMAs defined by the Minister in his declaration of October 2002.

2 The Fisheries (Reporting) Regulations 2001 provide the framework for the completion and furnishing of statutory catch returns by fishers to the Chief Executive. Information contained in these returns is used for research, stock assessment, enforcement, and administrative reasons (including balancing catch against ACE). With the Minister's decision to establish specific QMAs for kina stocks, it is necessary to amend these regulations to ensure that they reflect the decisions made, and to enable the effective and efficient operation of the QMS.

Problem definition

3 The obligations for fishers to report their catch and the codes used to complete these returns should reflect the Minister's decisions on QMAs for each species to be introduced into the QMS on 1 October 2003.

Preliminary consultation

4 No direct consultation on the need to revise these regulations has been undertaken as it is a consequential amendment flowing from the Minister's QMA decisions.

Options

5 As the reporting framework is contained in regulations, there is no other option than to amend these regulations.

Costs and benefits of the proposal

6 The proposed amendments clarify the obligations for commercial fishers when completing their statutory returns. Regulatory clarification means commercial fishers are aware of their reporting obligations and complete their returns in the simplest fashion possible.

Administrative implications

7 Minor amendments to forms and explanatory notes will be required consequential to this regulatory amendment.

Conclusion

8 Consequential amendments to the Fisheries (Reporting) Regulations 2001 are necessary to fulfil the requirements to effectively manage kina stocks within a QMS environment from 1 October 2003.

KINA (SUR) – NORTH ISLAND – FINAL ADVICE

Initial Proposal

1 It was proposed in the Initial Position Paper (IPP) to set the following TACs, allowances for customary fishing interests, recreational interests, other sources of fishing-related mortality, and TACCs for kina stocks in the North Island (including the Kermadec Islands) (refer Table 1). You have already decided to introduce these stocks into the QMS on 1 October 2003.

Table1: Proposals in the Initial Position Paper (IPP)

Stock	TAC	Customary allowance	Recreational allowance	Other sources of fishing-related mortality	TACC
SUR 1A	242	100	100	2	40
SUR 1B	448	142	142	4	160
SUR 2A	314	90	90	4	130
SUR 2B	160	54	54	2	50
SUR 8	38	16	16	1	5
SUR 9	32	14	14	1	3
SUR 10	0	0	0	0	0

2 The above proposals are part of a package of measures for introducing northern kina stocks into the QMS. Other measures proposed for these stocks have been addressed in a separate advice paper to you and include:

a) revoking competitive CCLs in FMAs 2 and 8;

b) revoking the daily CCLs for kina in FMAs 1, 2, 8, and 9; and

c) providing codes to be used by fishers when completing their statutory catch returns.

Biological and Fishery Information

Submissions

3 **Te Ohu Kai Moana (TOKM)** is surprised that the allowances proposed for the non-commercial sector are based on a calculation using a diameter-weight relationship for kina from Dusky Sound. TOKM notes that North Island kina are much smaller than those found in the South Island, except in 'fast-growth paua areas'.

4 TOKM further observes that there is a paucity of information available from which to draw sensible conclusions on sustainability and management measures. It reminds MFish that it has a clear responsibility to obtain sufficient information for the proper management of species on a sustainable basis before proposing the introduction of species into the QMS. TOKM considers that MFish has clearly failed to meet that responsibility for all proposed 1 October 2003 fishstocks, particularly for kina stocks in the North Island.

5 **The New Zealand Seafood Industry Council Ltd** (SeaFIC) notes that the proposals developed for kina illustrate a general point SeaFIC has made about use of, and access to, the best available information. SeaFIC observes that Peter Herbert, a significant stakeholder in the kina fishery, extended an invitation to provide MFish with any information that could be of value for the purposes of developing sustainability measures and management controls. SeaFIC considers that it has been to the detriment of the proposals developed that MFish did not take up the offer to access such information.

6 SeaFIC includes additional information provided by NIWA on average kina wet weights from three northeastern North Island sites. These provide average weights of 131.14, 169.05 and 162.80 grams respectively. SeaFIC notes that these averages differ significantly from the Dusky Sound sample (248.3 grams).

7 **Peter Herbert** observes that the estimates of recreational catch, based on scaled up telephone and diary surveys, have large margins of error. Mr Herbert draws attention to the fact that one of the error estimates is up to 72%, suggesting that the estimate it is associated with could be 72% too much.

MFish Discussion

8 MFish agrees that use of the diameter-weight relationship from Dusky Sound is not ideal for application to the North Island kina populations, but this relationship was the best information available at the time of writing the IPP. Use of this data was explicitly stated in the IPP.

9 MFish acknowledges that the recently collected NIWA data (September 2002 – April 2003) from three north-eastern North Island sites is likely to be more representative of the kina population size structure for the North Island, and would provide better information from which to develop TACs and allowances for the non-commercial sector. The average weight of the 260 kina measured by NIWA is 154.33 grams, or 0.62 of the average weight observed from Dusky Sound. The NIWA data is also likely to be the best available information because it is recently collected, in contrast to the size structure information that was collected by MAF Fisheries in 1993 from the offshore Ariel Reef near Gisborne. Similarly, the Ariel Reef information (referred to in the IPP) is unlikely to be representative of the size structure of kina populations found around the mainland.

10 The proposed allowances in the IPP can be adjusted by the factor 0.62 to derive revised quantitative estimates for recreational and customary interests (refer Table 2). Comments on the revised estimates for each stock and their contribution to recommendations on the TACs and allowances are made in the subsequent section, having taken into account specific submissions on such matters. The reduction in the estimates of recreational catch, and therefore the proposals for allowances for recreational and customary interests, do not give rise to more catch being available to the commercial sector. This is because the initial TACs were derived from a composite of estimated catch from each sector and other sources of fishing related mortality. The contribution of non-commercial catches to the total catch has been reduced to account for the smaller average size of North Island kina.

Table 2: **Initial proposed allowances and revised estimates for recreational and customary interests (in tonnes).**

Stock	Initial proposed allowance	Revised estimates
SUR 1A	100	63
SUR 1B	140	88
SUR 2A	90	56
SUR 2B	54	34
SUR 8	16	10
SUR 9	14	9
SUR 10	0	0

11 TOKM submits that MFish has failed to meet its responsibility to obtain sufficient information to inform QMS introduction for kina. In circumstances of limited information being available, the information principles of the 1996 Act provide guidance on the matters that shall be taken into account. One of those principles provides that caution should be applied when information is uncertain, unreliable, or inadequate. A further principle requires that the absence of, or 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.

12 MFish does not consider that it is always possible to have all the information one might desire when introducing a species into the QMS. MFish also notes that introduction of the North Island kina stocks was deliberately delayed a year in order that stakeholders could familiarise themselves with the introduction process applied to the South Island stocks, in addition to providing an opportunity to gather further information (from all sources) of relevance to the fishery in northern New Zealand.

13 SeaFIC submits that MFish did not avail itself of information held by Mr Herbert. MFish wishes to clarify that it specifically informed Mr Herbert in mid to late 2001 of the process it followed to introduce a species into the QMS, and the opportunities available for input into the process for the northern kina stocks. Mr Herbert was advised that he was welcome to provide information at any time prior to the consultation phase. No information was received from Mr Herbert prior to the release of the s 18 IPP, dated 24 May 2002, for the determination of stock boundaries, or the release of the current IPP on proposed TACs and allowances.

14 Mr Herbert met an MFish official during the consultation period for the setting of sustainability measures, and the extent of the information he provided is covered in his subsequent written submission. Mr Herbert noted that he did not have quantitative survey information or other information documented, but that much of his valuable knowledge was based on day-to-day recollections of his fishing activities over an extended period. MFish has considered the information provided by Mr Herbert.

15 MFish agrees with Mr Herbert to the extent that the error around the estimates of the number of kina taken by recreational fishers is large. However, while Mr Herbert observes that specific use of one of the estimates may be 72% higher than the actual recreational catch, it is equally the case that use of that estimate may underestimate the actual recreational catch by 72%. This is why the average is used in the subsequent calculations.

16 Given the concern expressed in submissions that MFish information is uncertain, unreliable or inadequate, MFish has taken a more cautious approach in its final recommendations. In the medium term, more information on the non-commercial catch in particular will become available to assist in refining the allowances applied at the time of introduction of North Island kina stocks into the QMS. Further, MFish notes the likely sustainability advantage of having a TAC in place for each kina stock under the QMS, in preference to the current situation.

Environmental considerations

Submissions

17 No submissions were received on environmental considerations.

TAC management strategy

Submissions

18 No submissions were received on the TAC management strategy to be adopted.

MFish Discussion

19 MFish confirms that its recommendations for the setting of TACs for all kina stocks the subject of this section are based on the management option provided by s 13 of the 1996 Act, as discussed in the IPP.

TAC, allowances, and TACC setting considerations

20 Submissions generally combine discussion of the issues associated with setting the TACs, allowances, and TACCs. The summaries of submissions and discussion that follow are not divided under separate sub-headings, but the issues relevant to TAC setting are separated and discussed by paragraph prior to the discussion about setting allowances and the TACC for each stock.

21 The recommended TACs and allowances for North Island kina stocks are set out in Table 3 (changes to the TACs and allowances as proposed in the IPP are marked in bold).

Table 3: Final recommendations for TACs, TACCs, and other allowances (in tonnes).

Stock	TAC	Customary allowance	Recreational allowance	Other sources of fishing-related mortality	TACC
SUR 1A	172	65	65	2	40
SUR 1B	324	90	90	4	140
SUR 2A	204	60	60	4	80
SUR 2B	102	35	35	2	30
SUR 8	26	12	12	1	1
SUR 9	33	11	11	1	10
SUR 10	0	0	0	0	0

Submissions

22 **Mai I Nga Kuri a Wharei Ki Tihirau Regional Fisheries Forum** (Bay of Plenty Iwi Liaison Group) are opposed to the decision to introduce kina into the QMS, on the basis that it is a food source that is consumed only by Mäori, and therefore any commercialisation of kina is for export to foreign appetites. The Forum submits that the commercialisation of kina will lead to more serious depletion of stocks in an area where stocks are already depleted. The Forum suggests that a rähui on the commercial take of kina should be applied in the area of interest to them as is the case in Te Whanau a Apanui (Eastern Bay of Plenty), and that all commercial kina licences be rescinded. In a recent hui held on 27 June 2003 where correspondence from the Minister of Fisheries reiterated that the decision to introduce the North Island kina stocks into the QMS had been made, some of the representatives of the Forum indicated a desire to see a TACC of zero in the area of relevance to Forum representatives.

23 **Nga Hapu o Te Uru** (NHTU)**,** consisting of delegates of west coast hapu and iwi between Port Waikato and Waipingao (south of Mokau), observe that with the depletion of fish stocks mainly through intensive commercial fishing, hapu have become more reliant on kaimoana, such as kina and other shellfish species, in order to feed whänau and manuhiri. NHTU confirms the observation made in the IPP that kina is important to the Waikato people. It observes that the Waikato population is approximately 267,000 people, of that 18% are Mäori, and that Maniapoto also has a large Mäori population. Both areas host numerous hui and require a regular supply of kaimoana. NHTU queries whether the resource is able to sustain commercial activity as well as their people's needs at the suggested TAC of 32 tonnes for SUR9. It further states that given the importance of kina to its people for customary purposes, that the SUR9 stock should not be introduced into the QMS this year.

24 **Te Runanga-a-Iwi o Ngati Kahu** (East Northland) did not provide a written submission, but sought a meeting with MFish following its submission last year on the determination of stocks. This meeting occurred on 7 June 2003 with about 20 representatives of the tribe at its Auckland office. Representatives agreed with the view expressed that kina was an important food resource for Mäori. Representatives were reasonably comfortable with the concept of a catch limit (particularly as applied to the commercial sector), where one had not previously been in place. Further, representatives acknowledged the benefit of the stock boundary extending across Tai Tokerau only (ie, SUR 1A), rather than the whole of FMA 1.

25 Ngati Kahu representatives noted their concern about the potential for commercial fishers to deplete kina resources in areas used by non-commercial fishers. Representatives advised that a commercial fisher who had recently fished kina in the Karikari Peninsula area had been informed that his activities were not welcome, as the area was used for non-commercial purposes. Representatives also expressed some initial reservations about the results of the telephone and diary surveys. This is possibly because they perceived that their seasonally high use of the resource may not have been captured by such surveys. It was evident that they would probably prefer a survey be conducted specifically to document their fishing activities for both customary and recreational purposes. More generally, they observed that the proposals for the SUR 1A stock would allow the fishery to be predominantly used by

the non-commercial sector, even after a likely adjustment to reduce non-commercial allowances based on new NIWA data on average kina weight.

26 **TOKM** considers that the requirements of s 13 of the 1996 Act have not been met for kina and reserve the right to pursue that matter if no rapid corrective progress is made. The main reason why it considers this to be the case relates to the paucity of information available from which to draw sensible conclusions on sustainability and management measures. TOKM states that it is not prepared to make any comments on the preliminary recommendations contained in the IPP as it relates to TACs, allowances and TACCs.

27 **SeaFIC** makes the observation that the potential over-estimation of non-commercial allowances, based on a Dusky Sound diameter-weight relationship as applied to estimates of the number of kina taken by recreational fishers, raises concerns as to whether the sustainability measures in the form of non-commercial allocations will in fact threaten the sustainability of the kina resource. SeaFIC suggests that the estimated non-commercial landings are over-estimated by between 32-47%. Further, SeaFIC notes the acknowledged regional and fine scale variability in the individual size of kina in different North Island stocks.

28 SeaFIC agrees in principle to the view put forward in the IPP to set a TAC that provides for some level of initial commercial development, noting that further development could be advanced by stakeholders through initiatives such as adaptive management programmes (AMPs) and fishery plans. However, because of the difficulties in achieving such outcomes in a shared fishery, and without access to a legitimately mandated recreational stakeholder body, it considers that it will be impossible for commercial stakeholders to enter into, or advance a multi-sector agreement to achieve the fine spatial scale management widely accepted as the most appropriate approach for the kina fishery. Consequently, it considers that it would be appropriate to provide for the development potential in the stock in the initial TAC setting rather than look to future adjustments.

29 **Peter Herbert** observes that his commercial fishing activity involves an element of rotational harvesting. Discrete areas such as Cuvier and Alderman Islands are harvested, leaving immature kina behind, before harvesting occurs again in the same area about two years later. Monitoring of the state of re-growth occurs periodically in order to assess when re-harvesting should occur. Mr Herbert submits the following specific comments on each of the North Island kina stocks.

SUR 1A

30 Mr Herbert considers that the allowances provided for the non-commercial sector in SUR 1A are unrealistic at 100 tonnes each for the customary and recreational sectors. On the basis of his eight years experience in the fishery, he would suggest that the allowances would be more likely to be 70 tonnes for each sector. Mr Herbert further advises that the area has been under-utilised from a commercial point of view because he considers that there is an abundance of kina closer to his operational base in Whitianga. However, he states that it is his intention to move into the East Northland area over the next five years, which would serve to balance his existing harvesting programme in SUR 1B. He notes that the season for harvesting kina in an economic state (good roe condition) in the SUR 1A stock is much shorter than more southern

locations. He suggests that the TACC for SUR 1A could be increased to 60 tonnes, if SUR 1A is kept as a separate stock.

SUR 1B

31 Mr Herbert considers that the customary and recreational allowances provided for SUR 1B are very generous, as a result of the large estimates of error associated with the scaled up results from the telephone and diary surveys. Mr Herbert considers that the proposed TACC at 160 tonnes is 'pretty well spot on', based on the preceding eight years of commercial catch information that is available. Mr Herbert notes that 80-90% of this catch is derived from fishing activities he is involved with, and he considers that this information represents a fishery being sustainably harvested.

SUR 2A

32 Mr Herbert considers that the customary allowance provided for this stock may possibly be a little low. He notes that this stretch of coast is very productive for the customary catch and is a very important food source for the local iwi. He suggests allowances of 120 tonnes for each of the recreational and customary allowances. Further, he suggests that the TACC is generous given that the entire commercial catch for SUR 2 has plummeted in the last five years. Mr Herbert observes that his harvesting activities are confined to the area between Cape Runaway and Hicks Bay where 10 tonnes can be harvested. He advises that he has no knowledge of the rest of the SUR 2A stock. However, he notes that Ocean Queen, a local fishing company, was responsible for the increased commercial catch in the period 1992 to 1995. Commercial catch from this stock significantly decreased following their closure.

SUR 2B

33 Mr Herbert observes that he has no information on the status of the kina resource for this stock. He concurs with MFish's approach in proposing the allocations made on the information available.

SUR 8

34 Mr Herbert observes that this area should be incorporated as part of a broader stock incorporating SUR 2B and a TACC of 50 tonnes apply to the combined area. However, recognising the stock as it stands, he believes that there has to be some TACC in SUR 8, as it does have areas of commercial interest, and for the future, the prospect of re-seeding of Kapiti Island should be provided for. Mr Herbert observes that if SUR 8 cannot be amalgamated with SUR 2B, then 5 tonnes is a fair TACC allocation given that in his view the Taranaki coast does not hold commercial quantities of kina at this time.

SUR 9

35 Mr Herbert considers that the proposed TACC is too low. He observes that the absence of fishing activity does not mean that kina stocks are absent. He states that his operation has not historically fished in this area because it would be uneconomic based on the daily catch restrictions currently applying to use of the two fishing permits with access to this area. Mr Herbert considers that a daily harvest of 1500 kg

is required to be economic. He also notes that there has been limited input from the commercial sector in providing information for this stock.

36 Mr Herbert has observed populations of kina within SUR 9 while fishing for paua. He observes that the most abundant area for kina within SUR 9 is at the Three Kings Islands. He estimates a sustainable harvest of 10 tonnes per year from this area alone. Having swum this coast, he also suggests that the stretch of coast between North Cape and Cape Maria Van Diemen would support a sustainable harvest of 10-12 tonnes per year. Further areas he identifies as having commercial catch potential include the Manukau Heads, and some areas (including Gannet Island) between Raglan and the SUR 9 southern boundary at Tirau Point. However, he has not endeavoured to determine the exact status of kina populations in these areas, given the limited ability for commercial fishers to access this area at present. He suggests that a more realistic TACC for SUR 9 would be 30 tonnes, and a more realistic customary and recreational catch of 20 tonnes each, bringing the TAC to 70 tonnes.

SUR 10

37 Mr Herbert agrees with the proposals for this stock.

MFish Discussion

General matters

38 MFish notes that all recreational and customary allowances recommended in this final advice have been reduced to take into account the new information on the smaller average weight of kina at three north-eastern sites in the North Island. This adjustment has a considerable impact on the TAC considered for several of the stocks because the TACs were developed from a consideration of known or estimated levels of catch from each sector, and all other sources of fishing-related mortality.

39 Furthermore, in discussing the proposed TACC for each of the stocks, a more cautious approach has been adopted where initial proposals provided for commercial development. Similarly, MFish notes that s 5 of the 1996 Act requires that persons exercising functions under this Act are to act in a manner consistent with the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992. The Crown has a duty to help recognise use and management practices of Mäori and their relationship with traditional fisheries such as kina. The recommendation of more cautious TACs and TACCs is likely to ensure that such values are not unnecessarily compromised in the medium term.

40 In response to SeaFIC's submission supporting TACCs that allow for development opportunities, MFish believes that the TACs and TACCs recommended with final advice do provide the opportunity for commercial development beyond recent commercial catch for some stocks (eg, SUR 2A, SUR 2B). MFish does not consider that it would be appropriate to provide for higher levels of commercial development on introduction to address any difficulty that the commercial sector might find in engaging with non-commercial interests to develop an AMP or fishery plan approach. The ability of various interests to agree on further management strategies, and what form they might take, is not a relevant matter when considering the statutory obligations for TACC setting. For a target fishery such as kina, it is possible to

undertake directed research to determine the appropriate yields from stocks if other options to develop fisheries are problematic.

41 MFish does not concur with the view expressed by the Bay of Plenty Iwi Liaison Committee that kina taken commercially are exported. Most of the commercial catch is sold domestically, including to Mäori in urban settings, and other urban community groups who hold the species in high regard as a food item.

Response to stock-specific submissions

SUR 1A

42 In establishing the TAC, MFish combined the available estimates of catch by the respective sectors. The new information on the smaller average weight of North Island kina produces smaller estimates of recreational and customary catch of about 65 tonnes for each sector.

43 MFish maintains that the initial proposal of 40 tonnes as the commercial catch contribution to estimating the TAC is unlikely to raise an unacceptable risk to the overall sustainability of the stock, or the interests of the non-commercial sector where commercial fishing is appropriately placed and harvest strategies do not result in localised depletion. Historical commercial catch reached 38 tonnes in the 2001-02 fishing year without any sustainability concerns being expressed at the level of the SUR 1A stock. However, it would be premature to consider provision for 60 tonnes of commercial catch at this time. MFish recommends that the 2 tonne estimate made for other sources of fishing-related mortality be included as a contribution to the TAC. The revised TAC is therefore 172 tonnes.

44 MFish considers that the quantitative estimates contributing to the revised TAC of 172 tonnes are an appropriate basis on which to allocate the stock between the different interests in the form of allowances. Specifically, an allowance of 65 tonnes for the Mäori customary non-commercial fishing interest, an allowance of 65 tonnes for recreational interests, an allowance of 2 tonnes for other sources of fishing-related mortality, and therefore a TACC of 40 tonnes are recommended.

SUR 1B

45 To estimate the TAC, the contribution from non-commercial catch has been reduced to account for the smaller size of kina in the North Island. The revised calculation provides for recreational and customary estimates of about 90 tonnes each for the SUR 1B stock.

46 MFish previously advised that the average annual commercial catch over the last 12 years was 128 tonnes, and 159 tonnes over the more stable nine year period between 1993-94 and 2001-02. Either of these averages represents a significant increase in average catch compared with data from the 1980s. In the IPP, MFish proposed to use a figure of 160 tonnes for the purpose of TAC setting on the basis that no sustainability concerns were apparent at the level of the stock during a nine year period of harvest at that level. However, it did note that local depletion was a feature in parts of the stock, and some of this may be due to commercial fishing activity. There is some evidence for this in the observation by Mr Herbert that kina populations

subject to rotational harvesting practises require a minimum of two years recovery to reach biomass levels where commercial harvesting can be repeated. Fishing activities at the recent average annual commercial harvest levels may have implications for interdependent stocks forming elements of a coastal reef ecosystem, and a slightly more cautious approach is likely to be warranted in considering the contribution of commercial catch to the TAC calculation.

47 Local depletion has been reported to MFish in the inner Hauraki Gulf (most likely a non-commercial effect), and by representatives of Mäori in the western Bay of Plenty. Such concerns have been reinforced by representatives of the Bay of Plenty Iwi Liaison Group at hui and through its submission. MFish is also aware of further observations being expressed at other hui about the unavailability of suitable kina for non-commercial harvest within the stock.

48 Conversely, Mr Herbert considers that a 160 tonnes TACC would provide for a sustainably managed commercial fishery for this stock. Commercial fishers have maintained historical catch levels for a reasonable period of time, and there has been no overall recent reduction in catch from the commercial fishery. However, information on trends in fishing effort are not available. Given the uncertainty about whether or not commercial fishing activities threaten the maintenance of the stock biomass at or above a level that can produce the maximum sustainable yield (MSY), and adversely affect interdependent stocks, a lower figure of 140 tonnes for the purposes of TAC setting is recommended. This is higher than the 12 year annual average catch (128 tonnes), but less than the more recent nine year annual average catch (159 tonnes).

49 MFish recommends that the initial estimate for other sources of fishing-related mortality (4 tonnes) be included as a contribution to the TAC. The revised TAC is therefore 324 tonnes.

50 MFish considers that the quantitative estimates contributing to the revised TAC of 324 tonnes are an appropriate basis on which to allocate the stock between the different interests. Specifically, an allowance of 90 tonnes for the Mäori customary non-commercial fishing interests, an allowance of 90 tonnes for recreational interests, an allowance of 4 tonnes for other sources of fishing-related mortality, and therefore a TACC of 140 tonnes. The challenge for the future will be to manage the use of this resource at a local scale to avoid risks of local depletion, and to ensure that cultural, social and economic outcomes are appropriately balanced.

SUR 2A

51 Considering submissions and new information about the size of the kina in the North Island, MFish considers that a more cautious approach to TAC setting is required for the SUR 2A stock than initially proposed.

52 The revised contribution toward the TAC for recreational fishing interests is 56 tonnes. Given that kina are known to be an important contribution to subsistence fishing by Mäori and others in this area, MFish considers that it would be appropriate to increase this estimate to 60 tonnes for both recreational and customary catch.

53 Alternatively, Mr Herbert suggested that the original proposal of 90 tonnes for each of the non-commercial sectors may be insufficient, and suggested 120 tonnes for each non-commercial sector instead. Unfortunately, while MFish agrees that use of the kina resource is very important to customary and recreational fishers within this stock, Mr Herbert does not articulate why he considers these amounts to be more appropriate. Further, Mr Herbert advises that he has no first-hand knowledge of the SUR 2A stock to the south of Hicks Bay.

54 MFish agrees with Mr Herbert's observation that the increased commercial catch in the early 1990s was as a result of endeavours by Ocean Queen (New Zealand) Ltd, a Licenced Fish Receiver based in Gisborne, in association with the few permit holders in the area. However, to clarify, commercial catch has not 'plummeted' over the last five years because of sustainability concerns at the level of the stock, but simply because most of the commercial fishers authorised in this area have not been active. This is because the processor stopped its marketing activities, and eventually wound up its operations. The fishers did not appear to have an alternative processor who was interested in receiving such quantities.

55 Mr Herbert's observation that 10 tonnes could be taken on a sustainable basis between Cape Runaway and Hicks Bay is useful in extrapolating over the remaining stock area. This allows a rough assessment to be made on the potential commercial harvest from the entire stock area. This suggests, based on the length of coast within the stock, that the commercial catch figure of 130 tonnes proposed in the IPP may not be justified for the purposes of TAC setting. A figure closer to the 12 year average annual commercial catch of about 65 tonnes would be more cautious, even though commercial catch peaked at 182 tonnes in the 1992-1993 fishing year, and exceeded 130 tonnes in three consecutive years between 1992-1993 and 1994-1995. Those catch levels have not been approached in the most recent eight years given a lack of fishing effort, and consequently there is no more recent indication of the extent of the resource. Accordingly, a more cautious figure of 80 tonnes is recommended, which will provide scope for development beyond current catches.

56 MFish recommends that the initial estimate made for other sources of fishing-related mortality (4 tonnes) be included as a contribution to the TAC. The revised TAC is therefore 204 tonnes.

57 MFish considers that the quantitative estimates contributing to the revised TAC of 204 tonnes are an appropriate basis on which to allocate the stock amongst the different interests. Specifically, an allowance of 60 tonnes for the Mäori customary non-commercial fishing interest, an allowance of 60 tonnes for recreational interests, an allowance of 4 tonnes for other sources of fishing-related mortality, and therefore a TACC of 80 tonnes.

58 In accordance with s 21(4), MFish notes that a temporary closure under s 186A of the 1996 Act was been put in place at Hicks Bay within the SUR 2A stock. MFish notes that the Hicks Bay area is relatively small in proportion to the area covered by the SUR 2A stock, and that no adjustment in the customary allowance is recommended by virtue of this temporary closure being in place.

SUR 2B

59 MFish considers that a more cautious approach than initially proposed to TAC setting is required for the SUR 2B stock, taking into account the available information and the importance of the fishery to Mäori. Consideration of the smaller size of North Island kina reduces the estimates of catch to about 35 tonnes each, and these reduce the respective contributions towards estimating the TAC.

60 As noted in the IPP, commercial catch peaked at nearly 8 tonnes in the 2000-01 fishing year, but reference to either a CCL currently applying to FMA 2 or commercial catch statistics was considered of limited value. A figure of 50 tonnes was proposed to represent a reasonable level of utilisation when considered against the risks to the stock, as well as an appreciation of the extent of habitat available to support kina populations in the SUR 2B stock. A revised figure of 30 tonnes for the purposes of TAC setting further reduces risks to ensuring sustainability of the stock and the future interest of all stakeholders, while still providing for development beyond recent catch.

61 MFish recommends that the initial estimate for other sources of fishing-related mortality (2 tonnes) should be included as a contribution to the TAC. The revised TAC is therefore 102 tonnes.

62 MFish considers that the quantitative estimates contributing to the revised TAC of 102 tonnes are an appropriate basis on which to allocate the stock amongst the different interests. Specifically, an allowance of 35 tonnes for the Mäori customary non-commercial fishing interest, an allowance of 35 tonnes for recreational interests, an allowance of 2 tonnes for other sources of fishing-related mortality, and therefore a TACC of 30 tonnes.

SUR 8

63 Taking the smaller size of North Island kina into account, the revised calculation provides for recreational and customary estimates of 10 tonnes each. Based on communications with kaitiaki representatives in the northern part of the SUR 8 stock, MFish considers that the overall estimates may be just sufficient to cover the existing use of the kina resource for customary purposes. Given the uncertainties surrounding these estimates, and knowledge that kina is particularly well regarded by at least the Taranaki and Maniapoto Mäori populations in the northern part of the stock, MFish considers it appropriate to incorporate a catch estimate of 12 tonnes for each non-commercial sector in determining the TAC.

64 The scope for commercial use of the SUR 8 stock is limited, as reflected in the figure of 5 tonnes proposed for the purpose of TAC setting. MFish agrees with Mr Herbert that there might be a few areas (eg, Kapiti Island) where some commercial activity could potentially occur in the future. For the purposes of TAC setting, MFish believes that a figure of 5 tonnes is likely to be representative of the development opportunity in this stock that can be justified by the available information.

65 MFish recommends that the initial estimate made for other sources of fishing-related mortality (1 tonne) should be included as a contribution to the TAC.

66 MFish considers that the estimates contributing to the revised TAC of provisionally 30 tonnes are an appropriate basis on which to allocate the stock amongst the different interests. Specifically, an allowance of 12 tonnes for the Mäori customary non-commercial fishing interest, an allowance of 12 tonnes for recreational interests, an allowance of 1 tonne for other sources of fishing-related mortality, and a TACC of 5 tonnes. However, there are some specific obligations arising from negotiations between the Crown and Mäori to consider when determining whether a TACC should be made available. These were not explicitly identified in the IPP.

67 A Deed of Settlement was signed between the Crown and Ngati Ruanui (South Taranaki) on 12 May 2001 providing that kina is a taonga fish species. The Deed provides that targeted commercial harvest is to be prohibited in the Ngati Ruanui Fisheries Protocol Area upon settlement legislation being passed. The Fisheries Protocol Area includes the area from the Waingongoro River to the west of Hawera to the Whenuakura River mouth to the east of Patea, a distance of approximately 35 kilometres. Settlement legislation was passed as recently as 4 June 2003, and steps have yet to be taken to specifically address this issue.

68 However, the Deed provides that targeted commercial fishing of kina and other specified taonga species may be permitted within the Ngati Ruanui Fisheries Protocol Area on the following basis. First, it must be demonstrated to your satisfaction that there are sufficient quantities to provide a commercial catch of this species. Secondly, you are required to consult the 'Te Runanga O Ngaati Ruanui Trust' (an advisory committee appointed under the Ministry of Agriculture and Fisheries (Restructuring) Act 1995) on any 'Commercial Catch Proposal' in accordance with s 10 of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 and s 12 of the 1996 Act.

69 Representatives of the Ngati Ruanui iwi, including those having involvement in the Deed of Settlement, were forwarded advice (15 April 2003) on the proposals to set sustainability measures for the kina fishery as a result of its introduction into the QMS. No response was received. MFish did not specifically forward notice of the proposals to the new advisory committee on your behalf as it was only appointed on 4 June 2003. At an unrelated meeting of 9 July 2003 the Manager of Ngati Ruanui Iwi Authority Incorporated advised an MFish official that the advisory committee would take at least a year to be in a position where it could engage the Crown on various fisheries issues.

70 MFish notes that a further Deed of Settlement has been signed between the Crown and Ngati Tama (north Taranaki) on 5 December 2001 providing that kina is a taonga fish species. On a similar basis, the Deed provides that targeted commercial harvest is to be prohibited in the Ngati Tama Fisheries Protocol Area upon settlement legislation being passed. Settlement legislation is not due to be passed until later in 2003. Representatives of the Ngati Tama iwi, including a key representative having involvement in the Deed of Settlement, were similarly forwarded advice (15 April 2003) on the proposals to set sustainability measures for the kina stocks as a result of its introduction into the QMS. No response was received. As the Settlement legislation has not been passed, a decision to set a TACC that provided for some targeted commercial fishing of the SUR 8 stock could be taken without breaching any consultative obligation. Further, the introduction of a regulatory prohibition for the relevant Fisheries Protocol Areas would still be able to be advanced to ensure that the fishery was not pursued on a commercial basis within these areas.

71 The nature of the Ngati Ruanui settlement still provides for commercial fishing of kina within its 'Fisheries Protocol Area' where it is taken as an incidental bycatch, and not as a targeted fishery. It is unlikely that kina would be taken as an incidental bycatch of most other fisheries operating within the SUR 8 area. Kina may accidentally seek refuge in pots, although rock lobster fishing is limited along this coast. Providing a TACC of 5 tonnes would be likely to exceed the requirements to adequately provide for incidental bycatch of kina from the Ngati Ruanui Fisheries Protocol Area. Although targeted commercial fishing may not be viable in the Ngati Ruanui Fisheries Protocol Area, MFish considers that a TACC of 1 tonne would be sufficient to cover bycatch, while further discussions on the scope for any further commercial use of this resource took place.

72 In accordance with s 21(4), MFish notes that a temporary closure under s 186A of the 1996 was been put in place at Pukerua Bay, within the SUR 8 stock. This provides that all methods of fishing (including hand-gathering) are prohibited other than hand–lining. Pukerua Bay is relatively small in proportion to the area covered by the SUR 8 stock, and no adjustment in the customary allowance provided is recommended by virtue of this temporary closure being in place.

73 The final allocations recommended are therefore 12 tonnes to recreational, 12 tonnes to customary, 1 tonne to fishing-related mortality, and 1 tonne as a TACC. A review of the TACC can be undertaken in the future once settlement obligations are satisfied. Accordingly, a TAC of 26 tonnes is recommended.

SUR 9

74 The revised contribution to the TAC for recreational and customary fishing is 9 tonnes each. Given the observations of NHTU about their reliance on shellfish resources including kina, and the uncertainties about the estimates, MFish considers it prudent to incorporate a catch estimate of 11 tonnes for each non-commercial sector. Mr Herbert's suggestion of 20 tonnes for each non-commercial sector cannot be substantiated on the information provided in his submission.

75 MFish agrees with Mr Herbert that the reported commercial catch from the SUR 9 stock does not necessarily reflect the availability of the resource. This was mentioned in the IPP. Similarly, MFish agrees that the Manukau Heads is an example of one of the headlands mentioned in the IPP as affording suitable habitat for kina. MFish is also aware that places like Gannet Island off the Kawhia Harbour have populations of kina. Gannet Island is part of the Kawhia-Aotea taiapure. It is well regarded by Mäori as a place where they can take kina for non-commercial purposes, and as such was not considered as a potential place where commercial harvesters would take an appreciable amount of kina for the purposes of TAC setting.

76 Conversely, the information provided by Mr Herbert on the potential scale of the resource at the Three Kings Islands and the area between Cape Maria van Diemen and North Cape is of some consequence for the purposes of TAC setting. It is likely that the resource at the Three Kings Islands is only lightly harvested, while non-commercial fishers would more readily harvest the resource between the northern capes. The scope for commercial utilisation is therefore likely to be larger than the three tonnes initially envisaged for the purposes of TAC setting.

77 Mr Herbert suggests that he sees potential for commercial fishers to take 30 tonnes of kina from SUR 9 based on his experience with similar areas he has harvested. However, other than the Three Kings Islands, some of these areas have already been considered in the IPP, either partially or fully, in terms of harvest contributions for the purposes of TAC setting. In addition, there is no documented information available about the size of the resource that could be sustainably harvested at these sites, or the potential for impacts on interdependent stocks. In addition, Mr Herbert's observations are increasingly anecdotal in nature when commenting on populations within the southern part of the stock. In this area, greater weight is given to submissions from customary interests who query whether or not there is scope for commercial activity in the southern part of the stock. However, MFish considers that an additional contribution to the TAC can be justified for the kina resource at the Three Kings Islands, and some of the resource between Cape Maria van Diemen and North Cape. A revised TACC of 10 tonnes is recommended.

78 MFish recommends that the initial estimate for other sources of fishing-related mortality (1 tonne) should be included as a contribution to the TAC. The revised TAC is therefore 33 tonnes.

79 MFish considers that the quantitative estimates contributing to the revised TAC of 33 tonnes are an appropriate basis on which to allocate the stock amongst the different interests. Specifically, an allowance of 11 tonnes for the Mäori customary non−commercial fishing interest, an allowance of 11 tonnes for recreational interests, an allowance of 1 tonne for other sources of fishing-related mortality, and therefore a TACC of 10 tonnes.

SUR 10

80 No changes are proposed to the sustainability measures for the SUR 10 stock.

Social, Cultural and Economic Factors

81 Submissions received drew attention to the value of kina for social, cultural and economic activities in supporting views on the proposals for TACs, allowances and TACCs, and other management considerations. These views have been addressed in the relevant kina stock discussions above and in the Generic Issues section.

Other Management Considerations

Submissions

82 **Peter Herbert** generally reiterates his view that the commercial sector did not support the stock boundaries used for North Island kina. The commercial sector would have preferred alignment of kina stock boundaries with those used for PAU 1 (top half of the North Island) and PAU 2 (bottom half of the North Island), or alternatively standard FMAs. In combining SUR 2B and SUR 8, he believes that the TACC proposal could be retained at 50 tonnes.

83 Mr Herbert contends that the number and size of the stock boundaries adopted has nothing to do with customary and recreational take, but it is 100% set up for the

commercial sector, with other sectors using the boundaries as markers. Further, he believes that the stock areas adopted are uneconomic, as an economic unit requires the available catch from all of FMA 1 to be a committed stakeholder. He observes that no other fishing unit in the kina fishery has lasted as long as the fishing activities that he manages, because it is uneconomic to operate in today's market as a small stakeholder. He notes the less the commitment to the fishery, the less responsible attitude to the fishery.

84 **NHTU** suggests that there should be a ban on the harvesting of kina and other particular species during their spawning season.

MFish Discussion

85 Decisions on stock boundaries for the North Island kina fishery were made late last year. Mr Herbert's views were considered along with other submitters at that time. MFish is aware that you have further responded to a letter from Mr Herbert during June 2003 on this subject.

86 In essence, commercial fishers are still able to retain the flexibility of operation required through the purchase of an appropriate mix of quota from the relevant stocks. The initial allocation of quota for particular QMAs will reflect the historical distribution of fishing activities of permit holders. In the qualifying years used for the purposes of quota allocations, more commercial fishing activity occurred in SUR 1B than SUR 1A, as is the case today. Further, the stock boundaries are of a size that can cater for the management objectives relating to all interests. There is no clear relationship between paua stocks and kina stocks that would suggest the use of the same QMAs for kina stocks.

87 There is no ability to change the stock boundaries prior to the introduction date of 1 October 2003, nor is it considered that there is justification for this to occur following introduction.

88 In response to NHTU's suggestion, MFish observes that kina are most desired by all sectors when in their spawning condition (ie, developed gonads). Provided that harvest levels are maintained at a level that a sufficient proportion of kina reproduce each year, populations will be able to be sustained without the need for a seasonal restriction on the take of this species.

Deemed Values

Stakeholder submissions

89 **SeaFIC** observes that the deemed value proposed should achieve the general objectives of encouraging fishers to cover catches with ACE, should provide a strong incentive to maintain aggregate commercial catches within the TACC, and should not unduly influence the tendering price bid for any Crown held quota. SeaFIC concludes by noting that it finds no reason to contest the proposed deemed value for kina in northern New Zealand.

90 **Peter Herbert** is pleased to see that, after the Port Price Survey, his advice has been taken heed of in terms of the proposal to set a deemed value for northern kina stocks

of 85 cents a kilogram. Mr Herbert notes that the IPP states that Licensed Fish Receivers (LFRs) were approached (as part of the MFish Port Price Survey) to provide information on the price paid for fish landed into the LFRs and the approximate tonnage received by LFRs of each species during the fishing year. He believes that this would more accurately read that the major LFR for kina approached MFish with information on these matters.

MFish Discussion

91 Mr Herbert may have misinterpreted the consultative process that was followed, and how that was outlined in the IPP. MFish did commission a Port Price Survey that involved an initiative to contact LFRs in December 2002, as stated in the IPP. In addition, an MFish official contacted Mr Herbert earlier this year to obtain his input into the determination of the port price for northern kina stocks. The salient point is that the deemed values recommended are reflective of the price paid by LFRs for kina stocks, and should provide the required incentive to cover catch with ACE.

Conclusion

92 In the IPP MFish proposed TACs and allowances for each of the seven kina stocks to be introduced into the QMS on 1 October 2003 (refer Table 1) and provided a summary of the species' biology, a characterisation of the fishery and an overview of the present regulatory framework.

93 As a result of the submissions and new information, MFish recommends changes to the TACs and allowances for all of the North Island kina stocks. Revised TACs and allowances principally arise from two considerations. The first is as a result of re-calculating recreational and customary allowances using new information on the average weight of kina found in the North Island that was provided as a result of the consultation process. This results in a reasonably significant overall reduction in the TAC and the allowances for the non-commercial sectors. The second consideration, also in response to submissions received, is the taking of a more cautious approach, particularly where historical effort has been lacking (SUR 2A and SUR 2B). The TACCs recommended for such stocks still provide a reasonable opportunity for use of the resource. The TACC recommended for SUR 9 is increased to afford a modest development opportunity in the northern part of this stock.

94 The recommended TACs and allowances are set in accordance with the requirements of ss 13 and 21 of the 1996 Act respectively. MFish notes that there is no definitive information about whether or not the proposed TACs will allow the stocks to be maintained at or above the level that can produce the MSY. Taking into account the information principles of the 1996 Act (s 10), MFish believes that the TACs, TACCs and other allowances recommended will provide for utilisation while ensuring sustainability. In accordance with s 21(4), MFish notes that no adjustment in the customary allowance is recommended by virtue of a s 186A temporary closure being in place in the SUR 2A and SUR 8 stocks. No other s 186A temporary closures are in place that are relevant to the North Island kina stocks. Similarly, there are no mätaitai reserves that affect the setting of customary allowances for North Island kina stocks.

95 In proposing the implementation of these sustainability measures, MFish notes that it is not aware of any provisions in any strategy, planning document or management plan (Resource Management Act 1991, or Conservation Act 1987) that are relevant. Similarly, MFish observes that the setting of the sustainability measures for relevant kina stocks is consistent with s 7 and s 8 of the Hauraki Gulf Marine Park Act 2000. In addition, MFish notes that there are no fisheries plans approved that would have any bearing on the setting of relevant sustainability measures for kina stocks and, similarly, no decisions have been made not to require conservation or fisheries services relevant to the North Island kina fishery.

96 After considering the nature of the statutory obligations contained in the 1996 Act, as outlined in the Statutory Consideration and Policy Guidelines section in this paper, and the available information about the stocks, MFish concludes that the proposals are consistent with the provisions of the 1996 Act.

Final Recommendations

97 MFish recommends that you:

a) **Agree** to set a TAC for SUR 1A of 172 tonnes and within that TAC set:

   i) a customary allowance of 65 tonnes;

   ii) a recreational allowance of 65 tonnes;

   iii) an allowance of 2 tonnes for fishing related mortality; and

   iv) a TACC of 40 tonnes.

b) **Agree** to set a TAC for SUR 1B of 324 tonnes and within that TAC set:

   i) a customary allowance of 90 tonnes;

   ii) a recreational allowance of 90 tonnes;

   iii) an allowance of 4 tonnes for fishing related mortality; and

   iv) a TACC of 140 tonnes.

c) **Agree** to set a TAC for SUR 2A of 204 tonnes and within that TAC set:

   i) a customary allowance of 60 tonnes;

   ii) a recreational allowance of 60 tonnes;

   iii) an allowance of 4 tonnes for fishing related mortality; and

   iv) a TACC of 80 tonnes.

d) **Agree** to set a TAC for SUR 2B of 102 tonnes and within that TAC set:

   i) a customary allowance of 35 tonnes;

   ii) a recreational allowance of 35 tonnes;

   iii) an allowance of 2 tonnes for fishing related mortality; and

   iv) a TACC of 30 tonnes.

e) **Agree** to set a TAC for SUR 8 of 26 tonnes and within that TAC set:

i) a customary allowance of 12 tonnes;

ii) a recreational allowance of 12 tonnes;

iii) an allowance of 1 tonne for fishing related mortality; and

iv) a TACC of 1 tonne.

f) **Agree** to set a TAC for SUR 9 of 33 tonnes and within that TAC set:

i) a customary allowance of 11 tonnes;

ii) a recreational allowance of 11 tonnes;

iii) an allowance of 1 tonne for fishing related mortality; and

iv) a TACC of 10 tonnes.

g) **Agree** to set a TAC for SUR 10 of 0 tonnes and within that TAC set:

i) a customary allowance of 0 tonnes;

ii) a recreational allowance of 0 tonnes;

iii) an allowance of 0 tonnes for fishing related mortality; and

iv) a TACC of 0 tonnes.

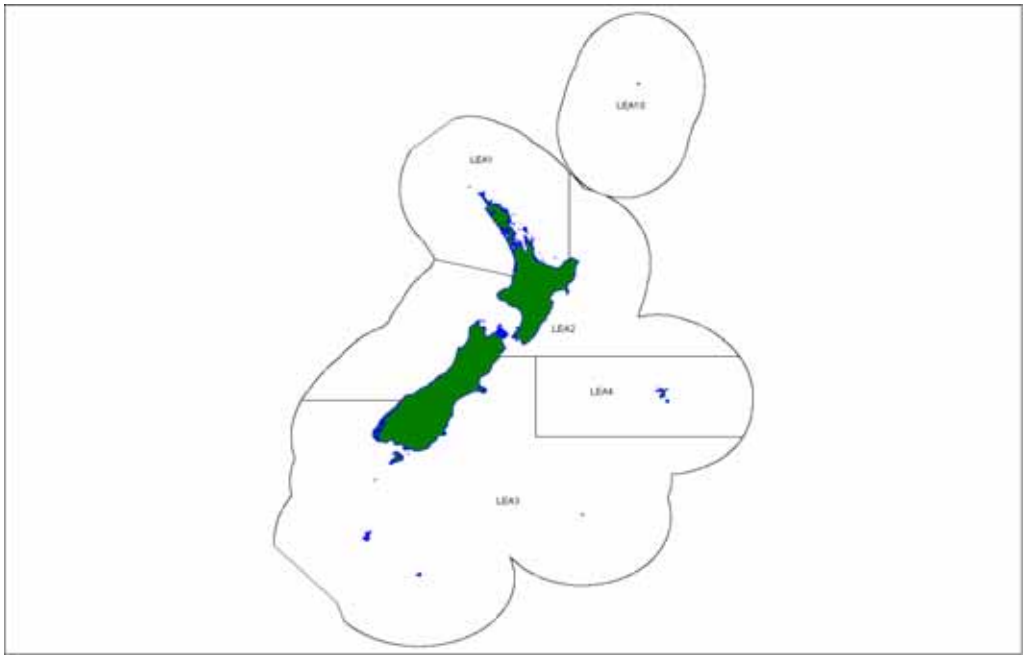
h) **Agree** to set deemed values for the above mentioned North Island kina stocks at $0.85/kg.

LEATHERJACKET (LEA) – INITIAL POSITION PAPER

Introduction into the Quota Management System (QMS)

1 The leatherjacket fisheries are to be introduced into the QMS on 1 October 2003. The QMAs for leatherjacket (LEA 1, LEA 2, LEA 3, LEA 4, LEA 10) have been determined as shown in Figure 1. LEA 1 consists of FMAs 1 and 9. LEA 2 includes FMAs 2, 7, and 8. LEA 3 includes FMAs 3, 5, and 6. LEA 4 is FMA 4. LEA 10 is FMA 10. The fishing year for leatherjacket starts on 1 October and ends on 30 September of the following year. Greenweight is to be the unit of measure for the TACC and ACE.

Figure 1 Quota Management Areas for the leatherjacket fishery



Species Information

Species Biology

2 The New Zealand leatherjacket (*Parika scaber*) is present around much of New Zealand, but is most common in the north. Trawl survey records show it to be widespread over the inner shelf north of East Cape and Cape Egmont, in the South Taranaki Bight, in Tasman and Golden Bays, Pegasus Bay and the South Canterbury Bight, extending to depths beyond 100 m, but with greatest abundance at 40–60 m. It was less commonly caught along the east coast of the North Island south of East Cape, off the northeast South Island (Cook Strait to Pegasus Bay), northwest South Island (Cape Farewell to Cape Foulwind), and around the South Otago and Southland coast. It has not been taken by trawl on the west coast south of Cape Foulwind.

3 The New Zealand species of leatherjacket also occurs in Australia, from New South Wales to the southern coast of West Australia. In the Australian southeast trawl fishery, *Parika scaber* is the main leatherjacket species caught. It was once believed that two similar species of leatherjacket occurred in New Zealand – 'rough' and 'smooth' – but these are now considered a single species with variable colouring. Kokiri is the Mäori name, but is not in common usage. 'Creamfish' is a New Zealand trade name for the processed (headed/gutted/skinned) product, rather than a name for the fish itself.

4 Leatherjacket is usually described as being most common near reefs and over rough seafloor, but also occurs over sand, and may at times be found some distance above the bottom. It is not a schooling species, but may occur in small groups. It is not a strong swimmer, and movements are likely to be localised.

5 It has been clearly shown that at least some leatherjackets spawn in seafloor nests, which are then left unguarded by the parents. However, some species in the family *Monacanthidae* are free-spawners. This range of spawning behaviour in the family, the range of courtship strategies that have been observed for leatherjacket, and the similarity of their eggs to pelagic eggs, suggests there may be some spawning of pelagic eggs perhaps by those fish away from the coastline. The relevance of this is that recruitment from seafloor nests would tend to create localised populations, while the wider dispersal of pelagic eggs and larvae could lessen the risk of localised overfishing.

6 There are no published studies of age and growth. New Zealand leatherjackets may reach a length of about 20 cm by an age of about two years. They may live for six to seven years. Overseas, maximum ages between seven and 13 years have been reported. There have been no biological studies directly relevant to the recognition of separate stocks, or to yield estimates.

Fishery characteristics

Commercial catch

7 Nationally, very small landings were first reported in 1948 (Table 1). Most of the current leatherjacket catch is taken as a bycatch, and it is very likely that leatherjacket has always been primarily a bycatch species. From only a few tonnes in the early 1960s, reported landings increased to 200–400 tonnes in the 1970s and 1980s. Landings increased further in the 1990s, and are currently around 1 000 to 1 300 tonnes. It is possible that actual catches were higher than reported prior to the 1970s, but that some catches were discarded without being reported due to low market demand in this period.

Table 1: Reported commercial landings (tonnes) of leatherjacket, 1948 to fishing year 2001–02.

Year	(t)	Year	(t)	Year	(t)	Year	(t)	Year	(t)	Year	(t)
1948	15	1958	< 1	1968	30	1978	226	1988	406	1998	387
1979	15	1959	< 1	1969	41	1979	161	1989	323	1999	561
1950	7	1960	< 1	1970	45	1980	486	1990	374	2000	1333
1951	< 1	1961	< 1	1971	61	1981	348	1991	368	2001	1054
1952	6	1962	< 1	1972	65	1982	229	1992	347	2002	1146
1953	7	1963	3	1973	77	1983	196	1993	309		
1954	7	1964	3	1974	98	1984	264	1994	289		
1955	4	1965	16	1975	76	1985	305	1995	387		
1956	< 1	1966	17	1976	216	1986	365	1996	555		
1957	< 1	1967	5	1977	213	1987	407	1997	1107		

Notes:

1. Source: Annual Reports on Fisheries to 1974, various reports 1975–86, Licensed Fish Receiver Reports (LFRRs) from fishing year 1986–87.
2. The first recorded landings were in 1948. Small landings made prior to this would have been included in the category 'mixed roundfish'. It is likely that larger catches were also made, but were probably discarded.
3. Year '2002' is fishing year 2001–02.

Catch and landing by region

8 Moderate, consistent commercial catches and landings of leatherjacket were reported from FMA 1 (the northeast coast part of LEA 1), with estimated catches being 60–70% of reported landings (Table 2)[1]. Smaller, but also reasonably consistent catches and landings were taken from FMA 3 (east coast South Island part of LEA 3), with estimated catches being 70–80% of landings. It is not known why there have been consistently low catches in FMAs 2, 5, and 9 compared to the other FMAs.

9 Large, but inconsistent estimated catches and landings were taken from FMAs 7 and 8 (western part of LEA 2), with some estimated catches being either much higher or much lower than reported landings (Table 2). Most of the catches in FMAs 7 and 8 were taken from the South Taranaki Bight, a fishing ground bisected by the boundary between these FMAs. It is probable that some catches were taken from one FMA, with the resulting landings reported from the adjacent FMA, particularly from wide-ranging vessels targeting squid, barracouta, and trevally.

Catch by method

10 Estimated commercial catches are summarised by method in Table 3. Most of the catch was taken by single bottom trawl, with some moderate bottom pair trawl catches in the early 1990s, and small catches by Danish seine. Minor catches were reported from lobster pots and cod pots. Estimated commercial catches by method and by FMA are summarised in Table 4. Single trawl catches were made in all areas; pair trawl and Danish seine catches were reported in FMA 1. The rock lobster pot and cod pot catches were reported mainly from FMA 5.

[1] Estimated catches for most bycatch species are normally less than the reported landings due to the requirements of the Catch – Effort reporting system. Specifically, fishers are only required to estimate the catch on-the-water of the five main species caught for each unit of effort. For leatherjacket caught by trawlers, it is likely that the catch was often not estimated because it would not have been one of the five main species.

Table 2: **Estimated commercial catch and reported landings (tonnes) of leatherjacket by FMA, fishing years 1989–90 to 2001–02.**

FMA	Fishing Year												
Estimated catch	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
1	69	89	118	92	136	129	106	95	98	69	78	84	133
2	2	1	1	1	4	3	2	1	3	1	1	1	2
3	34	28	62	33	24	38	23	55	48	17	14	22	32
5	5	6	18	3	2	2	6	7	6	4	3	13	6
7	77	96	40	42	17	70	177	381	53	179	734	400	599
8	60	70	28	47	19	26	131	359	64	193	337	347	317
9	3	2	6	8	8	10	8	6	4	8	5	2	2
Landed catch													
1	114	143	160	154	184	177	145	123	143	102	108	121	178
2	3	2	3	2	4	4	3	2	2	1	2	2	4
3	41	38	99	39	36	49	29	65	60	25	27	27	35
5	1	23	1	2	1	1	9	5	6	5	8	14	8
7	75	72	58	51	32	109	75	99	37	55	34	42	65
8	91	104	24	45	26	35	218	807	126	357	1100	836	884
9	0	0	0	0	4	9	7	5	8	8	7	10	7

Table 3: **Estimated commercial catch (tonnes) of leatherjacket by method, for all FMAs combined, fishing years 1989–90 to 2000–01.**

	Fishing year											
Method	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Single Trawl	225	230	220	190	154	232	420	895	265	473	1175	861
Pair Trawl	21	55	40	22	41	46	17	13	1	2	2	3
Danish seine	2	5	8	14	13	7	10	10	11	5	6	4
Lobster pot	2	2	5	2	1	1	1	1	1	1	1	1
Cod pot	< 1	< 1	1	< 1	1	1	4	3	2	2	2	1
Other	1	3	1	1	2	< 1	7	< 1	1	< 1	4	< 1

Table 4: **Estimated commercial catch (tonnes) of leatherjacket by method, and FMA, cumulative total from fishing years 1989–90 to 2000–01.**

	FMA1	FMA2	FMA3	FMA5	FMA7	FMA8	FMA9	Total
Single Trawl	925	16	420	59	2275	1652	60	5470
Pair Trawl	199	0	0	0	12	38	11	270
Danish seine	89	< 1	< 1	0	< 1	< 1	< 1	94
Lobster pot	< 1	< 1	1	14	2	1	< 1	19
Cod pot	< 1	0	1	16	< 1	< 1	0	17
Other	5	5	< 1	4	6	3	< 1	23

Note:

1. A total of 78 tonnes could not be allocated to FMAs.

Targeted catch and bycatch

11 Estimated commercial catches are reported by target species in Table 5. Only a few tonnes of leatherjacket are reported as targeted. Almost all of the targeted catch was trawled.

Table 5: **Estimated commercial catch (tonnes) of leatherjacket by target species, fishing years 1989–90 to 2000–01. After nominally targeted leatherjacket catches, bycatches of leatherjacket are listed in order of cumulative catch size over this time period.**

Target[1]	Fishing year											
	1990	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
LEA[2]	61	17	7	6	3	< 1	1	1	< 1	19	1	5
SQU	0	3	0	< 1	1	< 1	1	0	0	115	643	546
GUR	10	13	24	18	16	13	195	407	44	102	109	47
TRE	34	92	34	60	24	20	36	65	44	29	230	158
SNA	59	79	77	59	97	103	83	56	77	40	43	30
BAR	14	29	36	18	7	31	43	271	13	122	71	17
FLA	39	30	41	29	17	28	44	52	33	17	18	25
RCO	7	9	29	10	13	42	14	28	32	10	7	13
JDO	6	5	4	8	20	27	29	22	24	16	15	22
TAR	5	10	7	6	7	10	2	2	1	2	8	3

Notes:

1. Species codes: BAR, barracouta; FLA, flatfish; GUR, red gurnard; JDO, John dory; RCO, red cod; SNA, snapper; SQU, squid; TAR, tarakihi; TRE, trevally.
2. Leatherjacket (LEA) nominated as target species.

12 The largest bycatch was taken with targeted squid in recent years, and is described in more detail below. More consistent bycatches were taken with targeted gurnard, trevally, snapper, barracouta, flatfish, red cod, and John dory.

Catch by area, target species, and method

13 To describe the estimated bycatch of leatherjacket more clearly, it is necessary to consider area (fishing statistical area), target species, and, to a lesser extent, method and year together (Table 6). Two main fishing regions are important – the northeast coast (North Cape to central Bay of Plenty – included in LEA 1), and central New Zealand (Cook Strait to Cape Farewell and Cape Egmont – included in LEA 2). There is a less important southeast area (Canterbury to Southland – included in LEA 3).

14 Trawling is the main method in all these fisheries, with some Danish seining for snapper and gurnard in the northeast coast fishery. The large bycatch reported taken with squid was taken by single bottom trawl (plus a few tonnes by midwater trawl) in the South Taranaki Bight, mainly in the three fishing years 1998–99, 1999–2000, and 2000–01.

Table 6: Location and relative importance of the eight main commercial target fisheries in which leatherjacket occurs as a bycatch.

Target	Catch by region			Main statistical areas		
	Northeast	**Central**	**Southeast**	**Northeast**	**Central**	**Southeast**
SQU	Nil	Large	Nil		37, 39, 40	
GUR	Moderate	Large	Nil	3, 5, 8, 9	37, 39, 40, 41	
TRE	Moderate	Large	Nil	2, 8, 9	37, 39, 40	
SNA	Large	Small	Nil	2, 3, 5, 6, 8, 9	37, 39, 40, 41	
BAR	Small	Large	Nil	2, 9	37, 38, 39, 40	
FLA	Minor	Moderate	Moderate	3, 7	17, 37, 38	22, 24, 30
RCO	Nil	Minor	Large		38	22
JDO	Moderate	Nil	Nil	3, 5, 6, 8, 9		

Number of vessels catching and landing leatherjacket

15 The number of commercial vessels that estimated catches or reported landings of leatherjacket is outlined in Table 7. During the 1990s, about 200 vessels estimated a catch of leatherjacket in any one year, declining to about 150 in 2000; 240–270 vessels reported a landing during the 1990s, declining to about 200 in 2000. Most landings (the more reliable data) were small.

Table 7: Number of vessels making an estimated catch or reported landing of leatherjacket, fishing years 1989–90 to 2000–01.

	Fishing Year											
	1990	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Catch	192	203	214	199	185	211	198	202	188	164	153	152
Landing	237	253	267	272	269	264	258	261	243	226	198	203
Landing:												
< 1t	172	182	196	203	207	193	179	177	177	163	132	138
1t – 10t	60	64	65	67	58	63	72	68	61	55	53	55
10t – 100t	5	7	6	2	4	8	7	13	5	7	11	9
> 100 t	0	0	0	0	0	0	0	3	0	1	2	1

16 Table 7 shows that most landings were small, and typically less than one tonne. However, there were 3-4 vessels that took more than 100 tonnes per year. This information reinforces the point that most of the leatherjacket catch is taken as a bycatch. However, the vessels catching more than 100 tonnes per year suggest the possible targeting of leatherjacket. This may partially explain the recent increase in the overall leatherjacket catch. MFish is interested in any information parties might have on the possibility of targeting leatherjacket.

Recreational catch

17 The National Marine Recreational Fishing surveys in 1994, 1996 and 2000 do not provide an estimate of the non-commercial catches of leatherjacket because very few were caught. Based on this and MFish's more general understanding of the recreational fishery, MFish considers that the overall recreational catch of leatherjacket is low. It is likely that recreational fishers, especially in the northern

region, will have caught some leatherjacket by spear fishing, in craypots and set nets. Leatherjackets are seldom caught by hook and line.

Customary catch

18 There is no quantitative information available to allow the estimation of the amount of leatherjacket taken by customary Mäori fishers. Based on MFish's general understanding of the customary and recreational fishery, MFish considers that the Mäori customary catch of leatherjacket is low.

Regulatory Framework

19 There are no existing regulations that specifically relate to catch limit sustainability measures for leatherjacket. There are also no regulations that apply to the leatherjacket fishery that could be considered redundant as a result of QMS entry. There is no minimum size limit on leatherjacket for amateur and commercial fishers. There is no species-specific bag limit restriction on leatherjacket for amateur fishers. Minimum mesh size and closed areas are briefly discussed in relation to the leatherjacket fishery in the environmental section below.

Fishery Assessment

20 There has been no scientific assessment of the maximum sustainable yield, reference or current biomass of any of the leatherjacket stocks.

Associated Fisheries

21 Leatherjacket is loosely associated with many other reef-dwelling species in the reef environment, and with a variety of more open-water fish species when occurring over the flat seafloor away from reefs. Consequently, leatherjacket is vulnerable to a range of fishing methods (particularly inshore bottom trawl, Danish seine, and set net) and taken in several fisheries. As indicated earlier, leatherjacket is primarily caught as a bycatch of trawl fisheries, either the squid trawl fishery in the South Taranaki Bight, or the more general mixed trawl fishery in inshore waters.

22 The main predators of leatherjacket are not known. Leatherjacket's leathery skin and sharp moveable dorsal spine may act as a deterrent to predators, thereby decreasing the level of predation. In the reef environment, leatherjacket preys mainly on encrusting animals such as sponge and ascidian species. Other reef species eaten are hydroids, barnacles, small seaweeds, bryozoans, and jellyfish. It is not known what leatherjacket feed on in other non-reef habitats.

Environmental issues

23 Leatherjacket is primarily taken as a bycatch in trawl fisheries. The nature of trawling is that this method has an affect on the benthic community and physical structure of the substrate. Most of the trawling where leatherjacket is taken as a bycatch is likely to occur in long-established existing trawl grounds where it is likely the original benthic community will have been modified.

24 MFish does not anticipate that introducing leatherjacket into the QMS will result in new areas being trawled. This is mainly because leatherjacket is primarily taken as a bycatch of other QMS species, and also because leatherjacket is a relatively low value species. Therefore, the most likely scenario for the future is that leatherjacket will continue to be taken in areas that have already been trawled.

25 MFish is not aware of any significant environmental issues linked to the trawl fishery taking leatherjacket as a bycatch. All of the target fish species stated in Table 6 are subject to the QMS, which should therefore ensure that these species are managed sustainably. No habitats of particular significance to fisheries management are known that might be affected by trawling for leatherjacket. All known important juvenile areas for species such as snapper and trevally are protected from trawling by regulated (mainly) or voluntary closed areas.

26 Since 1995, trawlers have been required to use a minimum mesh size of 125 mm inside the 100-metre depth contour in FMAs 1 and 9. In conjunction with the closed areas, this mesh size increase has decreased the likelihood of catching significant quantities of juvenile fish. The mesh size increase may also partially account for the reduction in the leatherjacket catch in FMAs 1 and 9 since the late 1990s, because small sized fish are less likely to be caught in the larger mesh size. Leatherjacket is considered to be most abundant on the trawl grounds in waters less than 60 metres deep.

27 No known areas of special biodiversity interest are currently affected by trawlers catching leatherjacket. In the past, where there have been concerns about the impacts of trawling on biodiversity, steps have been taken to avoid, remedy, or mitigate these effects. For example, an area off Spirits Bay in the Far North was closed in the late 1990s when there was concern about the impacts of trawling and scallop dredging on the unique biodiversity in this area.

Research Current/Future

28 There has been no directed research specifically on leatherjacket in the past, and no directed research is planned in the next two to three years. The routine trawl surveys that have been conducted by the RV *Kaharoa* in inshore waters have provided length frequency data for leatherjacket. For the Hauraki Gulf and Bay of Plenty, this information has been developed into a length frequency index showing variation between years and areas. The length frequency information may be useful in the future to assess year-class variability in the fishery.

29 For the Bay of Plenty, a relative abundance index has been calculated for leatherjacket. The relative biomass estimates for the Bay of Plenty were reasonably variable ranging from 48 to 255 tonnes. This index shows neither a decreasing or increasing trend in relative abundance.

Social, cultural, economic factors

30 MFish is not aware of any significant information on social or cultural factors that could affect the TAC and TACC setting process for leatherjacket. However, economic factors could be important because leatherjacket is mainly taken as a trawl bycatch species. For example, if the leatherjacket TAC/TACC is set too low, then

there could be an unwarranted economic effect on some target fisheries because commercial fishers may not have sufficient ACE to cover the catch, particularly if the deemed value price is set too high. MFish does not anticipate the development of a leatherjacket target fishery because the species is not easily targeted and is of reasonably low value (port price is around 50 cents per kilogram).

TAC and allowances

31 Table 8 shows the TACs, non-commercial and other allowances, and TACCs that MFish has recommended for leatherjacket. As discussed below, TAC determinations were mainly based on the reported commercial landings (Table 9) by fishstock.

Table 8: Proposed (tonnes) TACs, TACCs, customary Mäori and recreational allowances, and allowance for other sources of fishing-related mortality for leatherjacket.

	LEA1 option 1	LEA1 option 2	LEA2 option 1	LEA2 option 2	LEA3 option 1	LEA3 option 2	LEA 4	LEA 10
TAC	160	201	446	1043	56	86	10	0
TACC	147	186	422	990	50	79	7	0
Customary	1	1	1	1	1	1	1	0
Recreational	5	5	2	2	2	2	1	0
Other mortality	7	9	21	50	3	4	1	0

Table 9: Reported commercial landings (tonnes) of leatherjacket by fishstock for the fishing years from 1989-90 to 2001-02. Landings for LEA 4 and LEA 10 have not been shown as these were negligible and were rounded to zero.

Fishstock	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
LEA 1	114	143	160	154	188	186	152	128	151	110	115	131	185
LEA 2	169	178	85	98	62	148	296	908	165	413	1136	880	953
LEA 3	42	61	100	41	37	50	38	70	66	30	35	41	43

Rationale for proposed TACs

32 Before setting (or varying) any sustainability measure (which includes a TAC), the Minister must consider a range of factors as outlined in the Statutory Obligations and Policy Guidelines section. MFish is not aware of any considerations in any regional policy statement, regional plan or proposed regional plan under the Resource Management Act 1991 or the Conservation Act 1987 that are relevant to setting TACs for leatherjacket. Similarly, MFish does not consider that any existing or proposed conservation or fisheries services affect the leatherjacket fishery. No fisheries plans have been approved that relate to leatherjacket.

33 Before setting or varying any sustainability measure, including a TAC, the Minister is also required to take into account any existing controls that apply to the stock concerned. The standard method/mesh restrictions apply to leatherjacket, but there is no size limit restriction or species-specific amateur bag limit restrictions. MFish considers that none of the existing fisheries management controls are directly relevant to setting TACs for leatherjacket.

34 With regard to further environmental considerations, MFish notes that trawling is the main method for catching leatherjacket. Trawling does have an effect on seafloor communities. However, leatherjacket is typically taken as a bycatch of trawling on the existing trawl grounds where the benthic communities will have been modified. As discussed earlier, MFish does not anticipate that introducing leatherjacket into the QMS will result in new areas being trawled, or in additional adverse effects on the marine environment. At the catch levels proposed, MFish considers that there are no known areas where biodiversity or habitats of significance to fisheries management are likely to be adversely affected.

35 The role of leatherjacket in the marine food chain is not that well understood. Nonetheless, leatherjacket is unlikely to be a 'keystone' species with a critical role as a predator or prey source in the marine environment. Since the proposed catch levels are an average of the catch in previous years, it is not expected that the proposed catches would cause any undue environmental impact.

36 MFish proposes that the default management option for TAC setting under s 13 of the 1996 Act applies for leatherjacket. As an alternative to setting a TAC under s 13, the 1996 Act allows TACs to be set under s 14 provided that one of the three criteria specified in s 14(8) is applicable. However, MFish does not consider that these criteria are readily applicable to leatherjacket. First, MFish considers that a maximum sustainable yield could be estimated for leatherjacket, however this would be very imprecise due to the paucity of information for this species. Second, a catch limit has not been determined as part of an international agreement. Third, leatherjacket stocks are not likely to be managed on a rotational or enhanced basis because this sort of management is mainly applicable to sedentary species.

37 Section 14A of the Act provides a further management strategy. This provision enables the Minister to set a TAC that maintains the stock at a level that ensures its long-term viability, while other inter-related stocks can be taken at TAC and TACC levels set for those stocks based on B_{MSY}. MFish does not believe that leatherjacket should be managed under this provision, which would allow the leatherjacket stocks to be managed at a level below B_{MSY}. Management below B_{MSY} is not appropriate because leatherjacket is a reef fish species and little is known about its biology and ecology.

38 No stock assessment information is available for leatherjacket. There are no estimates of reference or current biomass. Accordingly, it is not known whether the leatherjacket stocks are at, above, or below a level that can produce MSY. Therefore, it is not known whether the stocks should be rebuilt or 'fished down' to the level that can produce MSY.

39 Since leatherjacket is primarily a commercial fishery, the proposed TACs (and TACCs) outlined in Table 8 are based largely on the commercial catch, with appropriate small allowances for customary, recreational and other sources of fishing-related mortality. MFish is not aware of any sustainability concerns about leatherjacket. Therefore, a catch reduction below the average reported catch is not considered to be necessary for any of the leatherjacket stocks. For the three main leatherjacket stocks (LEA 1, LEA 2, LEA 3), MFish has proposed two TAC/TACC options for each stock that essentially relate to whether the fisheries are considered to be in a stable or developing mode.

LEA 1 and LEA 3

40 Leatherjacket has been taken as a bycatch of the inshore mixed trawl fishery for many years. The commercial catch has been relatively stable in LEA 1 and LEA 3 since the 1989-90 fishing year (Table 9). For LEA 1, the commercial landed catch ranged from 110 to 188 tonnes. For LEA 3, the commercial landed catch ranged from 30 to 100 tonnes.

41 MFish considers LEA 1 and LEA 3 to be relatively stable fisheries that may be in an under-developed state. MFish considers the reason the catch in these areas has been relatively stable is because leatherjacket is taken mainly as a bycatch of stable trawl fishing operations for fishstocks that are managed in the QMS such as snapper, trevally, and red gurnard. The leatherjacket fisheries may be in an under-developed state because there has been no target fishery for leatherjacket.

42 Under option 1, MFish proposes to base the TACs largely on the reported commercial catch since 1989-90. Catch before 1989-90 was not considered because the information from the catch reporting systems prior to 1989 is less reliable. For the period 1989-90 to 2001-02, the average commercial catch was 147 tonnes for LEA 1, and 50 tonnes for LEA 3. As shown in Table 8, these averages largely determined the proposed TACs (combined with small allowances for other types of fishing mortality as discussed below): 160 tonnes for LEA 1, and 56 tonnes for LEA 3.

43 Under option 2, MFish proposes to base the TACs mainly on the three largest reported catch years since 1989-90. This option recognises that LEA 1 and LEA 3 may be in an under-developed state. These proposed catch levels are unlikely to restrict the commercial target fisheries for other species in most years. Since leatherjacket may be a relatively short-lived species, leatherjacket abundance to some extent may be driven by year-class strength. The three high catch years in each fishery may relate to years of high leatherjacket recruitment.

44 For option 2, the average commercial catch for the three large catch years was 186 tonnes for LEA 1, and 79 tonnes for LEA 3. These averages largely determined the proposed TACs (combined with small allowances for other types of fishing mortality as discussed below): 201 tonnes for LEA 1, and 86 tonnes for LEA 3 (Table 8).

LEA 2

45 For LEA 2, the commercial catch for the first seven years was relatively stable ranging from 62 to 296 tonnes (Table 9). However, after 1995-96, the commercial catch has generally been increasing with the leatherjacket catch peaking in 1999-2000 at 1 136 tonnes. MFish does not know why the leatherjacket catch increased markedly in the late 1990s.

46 Due to this catch pattern, MFish proposes two TAC options for LEA 2. Option 1 is based on the view that LEA 2 is a stable fishery, with the commercial catch averaged from 1989-90 to 2001-02 (422 tonnes). This results in a proposed TAC of 446 tonnes for LEA 2. Option 2 is based on the view that recent catches in LEA 2 suggest that the fishery may have development potential. Under option 2, the commercial catch

was averaged over the last three fishing years (990 tonnes). This results in a proposed TAC of 1 043 tonnes for LEA 2.

47 The proposed option 1 for LEA 2 may be appropriate because there is no certainty that a TAC of 1 043 tonnes (option 2) based on the last three fishing years is sustainable. The species biology (nest spawning, early larval settlement, assumed limited migration of adults) suggests that localised overfishing could occur, particularly if there was a shift towards more targeted fishing for leatherjacket. Although leatherjacket may have a rapid growth rate, it is not known whether recruitment from a remnant local population would be adequate to replenish a fishstock, or whether slower immigration from adjacent areas would be required.

48 Conversely, the proposed option 2 for LEA 2 recognises leatherjacket may be in a developing to developed state, and that there might be a large biomass of leatherjacket available for sustainable harvest. Given that MFish is not aware of any sustainability concerns about leatherjacket, this option recognises that a high TAC for leatherjacket should not unnecessarily constrain more important commercial target fisheries. This could occur at a low TAC if a large number of fishers retained small amounts of ACE. Low ACE holdings may not be as freely traded as desirable when other fishers need to cover any unexpectedly large bycatch, eg, if the leatherjacket biomass increases more rapidly than that of the target species.

49 MFish is interested in any information that interested parties have that might explain the marked catch increase in LEA 2. Depending on the information and explanations provided in submissions, it may be appropriate for the Minister to decide on a catch level somewhere between option 1 and option 2 for LEA 2.

LEA 4

50 Leatherjacket is present at the Chatham Islands. The reported commercial catch has been negligible presumably due to there being little inshore trawl effort around the Chathams Islands. Accordingly, a low TAC of 10 tonnes is proposed for LEA 4.

LEA 10

51 MFish proposes to set the TAC for LEA 10 at zero tonnes. This is because there has been very little leatherjacket catch from the Kermadec Fishery Management Area. In addition, the 12 nautical mile marine reserve around the Kermadec Islands prevents fishing in the shallower waters where leatherjacket would be most abundant.

Other allowances and TACCs

52 MFish proposes allowances and TACCs for leatherjacket as shown in Table 8.

Recreational allowance

53 As noted earlier, there are no estimates of the recreational catch of leatherjacket from the National Marine Recreational Fishing surveys. Accordingly, MFish proposes a 5 tonne allowance for LEA 1, as recreational fishing effort is generally highest in FMA 1 and 9 due to the larger human population in this area. For LEA 2 and LEA 3,

a 2 tonne allowance is proposed for each stock. A 1 tonne allowance is proposed for LEA 4.

54 When considering the allowance for recreational interests in each of the leatherjacket fishstocks, the Minister is required to take into account any regulations that prohibit or restrict fishing in any area for which regulations have been made under s 311 of the Act. No such regulations have been made, and accordingly no adjustment to the proposed allowances needs to be considered on this basis.

Customary Mäori allowance

55 There is no known level of customary catch. The customary catch is assumed to be low, and less than the recreational catch. For LEA 1, LEA 2, LEA 3, and LEA 4, a 1 tonne allowance is proposed for each fishstock. This should cover the likely variability of the customary catch due to areas with low or high numbers of customary fishers.

56 In considering the allowance for Mäori customary non-commercial interests, the Minster is required to take into account any mätaitai reserve or s 186A closure in the relevant QMA. MFish does not consider that the allowance proposed for the customary catch will detract from the intent of any mätaitai or s 186A closure presently in place, nor will the allowance be likely to be insufficient in terms of the customary use of leatherjacket in these areas.

Allowance for other sources of mortality

57 As leatherjacket is a relatively low value species and not part of the QMS, it is likely that there would be virtually no illegal catch. However, there is likely to have been a bycatch of leatherjacket in the past that was taken in large trawl hauls, which was probably discarded and not reported. This practice might continue in the future even though it is illegal to discard QMS species. There is also likely to be an amount of leatherjacket that will have escaped through the trawl net that will be subject to delayed fishing-related mortality.

58 Accordingly, MFish proposes to allow for other sources of fishing-related mortality as an allowance of 5% of the TACC. This corresponds to the following allowances: LEA 1 option 1 (7 tonnes), LEA 1 option 2 (9 tonnes), LEA 2 option 1 (21 tonnes), LEA 2 option 2 (50 tonnes), LEA 3 option 1 (3 tonnes), LEA 3 option 2 (4 tonnes), and LEA 4 (1 tonne).

TACCs

59 The rationale for the proposed TACCs was discussed above in the TAC setting section, because the large commercial catch of leatherjacket forms the major component of the TAC. To recap, two options were proposed for the TACCs for LEA 1 and LEA 3. Option 1 was based on the average of the relatively stable commercial catches since 1989-90. Option 2 was based on the average of the three largest commercial catch years since 1989-90.

60 Two options were also proposed for the TACC for LEA 2. Option 1, a proposed TACC of 422 tonnes, is based on the average commercial catch from 1989-90.

Option 2 is based on the view that recent catches in LEA 2 suggest some scope for development. Therefore, the commercial catch was averaged over the last three fishing years. This results in a proposed TACC of 990 tonnes for LEA 2.

61 A low TACC of 7 tonnes was proposed for LEA 4 since the reported commercial catch has been negligible. Zero tonnes was proposed as the TACC for LEA 10 since the 12 nautical mile marine reserve around the Kermadec Islands prevents fishing in the shallower waters where leatherjacket would be most abundant.

Other Management Measures

62 No other regulatory or management measures are proposed for leatherjacket. Deemed values for leatherjacket will be decided as part of the generic deemed value setting RSMMC process later this year.

Conclusion

63 The leatherjacket fishstocks (LEA 1, LEA 2, LEA 3, LEA 4, and LEA 10) are to be introduced into the QMS on 1 October 2003. Leatherjacket is primarily taken as a bycatch in trawl fisheries. No stock assessment information is available for leatherjacket. There are no estimates of reference or current biomass. Accordingly, it is not known whether the leatherjacket stocks are at, above, or below a level that can produce MSY. MFish is not aware of any concerns from interested parties regarding the sustainability of the leatherjacket fishery, so catch reductions below the average catch in the past are not necessary.

64 There do not appear to be any contentious or significant environmental issues concerning the leatherjacket fishery. MFish is also unaware of any protected species that may be significantly at risk from the leatherjacket fishery. MFish considers that there are no especially important food chain issues involved with the leatherjacket fishery.

65 Since leatherjacket is primarily a commercial fishery, the proposed TACs (Table 8) are based largely on the commercial catch. Two options were proposed for LEA 1, LEA 2, and LEA 3. Under option 1, the proposed TACs for LEA 1, LEA 2 and LEA 3 are largely based on the average commercial catch for the fishing years from 1989-90 to 2001-02. Under option 2, the proposed TACs are based mainly on the average of the three largest commercial catch fishing years since 1989-90. This is to recognise some early indication of scope for development in LEA 2, and to ensure commercial target fisheries are not unnecessarily constrained. A TAC of 10 tonnes is proposed for LEA 4, and a zero TAC proposed for LEA 10.

66 MFish is not aware of any disputes between stakeholders regarding leatherjacket. No estimates of the recreational catch or customary Mäori catch are available. Since the leatherjacket catch from both sectors is thought to be negligible, allowances (ranging from 1 to 5 tonnes) were proposed for both sectors for each fishstock. There is likely to have been a small amount of other sources of fishing-related mortality for leatherjacket. Accordingly, allowances ranging from 1 to 50 tonnes were proposed for other fishing-related mortality depending on the leatherjacket fishstock.

67 There are no current or proposed research programmes specifically for leatherjacket. Leatherjacket length frequency data will continue to be collected from research trawl surveys by the RV *Kaharoa*. Information from these surveys has been used to determine a relative abundance index for leatherjacket in the Bay of Plenty. It may be possible in the future to use the survey information to derive a relative abundance index for other areas.

68 The Fisheries (Reporting) Regulations 2001 outlining the codes to be used by commercial fishers when completing their statutory catch returns will also need to be updated to reflect the new QMS reporting codes.

Preliminary recommendations

69 MFish recommends that the Minister:

a) **Agree** to set a TAC of 160 tonnes for LEA 1 (option 1) and within that TAC set:

i) A Mäori customary allowance of 1 tonne;

ii) A recreational allowance of 5 tonnes:

iii) An allowance of 7 tonnes for other fishing-related mortality, and;

iv) A TACC of 147 tonnes.

OR

Agree to set a TAC of 201 tonnes for LEA 1 (option 2) and within that TAC set:

v) A Mäori customary allowance of 1 tonne;

vi) A recreational allowance of 5 tonnes:

vii) An allowance of 9 tonnes for other fishing-related mortality, and;

viii) A TACC of 186 tonnes.

b) **Agree** to set a TAC of 446 tonnes for LEA 2 (option 1) and within that TAC set:

i) A Mäori customary allowance of 1 tonne;

ii) A recreational allowance of 2 tonnes;

iii) An allowance of 21 tonnes for other fishing-related mortality, and;

iv) A TACC of 422 tonnes.

OR

Agree to set a TAC of 1043 tonnes for LEA 2 (option 2) and within that TAC set:

v) A Mäori customary allowance of 1 tonne;

vi) A recreational allowance of 2 tonnes;

vii) An allowance of 50 tonnes for other fishing-related mortality, and;

viii) A TACC of 990 tonnes.

c) **Agree** to set a TAC of 56 tonnes for LEA 3 (option 1) and within that TAC set:

i) A Mäori customary allowance of 1 tonne;

ii) A recreational allowance of 2 tonnes;

iii) An allowance of 3 tonnes for other fishing-related mortality, and;

iv) A TACC of 50 tonnes.

OR

Agree to set a TAC of 86 tonnes for LEA 3 (option 2) and within that TAC set:

v) A Mäori customary allowance of 1 tonne;

vi) A recreational allowance of 2 tonnes;

vii) An allowance of 4 tonnes for other fishing-related mortality, and;

viii) A TACC of 79 tonnes.

d) **Agree** to set a TAC of 10 tonnes for LEA 4 and within that TAC set:

i) A Mäori customary allowance of 1 tonne;

ii) A recreational allowance of 1 tonne;

iii) An allowance of 1 tonne for other fishing-related mortality, and;

iv) A TACC of 7 tonnes.

e) **Agree** to set a TAC of 0 tonne for LEA 10 and within that TAC set:

i) A Mäori customary allowance of 0 tonne;

ii) A recreational allowance of 0 tonne;

iii) An allowance of 0 tonne for other fishing-related mortality, and;

iv) A TACC of 0 tonne.

f) **Note** that deemed values will be set in the process to review sustainability measures and other management controls for the 2003-04 year;

g) **Amend** reporting regulations to reflect new fish stock codes.

ANNEX ONE

Amendment to regulations

Consequential Amendments to the Fisheries (Reporting) Regulations 2001

Background

1 It is proposed to make consequential amendments to the Fisheries (Reporting) Regulations 2001 by amending:

a) Table 1 of Part 1 of Schedule 3 of those regulations that specifies the codes to be used when completing catch returns which must be furnished to the Chief Executive. This amendment will incorporate codes which reflect the revised QMAs for leatherjacket; and

b) Table 2 of Part 1 of Schedule 3 of those regulations defining the specific quota management areas defined by the Minister in his declaration of October 2002.

2 The Fisheries (Reporting) Regulations 2001 provide the framework for the completion and furnishing of statutory catch returns by fishers to the Chief Executive. Information contained in these returns is used for research, stock assessment, enforcement and administrative reasons (including balancing catch against ACE). With the Minister's decision to establish specific QMAs for leatherjacket stocks, it is necessary to amend these regulations to ensure that they reflect the decisions made, and to enable the effective and efficient operation of the QMS.

Problem definition

3 The obligations for fishers to report their catch and the codes used to complete these returns should reflect the Minister's decisions on QMAs for each species to be introduced into the QMS on 1 October 2003.

Preliminary consultation

4 No direct consultation on the need to revise these regulations has been undertaken as it is a consequential amendment flowing from the Minister's QMA decisions.

Options

5 As the reporting framework is contained in regulations, there is no other option than to amend these regulations.

Costs and benefits of the proposal

6 The proposed amendments clarify the obligations for commercial fishers when completing their statutory returns. Regulatory clarification means commercial fishers

are aware of their reporting obligations and complete their returns in the simplest fashion possible.

Administrative implications

7 Minor amendments to forms and explanatory notes will be required consequential to this regulatory amendment.

Conclusion

8 Consequential amendments to the Fisheries (Reporting) Regulations 2001 are necessary to fulfil the requirements to effectively manage leatherjacket stocks within a QMS environment from 1 October 2003.

LEATHERJACKET (LEA) – FINAL ADVICE

Initial Proposal

1 It was proposed in the IPP to set the TACs, TACCs and allowances for customary fishing interests, recreational interests, and other sources of fishing-related mortality for leatherjacket as outlined in Table 1 below. You have already decided that these stocks should be introduced into the QMS on 1 October 2003.

Table 1: Proposed TACs, TACCs and allowances for leatherjacket.

	LEA1 option 1	LEA1 option 2	LEA2 option 1	LEA2 option 2	LEA3 option 1	LEA3 option 2	LEA 4	LEA 10
TAC	160	201	446	1043	56	86	10	0
TACC	147	186	422	990	50	79	7	0
Customary	1	1	1	1	1	1	1	0
Recreational	5	5	2	2	2	2	1	0
Other mortality	7	9	21	50	3	4	1	0

2 This proposal is part of a package of measures regarding the introduction of leatherjacket stocks into the QMS. The only other measure for leatherjacket stocks not covered in this section is the amendment of reporting regulations to provide codes to be used by fishers when completing their statutory reporting forms. That amendment has been addressed in a separate advice paper.

Submissions

3 Four submissions were received on the above leatherjacket proposals. They were from **Sanford Ltd** (Sanford), **Golden Bay / Motueka Fisherman's Association** (GBMFA), **Te Ohu Kai Moana** (TOKM), and the **New Zealand Seafood Industry Council Ltd** (SeaFIC). The specific submissions on the proposals for leatherjacket are summarised and addressed under the following headings.

Biological and Fishery Information

4 The submissions received did not raise any issues concerning the biological or fishery information for leatherjacket that was provided in the IPP.

TACs, allowances and TACC setting considerations

Submissions

5 Sanford supports the introduction of leatherjacket into the QMS and does not consider that there are any sustainability concerns for any of the leatherjacket stocks. Sanford considers that the highest recorded catch estimate should be used for setting the TACCs for each stock. The submission suggests that the reporting practices of some

operators has created an under-estimate of the actual catch landings, such that the highest recorded catch estimates are a conservative starting point for setting TACCs.

6 GBMFA notes that leatherjacket is taken as a bycatch of single trawling, and understands that leatherjacket has always been primarily a bycatch species. The submission suggests that there will be economic problems for commercial fishers if the TACs/TACCs are set too low because leatherjacket is a bycatch fishery. GBMFA supports the proposed option 2 for LEA 2 with the TAC set at 1043 tonnes and the TACC set at 990 tonnes.

7 TOKM supports the three higher TACs (option 2) for leatherjacket as proposed in the IPP. TOKM considers the most important factor in setting sustainability measures for leatherjacket is to ensure that the bycatch nature of the species is recognised, and therefore the management regime should not act as an inhibitor to access for more preferred and more valuable species. TOKM notes that there is a lack of useful stock abundance data for leatherjacket. TOKM also considers that its earlier submission on the proposal to put leatherjacket into the QMS should also be considered as part of this consultation process because the points it raised were relevant to these proposals. TOKM's earlier submission provided more comprehensive information on the bycatch nature of the leatherjacket fishery, and the lack of any information about a sustainability concern for leatherjacket.

8 SeaFIC received considerable feedback from industry participants over concerns about the potential economic impact of unnecessarily conservative TACCs for leatherjacket that might constrain target fisheries. As part of this concern, SeaFIC notes that:

- Pre-QMS catch data is likely to under-estimate actual catch landing due to reporting practices;
- Catch-effort in the target fisheries is unlikely to increase – therefore, there is no reason to expect any significant increases in leatherjacket landings due to changes in effort;
- QMS entry will result in more accurate catch landing data; and
- There are no known sustainability concerns for any of the leatherjacket stocks.

9 SeaFIC maintains that due to incomplete catch data, TACCs based on these data are likely to be developed from a conservative starting point. In the absence of a target fishery and any sustainability concerns, there appears to be no rationale for setting overly conservative TACs/TACCs. It is SeaFIC's view that conservative TACs/TACCs would unnecessarily limit the utilisation of the target fisheries. SeaFIC recommends that the highest recorded catch estimates be used for setting the TACCs for each leatherjacket stock.

MFish Discussion

10 Before setting any TAC, you are required by s 11 and s 13 of the 1996 Act to take into account the statutory considerations set out in the IPP. None of the submissions raised any issues that are especially relevant or applicable to MFish's discussion of the statutory considerations in the IPP.

11 It was noted in the IPP that there is no stock assessment information available for leatherjacket. There are therefore no estimates of reference or current biomass. Accordingly, there is no scientific information to guide you concerning the s 13 considerations about setting the TAC in relation to MSY – ie, whether or not the leatherjacket stocks are at, above, or below a level that can produce the MSY.

12 Nevertheless, MFish considers that the following factors are the key considerations for leatherjacket to address the s 13 requirements. MFish is not aware of any sustainability concerns about leatherjacket. Leatherjacket is caught mainly as a bycatch in well-established target fisheries for QMS species such as snapper, trevally, and red gurnard. These considerations were more fully discussed in the IPP. Submissions from stakeholders, and the earlier submission from TOKM, generally supported these key considerations for leatherjacket. No parties disputed these factors in submissions or at any stage during the consultative process.

13 Based on the above considerations, MFish considers there is therefore little likelihood of the leatherjacket catch increasing significantly or new areas being fished for leatherjacket. Accordingly, on the balance of probabilities, MFish considers that the leatherjacket fishery is likely to be at or above the level that would produce the MSY. Since there are no known sustainability concerns, the TACs for leatherjacket should provide for utilisation and not unnecessarily restrict established target fisheries that are being utilised sustainably.

14 MFish notes that no s 11(2) or s 11(2A) matters were raised in submissions or are relevant to setting the TACs/TACCs for leatherjacket as set out in the IPP.

15 MFish notes that Sanford and SeaFIC considered that the TACs/TACCs should not be overly conservative and should be set based on the highest recorded catch estimate for leatherjacket. Their rationale is that there are no known sustainability risks to leatherjacket stocks, and that reported catch/landings are likely to be below the actual catches that were taken over time, resulting in landings data providing conservative estimates of yield.

16 In the IPP, MFish proposed two options for setting TACs/TACCs. Option 1 was based on the average of the relatively stable commercial catches since 1989-90. Option 2 was based on the average of the three highest reported annual catches. Generally, MFish does not consider it appropriate to base TACs on the catch from a single year that may or may not be representative. Averaging the catch over a period of time is also more likely to generally provide a better indication of a sustainable catch level.

17 Nonetheless, given the knowledge that reported landings for leatherjacket are likely to have been below the actual catch, MFish agrees with submissions that the highest reported landings represent a reasonable basis for setting TACs/TACCs. Additional considerations are that there are no known sustainability concerns for leatherjacket stocks, the species is taken mostly as a bycatch of sustainably harvested and more valuable species, and that targeting of leatherjacket and expansion of effort into new areas is unlikely. Accordingly, MFish recommends that the TACs/TACCs for LEA 1, LEA 2, and LEA 3 be set to reflect the largest reported commercial landings between 1990 and 2002 (as shown by Table 9 in the IPP).

18 In the IPP, MFish proposed to allow for other sources of fishing-related mortality as an allowance of 5% of the TACC. As explained in the IPP, the rationale for the 5% threshold is that it is possible that an ongoing amount of leatherjacket will be discarded (which will be illegal) in the future. It is also likely in the future that there will be an amount of leatherjacket that will escape through the trawl net and suffer delayed fishing-related mortality. Given that MFish is recommending larger TACCs, slightly larger allowances have been recommended (than proposed in the IPP) for other sources of fishing-related mortality, still at a level of 5% of the recommended TACC.

19 The benefits of recommending higher TACCs are that the utilisation of the valuable target fisheries would not be unnecessarily constrained. Monitoring of the improved reported landings data would enable any emerging trends in the catch of leatherjacket to be detected and appropriate management action taken as required. The revised TACs and TACCs recommended by MFish are as follows:

- LEA 1 - TAC of 203 tonnes, TACC of 188 tonnes;
- LEA 2 - TAC of 1 196 tonnes, TACC of 1 136 tonnes; and
- LEA 3 - TAC of 108 tonnes, TACC of 100 tonnes.

20 MFish recommends that the TACs and TACCs for LEA 4 (10 and 7 tonnes respectively) and LEA 10 (0 tonnes) be implemented as proposed in the IPP.

21 No comments were received in submissions on any of the proposed allowances for non-commercial fishing and other sources of fishing-related mortality for leatherjacket. Accordingly, MFish recommends that the allowances for LEA 1, LEA 2, and LEA 3 be implemented as proposed for option 2 in the IPP. MFish recommends that the proposed allowances for LEA 4 and LEA 10 in the IPP be implemented.

Environmental Considerations

22 The submissions received did not raise any issues concerning the environmental considerations that were outlined in the IPP for leatherjacket.

Other Management Considerations

23 The submissions received did not raise any issues concerning other management considerations that were discussed in the IPP for leatherjacket.

Deemed values

Submissions

24 GBMFA supports the proposal that deemed values for leatherjacket should be set at 60% of the port price as leatherjacket is not regarded or included under the categories of ‘High Value Single Species’ and ‘All Other Fishstocks’.

25 SeaFIC considers that the proposed deemed values for leatherjacket may unfairly transfer wealth to the Crown from quota holders in other fisheries, and may also lead to unnecessarily constraining associated fisheries. In contrast, SeaFIC considers that setting low initial deemed values for the incidental catch species should allow the tender process for ACE (once the TACCs are set) to identify true expectations of the net worth of leatherjacket.

26 SeaFIC submits that if it becomes clear after the introduction of leatherjacket into the QMS that a higher deemed value is required to constrain catches to sustainable levels, then higher deemed values could be considered. SeaFIC considers it unlikely that this will present a problem as catches of leatherjacket have been unconstrained previously.

27 SeaFIC considers that if catches of leatherjacket do substantially exceed the TACCs, raising the deemed values may still not be the appropriate reaction as there is little information on which to set the TACCs for leatherjacket. The costs and benefits of raising a TACC, versus raising the deemed value to constrain catch, should be explored. SeaFIC considers that as the incidental catch of leatherjacket is of low value relative to related target species and because leatherjacket's 'viability' is not threatened, it may be preferable to allow leatherjacket to be fished down as allowed under s 14 of the Act.

MFish Discussion

28 It was proposed in the IPP to set the annual deemed value for leatherjacket for all stocks at $0.23/kg. This was based on MFish's policy that the annual deemed value for 'Low Knowledge Fishstocks' (leatherjacket is classified in this category) should be set at 60% of the average port price ($0.39/kg for leatherjacket) based on MFish's annual market survey in 2002. Monitoring the behaviour of the commercial fishery in relation to the balancing regime will provide the necessary information for reviewing management measures in the medium term.

29 MFish did not propose a differential deemed value or overfishing threshold for leatherjacket as MFish's policy is to not determine these parameters for any low knowledge stocks.

30 MFish considers that the proposed deemed value for leatherjacket is appropriate as an initial measure, particularly if the TACs and TACCs are set at the levels of the highest reported commercial landings. MFish considers that the recommended level of deemed values for leatherjacket will provide the required incentive to cover catch with ACE, while balancing the incentive to discard catch that can result from deemed values that are too high. If after a period of time, it is apparent that the commercial bycatch of leatherjacket catch is constraining target fisheries and that deemed values are unnecessarily penalising fishers, then it would be appropriate to review management arrangements for the stocks on the basis of the best available information. Better information about the market value of leatherjacket ACE would also be available after a period of management within the QMS, and would assist in refining the management arrangements for leatherjacket. MFish would not consider using the s 14 provisions for leatherjacket before careful consideration of that section's requirements.

Conclusion

31 The leatherjacket fishstocks (LEA 1, LEA 2, LEA 3, LEA 4, and LEA 10) are to be introduced into the QMS on 1 October 2003. Leatherjacket is primarily taken as a bycatch in trawl fisheries targeting other more valuable species. No stock assessment information is available for leatherjacket. There are no estimates of reference or current biomass in relation to the MSY. Accordingly, it is not known whether the leatherjacket stocks are at, above, or below a level that can produce MSY. However, the best available information suggests that the respective stocks are likely to be at or above the level that would support the MSY. MFish is not aware of any concerns from interested parties regarding the sustainability of the leatherjacket fishery.

32 There do not appear to be any contentious or significant environmental issues concerning the leatherjacket fishery. MFish is also not aware of any protected species that may be significantly at risk from the leatherjacket fishery. MFish considers that there are no important food chain issues involved with the leatherjacket fishery.

33 Since leatherjacket is primarily a commercial fishery, the proposed TACs were based mainly on the commercial catch. Two options were proposed for LEA 1, LEA 2, and LEA 3. Under option 1, the proposed TACs for LEA 1, LEA 2, and LEA 3 were largely based on the average commercial landed catch for the fishing years from 1989-90 to 2001-02. Under option 2, the proposed TACs were based mainly on the average of the three largest commercial landed catch fishing years since 1989-90. However, it is likely that the reported commercial landings of leatherjacket underestimate the actual catches, and provide a conservative basis for TAC/TACC setting.

34 Given that there are no known sustainability concerns about leatherjacket, it is important to provide for utilisation of the leatherjacket resource. Established commercial target fisheries for other species should also not be unnecessarily constrained by the leatherjacket TACs/TACCs.

35 Based on these considerations, MFish recommends that the TACs for LEA 1 (203 tonnes (TACC - 188 tonnes)), LEA 2 (1196 tonnes (TACC - 1136 tonnes)), and LEA 3 (108 tonnes (TACC - 100 tonnes)) be based mainly upon the largest reported commercial landings (refer Table 9 in the IPP) between 1990 and 2002. MFish recommends that the initially proposed TAC (10 tonnes) and TACC (7 tonnes) be implemented for LEA 4. MFish recommends that the initially proposed zero TAC be implemented for LEA 10.

36 No estimates of the recreational catch or customary Mäori catch are available. Since the leatherjacket catch from both sectors is thought to be negligible, allowances (ranging from 1 to 5 tonnes) are recommended for both sectors for each stock. There is likely to have been a small amount of other sources of fishing-related mortality for leatherjacket. Accordingly, allowances ranging from 1 to 57 tonnes are recommended for other fishing-related mortality depending on the leatherjacket fishstock.

Final Recommendations

37 MFish recommends that you:

a) **Agree** to set a TAC for LEA 1 of 203 tonnes, and within that TAC set:
   i) a Mäori customary allowance of 1 tonne;
   ii) a recreational allowance of 5 tonnes;
   iii) an allowance of 9 tonnes for other fishing-related mortality; and
   iv) a TACC of 188 tonnes.

b) **Agree** to set a TAC of 1196 tonnes for LEA 2, and within that TAC set:
   i) a Mäori customary allowance of 1 tonne;
   ii) a recreational allowance of 2 tonnes;
   iii) an allowance of 57 tonnes for other fishing-related mortality; and
   iv) a TACC of 1136 tonnes.

c) **Agree** to set a TAC of 108 tonnes for LEA 3, and within that TAC set:
   i) a Mäori customary allowance of 1 tonne;
   ii) a recreational allowance of 2 tonnes;
   iii) an allowance of 5 tonnes for other fishing-related mortality; and
   iv) a TACC of 100 tonnes.

d) **Agree** to set a TAC of 10 tonnes for LEA 4, and within that TAC set:
   i) a Mäori customary allowance of 1 tonne;
   ii) a recreational allowance of 1 tonne;
   iii) an allowance of 1 tonne for other fishing-related mortality; and
   iv) a TACC of 7 tonnes.

e) **Agree** to set a TAC of 0 tonne for LEA 10, and within that TAC set:
   i) a Mäori customary allowance of 0 tonne;
   ii) a recreational allowance of 0 tonne;
   iii) an allowance of 0 tonne for other fishing-related mortality; and
   iv) a TACC of 0 tonne.

f) **Agree** to set the annual deemed value for all leatherjacket stocks at $0.23/kg.

ROUGH SKATE AND SMOOTH SKATE (RSK, SSK) – INITIAL POSITION PAPER

Initial Position Paper

1 The Initial Position Paper (IPP) on the setting of sustainability measures for stocks being introduced into the QMS on 1 October 2003 has been developed for the purpose of consultation as required by s 12 of the Fisheries Act 1996 (the Act).

2 This section of the IPP should be read in conjunction with the statutory obligations section of the IPP, which sets out what the Minister of Fisheries is required to consider when making decisions in respect to the setting of sustainability measures under s 11 of the 1996 Act.

Introduction to the Quota Management System (QMS)

3 Rough skate and smooth skate will be introduced into the QMS on 1 October 2003 as separate species within the QMS as there are believed to be sufficient differences in terms of their biology and fisheries characteristics to warrant different sustainability settings.

4 The fishing year for rough skate and smooth skate will be from 1 October to 30 September. The TACC and ACE will be expressed as greenweight.

5 Quota management areas (QMAs) for rough skate and smooth skate will be RSK 1 and SSK 1 (FMAs 1 and 2), RSK 3 and SSK 3 (FMAs 3, 4, 5 and 6), RSK 7 and SSK 7 (FMA 7), RSK 8 and SSK 8 (FMAs 8 and 9), and RSK 10 and SSK 10 (FMA 10).

6 Greater than 50% of catch of rough skate and smooth skate was reported during the qualifying fishing years (1990-91 and 1991-92) for provisional catch history under a general SKA code. This is to be apportioned under the rules based on the average proportion of RSK and SSK caught in trawl surveys as outlined in Table 1, apart from RSK 3 and SSK 3. The apportionment of inshore catch of rough skate and smooth skate in RSK 3 and SSK 3 has been modified to more accurately reflect the proportions of rough skate and smooth skate caught within FMAs 3 and 5.

7 It is proposed to set TACs as well as TACCs and allowances for rough skate and smooth skate stocks before the start of the fishing year on 1 October 2003. Further, it is proposed for rough skate and smooth skate stocks to set deemed value rates, consider inclusion on the sixth schedule of the Act to provide for return to the sea, make consequential amendments to revoke the CCL for skates and rays in FMA 3, and to amend the reporting regulations.

Table 1: **Ratios based on trawl survey information proposed to attribute landings reported under the SKA code during the years 1990-91 and 1991-92.**

FMA	RSK	SSK
1	0.75	0.25
2	0.75	0.25
3	0.60	0.40[1]
4	0.01	0.99
5	0.67	0.33[2]
6	0.25	0.75
7	0.40	0.60
8	0.50	0.50
9	0.50	0.50
10	0	0

Species Information

Species Biology

8 Rough skate (*Dipturus nasutus*) and smooth skate (*Dipturus innominatus*) are large flattened fishes that spend most of their time on the seabed where they mainly feed on benthic invertebrates and small fish.

9 Rough skate and smooth skate exist throughout New Zealand waters apart from around the Kermadec Islands, although rough skate is rare on the Chatham Rise. Immature and mature fish have similar distributions. Both species have wide depth ranges from near the surface to over 800 m. Rough skate and smooth skate are the only species of skates found in water depths of less than 200 m, where most of the inshore commercial catch is taken.

10 Little is known about the reproductive biology of rough skate or smooth skate. Both species reproduce by laying two yolky eggs enclosed in leathery cases on the seabed. Rough skates are known to lay their eggs in spring–summer. The number of eggs laid annually by females of both species is unknown. A single embryo develops inside each egg case and the young hatch at about 10–15 cm pelvic length (body length excluding the tail).

11 Smooth skate grow to a larger size than rough skate and probably live longer. There are no apparent differences in growth rate between the sexes of both species. The greatest known age of a smooth skate is 24 years for a 133 cm pelvic length (PL) female. The greatest reported age of rough skate is nine years for a 70 cm PL female. Rough skate grow to at least 79 cm PL, and females grow to be larger than males.

12 Rough skate reach 50% maturity at about 52 cm PL and four years of age for males and 59 cm PL and six years of age for females. Smooth skate reach 50% maturity at about 93 cm PL and eight years of age and 112 cm PL and 13 years of age for males and females, respectively.

[1] This ratio will not apply to fishers in FMA 3 who have requested ratios that reflect the greater inshore abundance of rough skate.
[2] This ratio will not apply to fishers in FMA 5 who have requested ratios that reflect the greater inshore abundance of rough skate.

Fisheries Characteristics

Commercial Catch

13 Determining separate catch and landings of rough skate and smooth skate is problematical as reporting of skate by fishers and processors has been inconsistent over the years. This inconsistency has resulted from difficulties associated with identifying these species, especially after skates have been processed to the 'wings' state, and confusion about which code was supposed to be used.

14 Three species codes have been used by fishers and licensed fish receivers (LFRs) to report rough skate and smooth skate catch and landings: RSK (rough skate), SSK (smooth skate) and a general code SKA for unspecified skates. SKA is believed to consist almost entirely of rough and smooth skates, though small quantities of Arctic skate (*Amblyraja hyperborea*) may be included. Generally, the percentage of New Zealand landings of rough skate and smooth skate coded as unspecified SKA has declined over the years from around 100% in 1986–87 to around 40% over the last five fishing years (refer to Table 2).

15 Before 1979, reported landings of skates in New Zealand were less than 50 tonnes per year as skates were usually discarded. After 1979, New Zealand landings of rough skate and smooth skate, combined, increased steadily to about 1 000 tonnes in 1986–87 and 3 000 tonnes in 1992–93 as export markets developed (Table 2). Subsequently, annual landings have varied between 2 500 tonnes and 3 000 tonnes.

Table 2: **Reported New Zealand landings of rough and smooth skate by species code. Data before 1989–90 from LFRRs. Data from 1989–90 onwards from landed section of CELRs.**

Fishing Year	Landings (t)				Percentage (%)		
	SKA	RSK	SSK	Total	SKA	RSK	SSK
1986–87	1014		5	1019	99.5	0.0	0.5
1987–88	1446		278	1725	83.9	0.0	16.1
1988–89	1151	3	359	1513	76.1	0.2	23.7
1989–90	932	207	389	1528	61.0	13.6	25.4
1990–91	927	272	473	1671	55.5	16.3	28.3
1991–92	1513	386	725	2623	57.7	14.7	27.6
1992–93	1989	391	910	3290	60.4	11.9	27.7
1993–94	1525	433	939	2898	52.6	14.9	32.4
1994–95	1350	418	1097	2865	47.1	14.6	38.3
1995–96	1276	331	1159	2767	46.1	12.0	41.9
1996–97	1364	361	807	2532	53.8	14.3	31.9
1997–98	1095	575	1018	2688	40.7	21.4	37.9
1998–99	1089	669	1132	2890	37.7	23.1	39.2
1999–00	1195	784	976	2954	40.4	26.5	33.0
2000–01	1332	652	979	2962	45.0	22.0	33.0
2001–02	1138	767	1020	2925	38.9	26.2	34.9

16 Most of the rough skate and smooth skate landings (58%) have come from the east coast of the South Island (FMA 3) in recent fishing years (1991–92 to 2001–01- refer to Table 3). Pegasus Bay (statistical area 020) and Canterbury Bight (statistical area 022) produce most of the catch in FMA 3 according to estimated catch data provided by fishers. Over the four-year period from the 1997–98 fishing year estimated catches

have averaged 267 tonnes (range 189-333) and 305 tonnes (range 271-335) in 020 and 022, respectively. Substantial landings have also come from the southern and western South Island (FMAs 5 and 7, respectively), with smaller quantities coming from the Chatham Rise and Campbell Plateau (FMAs 4 and 6, respectively). Landings have been relatively low around the North Island.

Table 3: **Skate fishing year landings (SKA, RSK and SSK combined) in tonnes by FMA for the ten-year period 1991–92 to 2000–01, and the 2001-02 fishing year. Data from CELR (landed) and CLR. ET, outside New Zealand EEZ:**

	Fishing year												
FMA	**91-92**	**92-93**	**93-94**	**94-95**	**95-96**	**96-97**	**97-98**	**98-99**	**99-00**	**00-01**	**Mean 91-92 to 00-01**	**01-02**	**% 91-92 to 00-01**
1	15	18	18	21	47	16	32	16	23	41	25	93	**1**
2	15	18	40	49	47	52	48	59	77	84	49	120	**2**
3	1560	1812	1795	1651	1422	1404	1572	1672	1772	1748	1641	1369	**58**
4	71	76	169	111	114	85	159	124	97	113	112	185	**4**
5	199	651	297	362	377	250	208	342	318	316	332	419	**12**
6	227	188	160	108	189	110	299	236	193	178	189	175	**7**
7	517	494	396	517	527	548	310	360	364	431	446	431	**16**
8	19	33	23	37	18	29	30	22	25	18	25	28	**1**
9	0	0	0	6	2	7	10	10	18	21	7	12	**0**
10	0	0	0	0	0	0	0	0	0	0	0	0	**0**
ET	0	0	0	0	0	0	5	36	64	0	10	3	**0**
Not stated	0	0	0	1	24	31	14	12	5	13	10	91	**0**
Total	**2623**	**3290**	**2898**	**2865**	**2767**	**2532**	**2688**	**2890**	**2954**	**2962**		**2926**	**100**

17 The proportions of each species code reported by FMA in more recent fishing years (1997–98 to 2000–01) are shown in Table 4. The proportions of SKA, RSK and SSK in the more recent landings vary markedly among FMAs. Furthermore, the ratio of RSK to SSK also varies markedly. It is not known if these variations are real or a result of incorrect or incomplete species identification.

Table 4: **Percentage of rough skate and smooth skate (SKA, RSK and SSK) landings by FMA for the four-year period of fishing years from 1997–98 to 2000–01. Data for QMAs shown in bold. Data from CELR (landed) and CLR.**

FMA	SKA	RSK	SSK
1	79.6	8.4	12.1
2	61.7	34.4	3.9
1 and 2	**66.9**	**26.8**	**6.3**
3	37.0	30.6	32.4
4	63.3	10.8	25.9
5	27.4	15.0	57.6
6	20.3	9.0	70.6
3, 4, 5 and 6	**35.6**	**25.5**	**39.0**
7	**62.9**	**10.6**	**26.5**
8	52.8	15.0	32.1
9	77.4	1.3	21.3
8 and 9	**62.2**	**9.8**	**28.0**

18 The skate fishery is mainly a bycatch fishery. Recent catch data indicates that more than half of the catch of both species, combined, is taken by the flatfish and red cod trawl fisheries, with substantial amounts also being taken by the ling longline fishery and the hoki trawl fishery (Table 5). Other minor target species not included in Table 5 account for 6% of the skate catch.

Table 5: **Percentage of estimated catch of rough skate and smooth skate (RSK, SSK and SKA combined) taken as bycatch of various target species in the four-year period of fishing years from 1997–98 to 2000–01. Data from CELR (estimated) and TCEPR.**

Target	% 1997–98	% 1998–99	% 1999–00	% 2000–01	% Total
FLA	27.5	33.9	32.5	28.5	**31**
RCO	28.7	17.0	19.7	25.1	**22**
LIN	18.6	14.4	14.9	12.5	**15**
HOK	10.6	9.7	11.5	9.7	**10**
SQU	2.6	7.0	3.9	5.6	**5**
BAR	3.0	4.5	5.7	5.1	**5**
STA	1.1	3.1	3.1	3.8	**3**
TAR	2.0	2.7	1.9	2.2	**2**
GUR	0.6	0.8	0.8	1.9	**1**

Recreational and Customary Catch

19 Recreational fishing surveys indicate that recreational fishers rarely catch skates. During the 1996 National Recreational Fishing Survey, recreational fishers only recorded 24 skates taken over the whole of New Zealand. A further National Recreational Fishing Survey was conducted in 2000 but results from this survey are not available. Recreational fishers occasionally catch skates when lining, particularly for red cod, kahawai, small sharks and blue cod. Recreational fishers tend to return rough skate and smooth skate to the sea if they catch these species.

20 There is no information on customary Mäori fisheries for skate species. This may be, in part, due to the special significance skates have to Mäori in some areas of the South Island. In these areas, skates and rays (whairepo) are considered to be kaitiaki and are not fished ie, fishing for skates and rays is prohibited in the Rapaki Mätaitai Reserve in Lyttelton Harbour.

Regulatory Framework

21 Rough skate and smooth skate are currently managed as non-QMS species. The process for revocation of commercial fishing permits in the 1992-93 fishing year (see s 63(13) of the Fisheries Act 1983) withdrew authorisations to target skate from permit holders who had not used their fishing permit for these species. Since then, the moratorium on the issue of further fishing permits for non-QMS species, with the exception of tuna and seaweed species (now s 93 of the Act) has prevented any new fishers from obtaining fishing permits to commercially target rough skate or smooth skate.

22 There are few commercial fishers who have fishing permits allowing them to target skates. Two fishing permit holders are able to target skate in SKA 3 and SKA 7 and one in SKA 8.

23 Since the early 1990s, a regulated CCL has been in place for skates and rays in QMA 3. In this area, within any fishing year, the Chief Executive may, after publicly notifying his intentions, prohibit commercial fishers from fishing skates and rays when 900 tonnes has been taken. The skate and ray fishery in QMA 3 was closed late in the 2001-02 fishing year when information was available that the CCL had been exceeded. Because the catch limit for the skate and ray fishery in QMA 3 has not been reviewed since 1991, and utilisation of the more valuable fisheries may be unreasonably restricted once the CCL has been taken, MFish is reviewing this CCL with a view to revoking the CCL for this fishing year before rough skate and smooth skate enter the QMS.

24 The recreational fisheries for rough skate and smooth skate in FMAs 3, 5 and 6 are principally managed by a daily bag limit of five skates or rays. In the remainder of New Zealand, there are no daily bag limits for rough skate or smooth skate. An indirect control on the bycatch of skates in the recreational line fisheries is that fishers can only use one line with a maximum of 25 hooks.

25 Customary fishing for rough skate and smooth skate needs to be authorised by tangata tiaki/kaitiaki if these have been appointed under the Fisheries (Kaimoana Customary Fishing) Regulations 1998 or the Fisheries (South Island Customary Fishing) Regulations 1999. Tangata tiaki/kaitiaki have been appointed for the South Island, apart from the North Canterbury and the Nelson/Marlborough areas. A number of tangata tiaki/kaitiaki have been appointed in the North Island. For areas where there are no tangata tiaki, customary take of rough skate and smooth skate for hui and tangi is managed under regulation 27 of the Fisheries (Amateur Fishing) Regulations 1986.

Fishery Assessment

26 There have been no stock assessments of rough skate or smooth skate. The fishery assessment plenary has concluded that it is not known if the CCL for skates (rough skate and smooth skate combined) in FMA 3 or recent catch levels are sustainable or whether they are at levels that will allow skate stocks in FMA 3 to move towards a size that will support the maximum sustainable yield (MSY). For all other skate stocks, the plenary has concluded that recent catch levels are probably sustainable and will probably allow these stocks to move towards a size that will support the MSY.

27 Relative biomass estimates have been derived for rough and smooth skate from a number of trawl survey series (Table 6). Estimates of relative biomass from trawl surveys suffer from problems (species mis-identification before 1996, short time series, potential confounding by variations in catchability, high CVs, and low catches) that limit their utility for tracking relative abundance.

Table 6: **Relative biomass estimates (tonnes) of rough and smooth skates estimated from trawl surveys. Surveys before 1996 may have misidentified some skates.**

CV = coefficient of variation.

		Rough skate		Smooth skate	
Voyage	**Year**	**Biomass**	**c.v. %**	**Biomass**	**c.v. %**
		FMA 2 (East Coast North Island)			
KAH9402	1994	189	12	144	38
KAH9502	1995	52	20	20	59
KAH9602	1996	309	24	85	36
		FMA 3 winter (East coast South Island)			
KAH9205	1992	224	24	605	18
KAH9306	1993	335	21	658	25
KAH9406	1994	517	20	306	25
KAH9606	1996	177	19	385	24
		FMA 3 summer (East coast South Island)			
KAH9618	1996–97	1 336	15	721	32
KAH9704	1997–98	1 082	13	485	21
KAH9809	1998–99	1 175	10	450	26
KAH9917	1999–00	329	23	369	30
KAH0014	2000–01	222	34	248	33
		FMA s 3&4 (Chatham Rise)			
TAN9212	1993	55	83	1 071	18
TAN9401	1994	220	44	958	23
TAN9501	1995	76	43	769	31
TAN9601	1996	11	100	1 511	30
TAN9701	1997	12	58	1 932	22
TAN9801	1998	10	100	1 425	26
TAN9901	1999	34	60	1 738	20
TAN0001	2000	0	–	1 369	23
TAN0101	2001	72	59	2 321	19
TAN0201	2002	37	65	2 111	17
		FMA 5 (Stewart–Snares shelf)			
TAN9301	1993	592	20	528	20
TAN9402	1994	1 064	15	342	21
TAN9502	1995	801	7	335	19
TAN9604	1996	1 055	11	504	29
		FMAs 5&6 summer(Stewart–Snares Shelf and Campbell Plateau)*			
TAN9105	1991	37	72	382	23
TAN9211	1992	52	69	113	47
TAN9310	1993	132	57	115	44
TAN0012	2000	201	56	434	66
TAN0018	2001	158	51	636	43
		FMAs 5&6 autumn (Stewart–Snares Shelf and Campbell Plateau)*			
TAN9204	1992	48	100	93	61
TAN9304	1993	251	57	177	33
TAN9605	1996	22	71	835	39
TAN9805	1998	71	77	536	62
		FMA 7 (Tasman Bay – Golden Bay and west coast South Island)			
KAH9204	1992	173	27	339	19
KAH9404	1994	196	23	341	18
KAH9504	1995	251	22	315	20
KAH9701	1997	185	30	302	26
KAH0004	2000	186	23	140	29

Biomass estimates are for core 300–800 m strata only

28 Biomass estimates for RSK 7 and SSK 7 (Tasman Bay – Golden Bay and west coast South Island), and smooth skate in the Chatham Rise area within SSK 3, appear generally stable. There are no recent and/or reliable estimates for skates on the east coast and north east coast of the North Island within RSK 1 and SSK 1, on the west coast of the North Island within RSK 8 and SSK 8, or on the Stewart – Snares Shelf and Campbell Plateau within RSK 3 and SSK 3.

29 Extreme variations in catchability of rough skate in FMA 3 mean that surveys in this area of RSK 3 are probably not providing reliable measures of abundance. However, the smooth skate relative biomass estimates within FMA 3 appears less affected by catchability. A steady decline in the relative biomass estimates of smooth skate in FMA 3, during the late 1990s, is a potential concern.

30 In some bycatch fisheries, catch per unit of effort (CPUE) does not adequately index abundance. However, for rough and smooth skate fisheries, concerns about fishers actively seeking or avoiding these species, and thereby confounding the relationship between CPUE and abundance, appear to be unfounded because of their low incidence in trawl catches and the resulting difficulty in targeting or avoiding them.

31 Trawl CPUE for skates (RSK, SSK and SKA) associated with flatfish and red cod target fisheries in statistical areas 020, 022, 024 (Otago) and 026 (Catlins) in FMA 3 are shown in Table 7. For reasons discussed earlier, caution is required when interpreting these data.

Table 7: **Mean trawl catch per unit effort (kg.tow^{-1}) of skates (RSK, SSK and SKA combined) for the main statistical areas and target fisheries in FMA 3. Source: CELR (estimated) and TCEPR. FLA, flatfish; RCO, red cod.**

Fishing Year	Area 020 FLA	Area 020 RCO	Area 022 FLA	Area 022 RCO	Area 024 FLA	Area 026 FLA
1991–92	37	120	28	108	28	22
1992–93	36	94	40	93	32	23
1993–94	49	78	59	73	33	28
1994–95	53	76	40	58	31	25
1995–96	40	78	41	67	28	23
1996–97	43	74	45	62	29	20
1997–98	50	68	42	57	30	24
1998–99	64	95	65	59	35	30
1999–00	59	96	60	75	43	27
2000–01	63	111	87	95	55	39

32 The highest CPUEs occurred in the red cod fisheries in statistical areas 020 and 022; flatfish fisheries in these areas generally had lower CPUEs. CPUE in the red cod fisheries in areas 020 and 022 initially declined from the early 1990s to the 1997-98 fishing year. They then stabilised, and then increased again. Increases in CPUE in recent years were also apparent in all flatfish fisheries. In the absence of adequate skate species-specific data, it is impossible to interpret these trends in CPUE for rough skate and smooth skate individually.

33 Recent increases in skate (RSK 3, SSK 3 and SKA 3) CPUE in statistical areas 020 and 022 are not consistent with the declining relative biomass estimates from the FMA 3 trawl surveys since 1996-97 (Table 6). However, as discussed above, trawl

survey indices are subject to potential biases. The recent increases in CPUE may reflect increasing market acceptance of the smaller rough skates, although both species were already being exported by South Island processors in the mid 1990s.

34 In conclusion, there is little stock assessment information available for rough or smooth skate. CPUE data is difficult to interpret separately for rough and smooth skates. Trawls surveys provide some information on relative biomass estimates of both species of skates but are subject to large inter-annual fluctuation due to changes in catchability. The steady downward trend in the relative biomass estimates for the smooth skate fishery in FMA 3 in recent years is a potential concern.

Environmental Issues

35 Management of fisheries under the Act includes obligations to address the adverse effects of fishing on the aquatic environment and to take those effects into account when deciding on measures to utilise fisheries resources in a sustainable manner.

36 The effects of utilising rough skate and smooth skate on associated and dependent species, the aquatic environment, and habitats of significance to fisheries management are unknown. It is likely that catch and landings of smooth skate and rough skate are influenced by changes in the abundance and distribution of the target species (red cod, flatfish, ling and hoki).

37 Hector's dolphin is classified as a threatened species under the Marine Mammals Protection Act 1978. While set netting is the predominant cause of incidental catch of Hector's dolphins there is a smaller risk of incidental capture from bottom trawling, particularly in QMAs 3 and 7.

38 MFish notes that there are standard environmental controls imposed on trawl and line target fisheries to mitigate the impact of these fishing methods on marine mammals and seabirds. These include prohibitions on net sonde monitor cables; compulsory reporting of bycatch of protected species; improving information on seabird interactions through the implementation of the National Plan of Action (NPOA) for seabirds. The draft NPOA does not identify the trawl fisheries for red cod and flatfish as a primary area of concern for seabird interactions.

39 In addition, industry has initiated specific mitigation measures for inshore trawl fisheries associated with RSK 3 and SSK 3 in particular, eg, inshore trawl fishers have voluntary closed areas to protect inshore habitat (shark species nursery areas and bryozoan beds). To reduce interactions with Hector's dolphins industry has voluntarily closed inshore areas to trawling and do not retrieve trawls if Hector's dolphins are in the general vicinity of the vessel.

40 The impact of the disposal of offal on seabirds by the trawlers catching rough skate and smooth skate as a bycatch is not known. NIWA reports indicate that fur seal interactions are not considered to be a major issue in FMA 3 where rough skate and smooth skate are mainly taken as a bycatch of the red cod and flatfish fisheries.

41 A future observer programme to obtain information on the interaction of marine mammals and seabirds associated with the flatfish and red cod target trawl fisheries in FMA 3 is being considered by MFish, DoC and industry.

42 Given that rough skate and smooth skate are caught primarily as a bycatch of trawl and line fisheries, it is expected that QMS introduction will not result in an increase in trawling and long lining. Consequently, it is unlikely that the introduction of rough skate and smooth skate into the QMS will further impact on Hectors dolphins. Nor will it impact on other associated or dependent species or the marine environment or habitats. Furthermore, introduction of rough skate and smooth skate into the QMS will provide for maintaining and improving the biodiversity values of these species, the only skate species that occur in water depths of less than 200m around New Zealand.

43 In conclusion, MFish notes that there is minimal information available regarding the environmental considerations to be taken into account when setting TACs for smooth skate and rough skate. The Act specifies that any uncertainty in information should be considered and decision-makers should be cautious when information is uncertain, unreliable or inadequate. However, uncertainty in information should not be used as a reason for postponing taking measures to achieve the purpose of the Act. From the available information, and the proposed mitigation measures, it is likely that biological diversity will not be adversely affected by the introduction of smooth skate and rough skate into the QMS.

Research

44 Research (MOF 2001/03N) on rough skate and smooth skate is focussed on improving specific reporting of these two species to provide better information for management of these fisheries in the future. The research aims to increase the ability of industry to identify these species correctly. One outcome of this research was an article in the September 2002 issue of *Seafood New Zealand* showing fishers and processors how to distinguish the two species. The article also provided background information on the biology and fisheries for rough skate and smooth skate.

45 No further research on rough skate or smooth skate is underway or planned at present. Until two to three years of species-specific rough skate and smooth skate catch and effort data is available, the stocks will be monitored by assessing landings against TACCs.

Social, Cultural and Economic Factors

46 Setting TACs, TACCs and providing nominal allowances for customary and recreational use, and fishing-related mortality, will provide social and cultural benefits by ensuring the sustainability of rough skate and smooth skate stocks. Sustainability measures for rough and smooth skate stocks will also provide for the interests of future generations.

47 The significance of the customary value of rough skate and smooth skate to Mäori needs to be considered carefully when potential management options for these fisheries are being considered. Any input from tangata whenua about the management of rough skate and smooth skate has relevancy for these fisheries.

48 As noted earlier, both rough skate and smooth skate are predominantly bycatch of the flatfish, red cod and hoki bottom trawl fisheries and the line fishery for ling. If the

TACCs for rough skate and smooth skate are set below current catch levels, then there may be economic implications for fishers. If target fishers do not hold sufficient ACE to cover the amount of RSK and SSK bycatch, they will incur interim and annual deemed value costs if rough and smooth skate have to be landed.

49 The total economic value of New Zealand's rough skate and smooth skate fisheries was around $936,000 for the 2001-02 fishing year, based on the current port price of $320 per tonne. The European market for rough skate and smooth skate has been stable over the last ten or so years with no obvious demand for further product.

Other information impacting on management measures

50 MFish is not aware of any provisions in any strategy or planning document under the Resource Management Act or Conservation Act that are relevant to the setting of sustainability measures for rough skate and smooth skate.

51 There are no relevant fisheries plans approved that would have any bearing on the setting of TACs for rough skate and smooth skate stocks. Further, no decisions have been made regarding fisheries services or conservation services that are relevant to the setting of TACs for rough skate and smooth skate.

TAC and Allowances

52 MFish proposed options for rough skate and smooth skate TACs, other allowances and TACCs (in tonnes) are outlined in Table 8.

Table 8: Proposed customary and recreational allowances, TACC, and TAC options for rough skate (RSK) and smooth skate (SSK) stocks.

Stock	Customary allowance	Recreational Allowance	Other sources of fishing-related mortality)	TACC	TAC
RSK 1	1	1	1	55	58
RSK 3	1	1	15	1512	1529
RSK 7	1	1	2	180	184
RSK 8	1	1	1	20	23
RSK 10	0	0	0	0	0
SSK 1	1	1	1	20	23
SSK 3					
Option 1	1	1	10	762	774
Option 2	1	1	10	572	584
SSK 7	1	1	3	270	275
SSK 8	1	1	1	20	23
SSK 10	0	0	0	0	0

TAC Management Strategy

53 MFish proposes that the default management option for TAC setting under s 13 of the Act apply to rough and smooth skate stocks. Alternative TAC management strategies under sections 14 or 14B of the Act are considered either inappropriate or unable to be applied.

54 MFish considers that the purpose of the Act would not be better achieved through use of an 'alternative TAC' under s 14. The biological characteristics of the species do not render the estimation of a MSY impossible, nor are the catch limits for any of the stocks part of an international agreement, nor is the fishery managed on a rotational or enhanced basis.

55 Section 14B of the Act provides a further alternative management strategy. This provision enables a TAC to be set that maintains a stock at a level that ensures its long-term viability, while other inter-related stocks can be taken at TAC and TACC levels set for those stocks based on B_{MSY}. Section 14B also provides for initiatives from quota holders. Rough and smooth skate are important customary and commercial species. Managing these species at a level other than that permitted under s 13 of the Act (ie, B_{MSY}) would have a detrimental effect on those fishing interests.

56 While rough skate and smooth skate are bycatch fisheries, their reproductive biology (oviparous with relatively few young), large size and life span make them susceptible to recruitment failure from overfishing. In addition, skate species are an important component of the multispecies fishery in FMA 3 comprising 3% and 10% of the quantity of fish landed by target red cod and flatfish fisheries, respectively.

Rationale for Proposed TACs

57 There is little stock assessment information available for rough skate and smooth skate stocks in New Zealand. In the absence of stock assessment information and appropriately set CCLs, proposed TACs for fisheries are usually based on known or estimated levels of recreational, Mäori customary, and commercial catch together with an estimate of all other sources of fishing-related mortality.

58 The CCL established for skates and rays in the early 1990s in QMA 3 (refer 11JC of the Fisheries (South-East Area Commercial Fishing) Regulations 1986) reflects an assessment of sustainability needs at that time and was not made in the context of current fisheries legislation and what could be sustainably harvested, taking into account relevant matters (eg, environmental principles). Neither was it based on a scientific assessment of yield. Options based on the CCL for QMA 3 are, therefore, not considered.

59 As outlined earlier, relative biomass estimates have been derived for rough skate and smooth skate from a number of trawl survey series but suffer from problems that limit their utility for tracking relative abundance. These problems include species mis-identification before 1996, short time series, variations in catchability, high CVs, and low catches.

60 Relative biomass estimates of RSK 7 and SSK 7 (Tasman Bay—Golden Bay and west coast South Island), and smooth skate on the Chatham Rise within SSK 3, appear generally stable. Extreme variations in catchability of rough skate in FMA 3 mean that surveys of rough skate in this area are probably not providing reliable measures of abundance. A steady decline in the estimates of relative biomass of smooth skate along the east coast South Island part of SSK 3 during the late 1990s is a potential concern.

61 CPUE information is available for SKA, RSK and SSK combined, for flatfish and red cod fisheries in areas 20 (Pegasus Bay) and 22 (Canterbury Bight) of the FMA 3 part of RSK 3 and SSK 3. Skate bycatch CPUEs associated with the flatfish and red cod fisheries in these areas have increased in recent years. However, the absence of adequate species-specific data makes it impossible to interpret separate trends in the CPUE for rough skate and smooth skate. Recent increases in CPUE are also not consistent with the declining estimates of relative biomass from the FMA 3 trawl surveys since 1996-97 (Table 6). However, these trawl survey indices are subject to potential biases, as discussed earlier.

62 Worldwide, skates, especially large species, appear to be highly vulnerable to over-exploitation, and even extinction. Several large species of North Atlantic skates have undergone dramatic population declines over large parts of their former range, to the point of near extinction, as a result of overfishing. Conversely, some smaller species have expanded their populations as larger species have declined, eg, at the Falkland Islands.

63 New Zealand's smooth skate may be highly susceptible to overfishing because of its large size and lack of a depth refuge from trawling. Smooth skate are late maturing and long-lived, relative to other skates, whereas rough skate are early maturing with a moderate life span. Both species have low fecundity.

64 The MFish fishery assessment plenary has concluded for skates (rough skate and smooth skate combined) in FMA 3 that it is not known if the CCL or recent catch levels are sustainable or whether they are at levels that will allow skate stocks to move towards a size that will support the MSY. For all other skate stocks, recent catch levels are probably sustainable and will probably allow these stocks to move towards a size that will support the MSY.

65 The maturing of export markets around 1990 has resulted in reasonably stable bycatch fisheries for rough and smooth skate for all RSK and SSK stocks since that time, apart from at the Kermadics (RSK 10 and SSK 10) where these species may not exist. Catch levels in all skate (RSK, SSK and SKA combined) fisheries have been reasonably constant over the last ten years (refer to Table 3), as have total New Zealand landings over the last ten years (refer to Table 2).

66 It is too early to consider development options for rough and smooth skate stocks as a more robust series of species-specific landings information is required. Development options are likely to be limited by the bycatch nature of the rough skate and smooth skate fisheries.

67 MFish is, therefore, of the view that it is appropriate to use the average commercial landings of skate over the last 10 years (1991-92 to 2000-01) as the basis for setting the TACs of rough skate and smooth skate stocks. The plenary has concluded that recent catch levels of skate stocks, other than FMA 3, are probably sustainable and will probably allow these stocks to move towards a size that will support the MSY. For FMA 3, it is not known if recent catch levels of skates are sustainable.

68 MFish is concerned about the SSK 3 fishery because estimates of relative biomass indicate a decline of this species in the FMA 3 part of SSK 3 and, worldwide, large skates (like smooth skate) have been vulnerable to overfishing. In addition, there is

the plenary's conclusion that it is not known if the CCL or recent catch levels are sustainable in FMA 3 or whether they are at levels that will allow skate stocks to move towards a size that will support the MSY. Furthermore, FMA 3 may be the source of recruits for smooth skate in FMAs 4 and 6.

69 MFish supports the apportionment of landings of SKA, RSK and SSK to RSK and SSK stock TACCs being based on the average proportion of RSK and SSK caught in trawl surveys (refer to Table 1) and any other relevant information. These ratios have been subject to consultation as part of the determination of QMAs for rough and smooth skate during May 2002 and the Minister has since agreed to these ratios.

70 Inshore fishers in FMA 3 and FMA 5 have recently advised FishServe, during the eligible catch objection period, that their catch of rough skate comprises around 93% of their skate (SKA, RSK and SSK) catch, rather than the lower levels for SKA obtained from trawl surveys, and of possible inaccuracies in their recording of RSK and SSK.

71 Anecdotal information from inshore fishers suggests that rough skate is the predominant species in shallower inshore water. The trawl surveys in FMA 3 and FMA 5 generally did not sample shallow water depths below ten metres where inshore fishers mainly fish for flatfish. In addition, the trawl surveys included deeper water depth strata that are not fished by inshore fishers. MFish also notes that the proportion of rough skate was 97% during a commercial trawler trial conducted in the shallow water depths of FMA 3 in 2000-01 to test the catchability of elephantfish associated with the FMA 3 trawl survey.

72 MFish intends to support the apportionment of higher amounts of catch history of rough skate to inshore fishers who have objected to their catch histories on the basis of apportionment of the two species. As a consequence of likely changes to inshore fishers apportionment of SKA, RSK and SSK catch history by the eligible catch objection process, MFish has modified the FMA 3 landings component of the TACs of RSK 3 and SSK 3 to take into account the likely apportionments to inshore fishers in FMAs 3 and 5. Around 759 tonnes of the total average landings of SKA, RSK and SSK by inshore trawlers within FMA 3 has been apportioned for TACC setting purposes. Sixteen tonnes of the total average landings of SKA, RSK and SSK by inshore trawlers within FMA 5 has also been apportioned for TACC setting purposes.

73 Rough skate and smooth skate are not important recreational fisheries as skates are only occasionally caught as a bycatch when lining. In addition, it is likely that recreational fishers return rough skate and smooth skate to the sea if they catch these species. Consequently, such recreational catches are probably negligible. This is borne out by the results of the 1996 National Recreational Fishing Survey where recreational fishers only recorded 24 skate taken over the whole of New Zealand.

74 While no customary Mäori fisheries are known, this may be, in part, due to the special significance skates have to tangata whenua in some areas of the South Island. In these areas, skates and rays (whairepo) are considered to be kaitiaki, and are not fished. Ngäi Tahu rünanga have indicated they would like closed areas to be established to recognise and provide for the spiritual significance of whairepo. MFish understands that Ngäi Tahu papatipu rünanga are investigating areas of spiritual significance associated with skates and rays. When these areas have been advised, MFish intends

to liase with the papatipu rünanga and provide information about mechanisms that may be used to achieve their goals.

75 The level of illegal take of rough skate and smooth skate is likely to be low as, compared to other species, it is of low value and it is not easily targeted.

76 Returning skates to the sea once a fisher's ACE has been reached is unlikely to affect the sustainability of rough and smooth skate stocks as most animals are likely to survive. Skates are hardy animals, and frequently survive capture by trawls, though survival rates probably decline with increasing tow length and increasing weight of fish caught. Given the latter sources of mortality, MFish is proposing small allowances for this source of other fishing-related mortality based on a proportion of the TACCs. Skates caught on longlines probably also survive capture. It is likely that little skate has been discarded since 1979 when export markets developed.

77 Setting rough skate and smooth skate TACs based on the average or lower amounts of commercial landings and making small nominal allowances for non-commercial fishers is unlikely to increase trawling or long lining and result in further impacts on Hector's dolphins and other marine mammals or seabirds. Nor is it likely to have impacts on, or increase the amounts of, unsaleable or juvenile commercial fish species.

78 On balance, given the paucity of information on the sustainable yields and biology of the species, MFish considers the level of TACs proposed allows for utilisation at a reasonable level while ensuring sustainability.

Proposed Allowances and TACCs

79 MFish notes that information about the existing catch in each stock can be used as a guide when considering allocation but is not necessarily determinative of the final allocation. The Minister makes a separate decision on allocation of allowances that may not reflect current catch of each stakeholder group.

Recreational allowance

80 Given the very small catch of rough and smooth skate by recreational fishers, MFish is proposing that nominal allowances be set for recreational fishing within the TAC.

Customary Mäori allowance

81 Given the special significance of skates to Mäori, the customary catch is likely to be very low. MFish is proposing nominal allowances within the TAC for customary use.

Allowance for other sources of mortality

82 No allowance has been made for potential illegal take of rough skate and smooth skate. Skates are unlikely to be taken illegally because they are usually only taken as a bycatch and do not have a high value.

83 Allowances of one per cent of the TACCs have been made for the small amount of fishing-related mortality associated with returning rough skate and smooth skate to the sea, and are included in the TACs.

Proposed TACCs

84 The proposed TACCs, based on commercial landings over the last ten years (1991-92 to 2000-01), are set out in Table 8 and are based on landings information provided by NIWA (Table 9), apart from RSK 3 and SSK 3 whose ratio has been modified on the basis of information supplied by inshore fishers.

Table 9: **NIWA table of average annual skate landings (SKA, RSK and SSK combined) by FMA for the 10-year period 1991–92 to 2000–01, estimated percentage of smooth skate in the landings, indicative average catch by species, and recommended TACCs for rough and smooth skate. Data for recommended QMAs shown in bold. Source: CELR (landed) and CLR.**

FMA	Average landings (t)	Percentage Smooth skate	Indicative average catch (t) Rough skate	Indicative average catch (t) Smooth skate	Recommended TACC (t) Rough skate	Recommended TACC (t) Smooth skate
1	25	25	19	6		
2	49	25	37	12		
1 & 2	**73**	**–**	**55**	**18**	**55**	**20**
3	1 641	40	985	656		
4	112	99	1	111		
5	332	33	222	110		
6	189	75	47	142		
3, 4, 5, & 6	**2 274**		**1 255**	**1 019**	**1 260**	**760**
7	446	60	178	268	180	270
8	25	50	12	12		
9	7	50	4	4		
8 & 9	**33**	**50**	**16**	**16**	**20**	**20**
10	0	–	0	0	0	0

85 The proposed TACs are unlikely to have significant economic implications for commercial fishers as TACCs have been set taking into account average commercial landings over the last ten years and are generally around current catch levels (2001-02 fishing year) apart from RSK 1 and SSK 1 (refer Table 3). Setting the TACCs taking into account average commercial landings over the last ten years will take into account target species variability. Allowing rough skate and smooth skate to be returned to sea (see para 89) will also mitigate economic impacts on fishers during years when these species are caught as bycatch at levels higher than on average.

86 An additional option is proposed to reduce the TACC of SSK 3 by 25% (and proportionally the TAC) because of the steady decline in the estimates of relative biomass of smooth skate in the FMA 3 part of SSK 3. It is not proposed to reduce customary and recreational allowances as they are only nominal amounts. A reduction in SSK 3 landings by 25% will result in fishers having to return this amount of SSK 3 to the sea and a reduction of commercial catch of 190 tonnes. Based on current port price of $0.32 per kg ($320 per tonne), a reduction of commercial catch

of SSK 3 by 190 tonnes would amount to a loss of economic value to fishers of around $61 000.

87 While noting the economic impact, MFish considers that there is a risk to the sustainability of the SSK 3 fishery if the TACC is based on average landings of smooth skate in FMAs 3, 4, 5 and 6 over the last ten years given the biology of the species and indications from trawl surveys of a decline in FMA 3. Furthermore, FMAs 4 and 6 may be stocked primarily by smooth skate recruits migrating from FMA 3. Setting the TACC at less than the average catch also reduces the possibility of smooth skate being progressively replaced by rough skate which mature earlier and have a moderate life span.

88 Use of average reported commercial landings over the last ten years and the proposed reduction to the catch level of SSK 3 should provide for a reasonable level of utilisation taking into account the limited stock assessment available. Introduction into the QMS of rough skate and smooth skate will encourage better reporting of these species and enable better monitoring of catches and CPUE of these fisheries. Stakeholders will also have the opportunity to develop measures to prevent the overfishing of SSK 3 by introducing voluntary measures to ensure the health of this fishery.

Other Management Measures

89 Other management measures are also proposed for rough skate and smooth skate fisheries:

a) Interim and annual deemed values;

b) Providing for return to the water; and

c) Consequential amendments to fisheries regulations

90 A separate section in this document sets out generic information on the setting of deemed values and provides stock specific information in relation to interim and annual deemed values proposed for rough skate and smooth skate. The document also contains information on the setting of overfishing thresholds and tolerance levels. MFish notes that no overfishing thresholds are proposed in respect of rough skate and smooth skate stocks.

Return of Rough Skate and Smooth Skate to the Water

91 Based on the information provided by NIWA, MFish is of the view that returning skates to the sea once ACE has been reached is unlikely to affect the sustainability of rough and smooth skate stocks as most animals are likely to survive. Skates are hardy animals and frequently survive capture by trawls though survival rates probably decline with increasing tow length and increasing weight of fish caught. However, fishers are generally aware of the possibility of mortality of rough skate and smooth skate from longer tows and increasing weight of fish caught and take measures to reduce this impact. Some fishers have advised they are considering incorporating these measures into their codes of practice. Skates caught on longlines probably also survive capture.

92 Provision for rough skate and smooth skate to be returned to the sea will reduce costs for industry as they will not be faced with paying deemed values for skate catch that cannot be covered by ACE.

93 Accordingly, MFish proposes that rough skate and smooth skate be added to the Sixth Schedule of the Fisheries Act to allow return to the water, with stated requirements that they must be likely to survive and must be returned to the waters from which they were taken as soon as practicable. Details of the proposal are set out in Annex One to the rough skate and smooth skate section.

Consequential amendment to regulation

94 As a consequence of introduction of rough skate and smooth skate into the QMS, MFish proposes to revoke the existing regulatory provision of a CCL for skates and rays in QMA 3 as it will be replaced with a TACC. In addition, MFish proposes to introduce a number of amendments to the reporting regulations to ensure the effective and efficient operation of the QMS. Details of the proposed amendments are attached as Annex One to the rough skate and smooth skate section.

Preliminary Recommendations

95 MFish recommends that the Minister:

a) **Agree** to set a TAC of 58 tonnes for RSK 1 and within that TAC set:
   i) A customary allowance of 1 tonne;
   ii) A recreational allowance of 1 tonne;
   iii) An allowance for other fishing-related mortality of 1 tonne; and
   iv) A TACC of 55 tonnes.

b) **Agree** to set a TAC of 1529 tonnes for RSK 3 and within that TAC set:
   i) A customary allowance of 1 tonne for customary fishers;
   ii) A recreational allowance of 1 tonne;
   iii) An allowance for other fishing-related mortality of 15 tonnes; and
   iv) A TACC of 1512 tonnes.

c) **Agree** to set a TAC of 184 tonnes for RSK 7 and within that TAC set:
   i) A customary allowance of 1 tonne for customary fishers;
   ii) A recreational allowance of 1 tonne;
   iii) An allowance for other fishing-related mortality of 2 tonnes; and
   iv) A TACC of 180 tonnes.

d) **Agree** to set a TAC of 23 tonnes for RSK 8 and within that TAC set:
   i) A customary allowance of 1 tonne for customary fishers;
   ii) A recreational allowance of 1 tonne;

iii) An allowance for other fishing-related mortality of 1 tonne; and

iv) A TACC of 20 tonnes.

e) **Agree** to set a TAC of 0 tonnes for RSK 10.

f) **Agree** to set a TAC of 23 tonnes for SSK 1 and within that TAC set:

i) A customary allowance of 1 tonne;

ii) A recreational allowance of 1 tonne;

iii) An allowance for other fishing-related mortality of 1 tonne; and

iv) A TACC of 20 tonnes.

Either:

g) **Agree** to set a TAC of 774 tonnes for SSK 3 and within that TAC set:

i) A customary allowance of 1 tonne for customary fishers;

ii) A recreational allowance of 1 tonne;

iii) An allowance for other fishing-related mortality of 10 tonnes; and

iv) A TACC of 762 tonnes.

Or

Agree to set a TAC of 584 tonnes and within that TAC set:

v) A customary allowance of 1 tonne;

vi) A recreational allowance of 1 tonne;

vii) An allowance for other fishing-related mortality of 10 tonnes; and

viii) A TACC of 572 tonnes.

h) **Agree** to set a TAC of 275 tonnes for SSK 7 and within that TAC set:

i) A customary allowance of 1 tonne for customary fishers;

ii) A recreational allowance of 1 tonne;

iii) An allowance for other fishing-related mortality of 3 tonnes; and

iv) A TACC of 270 tonnes.

i) **Agree** to set a TAC of 23 tonnes for SSK 8 and within that TAC set:

i) A customary allowance of 1 tonne for customary fishers;

ii) A recreational allowance of 1 tonne;

iii) An allowance for other fishing-related mortality of 1 tonne; and

iv) A TACC of 20 tonnes.

j) **Agree** to set a TAC of 0 tonnes for SSK 10.

k) **Agree** to add rough skate and smooth skate to the Sixth Schedule of the Act.

l) **Agree** to revoke:

11JC of the Fisheries (South-East Area Commercial Fishing) Regulations 1986 that set a competitive catch limit for skates and rays in QMA 3.

m) **Agree** to amend the Fisheries (Reporting) Regulations 2001 to outline the codes to be used by fishers when completing their statutory catch returns.

ANNEX ONE

Amendment to regulations

Return of rough skate and smooth skate to the water

1 While rough skate and smooth skate are bycatch species, they are hardy animals that frequently survive capture by trawls, according to NIWA. Increasing tow length and increasing weight of fish caught are factors that reduce the possibility of survival of rough skate and smooth skate returned to the sea. Skates caught on longlines probably also survive capture.

2 MFish proposes to provide for the return of rough skate and smooth skate to the sea by adding rough skate and smooth skate to the Sixth Schedule of the Act, with the following conditions:

That they are:

a) Likely to survive;

b) Returned to the same waters from which they were taken; and

c) Are returned as soon as is practicable after they are taken.

3 This proposal is consistent with other commercial finfisheries already on the Sixth Schedule.

Problem definition

4 The majority of rough skate and smooth skate are caught as a bycatch rather than a target species, which means there is no economic value associated with their take but there is a cost imposed on the sustainability of these species.

Preliminary consultation

5 MFish has discussed this proposal with the South East Finfish Management Company (SEFMC). SEFMC is supportive of allowing fishers to return rough skate and smooth skate to the sea.

Options

Non-Regulatory Measures

6 Unless rough skate and smooth skate are added to the Sixth Schedule, it will be illegal to return rough skate and smooth skate caught without ACE to cover this catch. There is no non-regulatory mechanism for returning fish taken under the QMS to the sea.

Regulatory Measures

7 To implement this measure it is necessary to add rough skate and smooth skate stocks to the Sixth Schedule.

Costs and benefits of the proposal

8 Adding rough skate and smooth skate to the Sixth Schedule will provide fishers who generally catch skate as a bycatch the flexibility to return these fish to the sea (provided they are returned alive, immediately). Unless rough skate and smooth skate are added to the Sixth Schedule, any rough skate or smooth skate taken must be landed and deemed values paid if a fisher does not have ACE to cover this catch.

9 Given that rough skate and smooth skate are hardy animals that are likely to survive if caught in trawls or by lining, there is no sustainability reason to not allow return to the sea. Allowing rough skate and smooth skate to be returned to the sea is the least cost option for fishers and should encourage fishers to adopt fishing practices that assist the survival of skates, especially since they will not be penalised with deemed value payments.

10 MFish intends to develop, in conjunction with industry, an appropriate monitoring programme for skate and smooth skate mortality associated with fishing. Allowing rough skate and smooth skate to be returned to the sea will avoid additional compliance costs that would be needed to ensure rough skate and smooth skate are not returned to the sea.

Administrative implications

11 There are no significant administrative implications.

Redundant catch limits

12 It is proposed to repeal regulation 11JC of the Fisheries (South-East Area Commercial Fishing) Regulations 1986. This regulation sets a competitive catch limit (CCL) for skates and rays in QMA 3.

Background

13 Under the Fisheries (South-East Area Commercial Fishing) Regulations 1986, a CCL for each fishing year of 900 tonnes applies to commercial fishers in QMA 3. The setting of TACs and TACCs for rough skate and smooth skate stocks makes the competitive catch limit in QMA 3 redundant under the QMS. MFish proposes this CCL be revoked.

Problem definition

14 Since the 1990s, a regulated CCL has been in place for skates and rays in FMA 3. In this area, within any fishing year, the Chief Executive may, after publicly notifying his intentions, prohibit commercial fishers from fishing these species when 900 tonnes of skate and ray have been taken.

15 Rough skate and smooth skate will be introduced into the QMS from 1 October 2003. At this time the Minister will set TACs and TACCs for the 2002-03 fishing year that will become the primary sustainability mechanism for these species under the QMS.

Preliminary consultation

16 No direct consultation on this regulation has been undertaken, however the Minister has indicated this requirement in the consultation and decisions for the QMS introduction process.

Options

17 Given that a TAC and TACC must be set for each of the stocks upon introduction into the QMS, the CCL is no longer required.

Non-regulatory measures

18 There are no non-regulatory alternatives to revoking the CCL in QMA 3.

Regulatory measures

19 There is no option but to revoke this regulation.

Costs and benefits of the proposal

20 The CCL is neither required nor valid under the QMS.

Administrative implications

21 Under the QMS, the total catch within a stock is determined by the TAC and the commercial harvest by the TACC. The removal of the CCL will ensure that there are no ultra vires laws specifying the maximum quantity of fish that may be taken from a stock.

Conclusion

22 Rough skate and smooth skate will be introduced into the QMS on 1 October 2003. The Minister is required to set a TAC and TACC for each stock of rough skate and smooth skate, and these will supersede the regulated CCL for QMA 3 as the primary mechanism to ensure sustainability. As such, these regulations must be repealed.

Recommendation

23 MFish recommends that regulation 11JC of the Fisheries (South-East Area Commercial Fishing) Regulations 1986 that sets a CCL for skates and rays for QMA 3, be repealed.

Consequential amendments to the Fisheries (Reporting) Regulations 2001

Background

1 It is proposed to make consequential amendments to the Fisheries (Reporting) Regulations 2001 by amending:

a) Table 1 of Part 1 of Schedule 3 of those regulations which specifies the codes to be used when completing catch returns which must be furnished to the Chief Executive. This amendment will incorporate codes which reflect the revised QMAs for rough skate and smooth skate;

b) Table 2 of Part 1 of Schedule 3 of those regulations defining the specific QMAs defined by the Minister in his declaration of October 2002.

2 The Fisheries (Reporting) Regulations 2001 provide the framework for the completion and furnishing of statutory catch returns by fishers to the Chief Executive. Information contained in these returns is used for research, stock assessment, enforcement and administrative reasons (including balancing catch against ACE). With the revised QMAs established by the Minister, it is appropriate to amend these regulations to ensure that they reflect the Minister's decisions on QMAs for rough skate and smooth skate.

Problem definition

3 The obligations for fishers to report their catch and the codes used to complete these returns should reflect the Ministers decisions on QMAs for each species to be introduced into the QMS on 1 October 2003.

Preliminary consultation

4 No direct consultation on the need to amend these regulations has been undertaken as it is a consequential amendment flowing from the Minister's QMA decisions.

Options

5 As the reporting framework is contained in regulations, there is no other option than to amend these regulations.

Costs and benefits of the proposal

6 The proposed amendments clarify the obligations for fishers when completing their statutory returns. Regulatory clarification means fishers are aware of their reporting obligations and complete their returns in the simplest fashion possible.

Administrative implications

7 Minor amendments to forms and explanatory notes will be required consequential to this regulatory amendment.

ROUGH SKATE AND SMOOTH SKATE (RSK, SSK) – FINAL ADVICE

Initial Proposal

1 It was proposed in the initial position paper (IPP) to set the following TACs, allowances for customary fishing interests, recreational interests, and other sources of fishing-related mortality, and TACCs for skate stocks being introduced into the QMS on 1 October 2003 (refer Table 1).

Table 1: IPP proposals in tonnes for rough skate and smooth skate TACs, allowances for customary, recreational and other sources of fishing-related mortality and TACCs.

Stock	FMAs	TAC	Customary Allowance	Recreational Allowance	Other Sources of Fishing-Related Mortality	TACC
RSK 1	1 & 2	58	1	1	1	55
RSK 3	3 - 6	1529	1	1	15	1512
RSK 7	7	184	1	1	2	180
RSK 8	8 - 9	23	1	1	1	20
RSK 10	10	0	0	0	0	0
SSK 1	1 & 2	23	1	1	1	20
SSK 3	3 - 6					
Option 1		774	1	1	10	762
Option 2		584	1	1	10	572
SSK 7	7	275	1	1	3	270
SSK 8	8 - 9	23	1	1	1	20
SSK 10	10	0	0	0	0	0

2 This proposal is part of a package of measures regarding the introduction of rough skate and smooth skate into the QMS. The other measures proposed have been addressed in an earlier advice paper to you and include:

a) revoking a competitive catch limit for skates (Genus *Raja*, *Bathyraja* and *Arhynchobotis*) and rays (Genus *Dasyatis*, *Myliobatis*, *Mobula*, *Torpedo* or *Typhlonarke*) in FMA 3,

b) allowing the return of rough skate and smooth skate to the water [Sixth Schedule of the 1996 Act], and

c) providing codes to be used by fishers when completing their statutory reporting forms.

Biological and Fishery Information

Submissions

3 No submissions were received regarding biological and fishery information.

TACs, Allowances and TACC setting considerations

Submissions

4 **Te Ohu Kai Moana** (TOKM) considers that the most important factor in setting sustainability regimes for skates is to ensure that the bycatch status of these species is recognised so that they do not inhibit access to other more preferred and more valuable species. TOKM notes that it normally develops its views on suitable management based on sustainable fishing information. But, in the absence of any yield information for skates, the maintenance of sustainable harvest levels of associated species inevitably becomes of greater significance, except for SSK 3. TOKM supports the TACs, TACCs, and allowances as recommended in the IPP, and supports Option 2 for SSK 3 with a TAC of 584 tonnes.

5 **Te Rünanga o Ngäi Tahu** (TRONT) is not opposed to the introduction of skates into the QMS.

6 **Te Rünanga o Ötäkou** (TRO) notes that the Minister is required to develop policies to help recognise the use and management practices of takatä whenua in the exercise of customary non-commercial fishing rights. Hence, TRO requests that a precautionary approach be adopted when setting TACs and TACCs for species where there is no catch history.

7 TRO requests that 25% of the TAC be provided as a non-commercial allowance, of which 80% should be provided as a customary allowance. TRO requests this allocation to avoid the risk of commercial and non-commercial users coming into conflict in the future. Such an allocation would provide an effective means for Kaitiaki Runaka to exercise their kaitiakitaka responsibility. TRO notes that a customary allocation does not need to be harvested. TRO claims that Kaitiaki Runaka would be significantly disadvantaged if the non-commercial allocation is insufficient to remove competition between sectors.

8 **Nga Hapu o Te Uru** (NHTU) submits that, as there is no stock assessment for skates, a precautionary approach should be adopted and skates should not be introduced into the QMS.

9 **New Zealand Seafood Industry Council** (SeaFIC) considers that historical catch levels under-estimate actual catches for non-target species like skates because of the reporting requirement to record only the five most abundant species in a catch. Therefore, SeaFIC considers that the proposed TACCs for rough skate and smooth skate, based on average landings over the last 10 years, are conservative and in 50% of future seasons will impose constraints on the catch of target fisheries or, alternatively, fishers will incur deemed values.

10 SeaFIC notes that the most recent MFish Plenary advice concluded that recent catch levels are probably sustainable and will probably allow stocks to move towards a size that will support the MSY. In the absence of sustainability concerns, SeaFIC recommends that TACCs for skate stocks, except SSK 3, be based on the highest recorded catch estimate.

11 For SSK 3, SeaFIC supports Option 1 (based on the average landings of the ten fishing years from 1991-92 to 2000-01) with a TAC of 774 tonnes, because skate catches are subject to large inter-annual fluctuations in catchability, and recent catches are inconsistent with the declining biomass estimates which, for SSK 3, contain considerable uncertainty. In addition, for SSK 3 it is not known if recent catch levels are sustainable or whether they are at a level that will allow stocks to move towards the MSY. Furthermore, QMS entry will result in more accurate catch landing data to support future management.

12 **Sanford Limited** supports the introduction of both rough skate and smooth skate into the QMS. Sanford Limited supports the use of highest recorded catch estimates as a conservative starting point to set TACCs. Sanford Limited believes that historical reporting practices and identification of issues for some fishers have created an under-estimate of actual catch landing data.

13 **Golden Bay/Motueka Fishermen's Association** (GBMFA) support the MFish recommendations for TACs, TACCs, and allowances for RSK 3, RSK 7, and SSK 7. For SSK 3, they support Option 1 with a TAC of 774 tonnes.

MFish Discussion - TAC setting

14 There is little stock assessment information available for skate stocks in New Zealand. Estimates of biomass and yield are not available for any stock. MFish is of the view that it is not appropriate to consider using commercial catch limits (CCLs) established in the early 1990s as a basis for establishing TACs. The FMA 3 CCL was not based on scientific assessment of yield, nor was it developed in the context of the 1996 Act (i.e., providing for sustainable catch levels while taking into account relevant matters, such as environmental principles).

15 In the absence of stock assessment information on which to assess MSY, MFish proposes to use the best alternative information available, information from reported commercial landings and the MFish Fishery Assessment Plenary 2003 (Plenary) assessment of the sustainability of recent catch levels, to set TACs at levels that will move rough skate and smooth skate stocks towards a size that will support the MSY, while having regard to the interdependence of stocks.

16 For all rough skate and smooth skate stocks, except smooth skate in FMA 3 (SSK 3), MFish proposed in the IPP (para 67) to use the average commercial landings of skate over the last 10 years (1991-92 to 2000-01) as a basis for setting the TACs (Table 2). The Plenary concluded that recent catch levels of skate stocks, other than in FMA 3, are probably sustainable and will probably allow these stocks to move towards a size that will support the MSY. The Plenary also concluded that it is not known if recent catch levels of skate stocks in FMA 3 are sustainable or will allow the stocks to move towards a size that will support the MSY.

17 MFish used reported landing data for proposing TACs. Reported landing data is the best available information on catch of rough skate and smooth skate. Reported landing data is based on information supplied to fishers by licensed fish receivers (LFRs) and includes all actual landings. The reporting requirement to record only the five most abundant species applies only to fishers' estimates of their catch. For

skates, the estimated catch is only about half of the reported landings on catch effort landing returns (CELRs).

18 The amount of skate discarded and recorded is a reasonably significant amount at about 12% of total landings. MFish acknowledges that the reported data for skates probably does not include any fish that was caught and discarded. There is no information on how much skate has been discarded and not recorded.

19 MFish noted in the IPP (para 15, 65) that since export markets were developed in the early 1990s catches of skates have been relatively stable, which most likely indicates that the majority of skate caught has been landed. Skate catch information from Licensed Fish Receiver Returns (LFRRs) and fishers (CELR landings and catch landing returns) shows reasonable agreement, though the latter indicates high landings since 1997-98. Furthermore, MFish considers that the expectation of further species being introduced into the QMS is likely to have encouraged fishers to more accurately report catches.

Table 2: Skate reported landings (SKA, RSK, and SSK combined) in tonnes by FMA, by fishing year, plus the most recent 10 year mean catch, the most recent 3 year mean catch, and the highest recorded catch in each FMA over all these fishing years.

FMA	Fishing Year											10 yr Mean Catch	3 yr Mean Catch	Highest Recorded FMA Catch
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002			
1	15	18	18	21	47	16	32	16	23	41	93	33	52	93
2	15	18	40	49	47	52	48	59	77	84	120	59	94	120
3	1560	1812	1795	1651	1422	1404	1572	1672	1772	1748	1369*	1641	1731	1812
4	71	76	169	111	114	85	159	124	97	113	185	123	132	185
5	199	651	297	362	377	250	208	342	318	316	419	354	351	651
6	227	188	160	108	189	110	299	236	193	178	175	184	182	299
7	517	494	396	517	527	548	310	360	364	431	431	438	409	548
8	19	33	23	37	18	29	30	22	25	18	28	26	24	33
9	0	0	0	6	2	7	10	10	18	21	12	9	17	21
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ET	0	0	0	0	0	0	5	36	64	0	3	11	22	64
Not stated	0	0	0	1	24	31	14	12	5	13	91	19	36	91
Total	2623	3290	2898	2863	2767	2532	2687	2889	2956	2963	2926	2896	3049	3917

Note: The 2001-02 fishing year catch in FMA 3 was constrained by closure of the Fishery during the fishing year, therefore this fishing year has been excluded from the calculation of the mean catch for FMA 3).

Note: Fishing year '1992' is the fishing year 1991-92, ET is catches taken outside the New Zealand EEZ.

20 In light of the recent Plenary conclusion that recent catch levels (other than FMA 3) are probably sustainable, and stakeholder submissions that suggest historical catch was underestimated, MFish has considered three options for TACs for rough and smooth skate stocks (except for SSK 3) based on landing data outlined in Table 2:

- set the TACs at the level of average landings of the ten fishing years from 1991–92 to 2000–01, as proposed in the IPP; or
- set the TACs at the level of the average landings of the three most recent fishing years [1999–00 to 2001–02, apart from FMA 3 (1998–99 to 2000–01)]; or
- set the TAC at the highest recorded landings (as proposed by SeaFIC and

Sanford Limited).

21 Setting TACs at the level of average landings of the ten fishing years from 1991–92 to 2000–01 would provide a low risk to sustainability and would take into account the skate fishery having sustained this level of reported landings for some time. MFish favoured this option in the IPP (TACs based on the average catch of the 10 fishing years from 1991-92 to 2000-01) because of the paucity of information to determine the sustainable yields and the biology of rough skate and smooth skate.

22 However, new information provided in submissions concerning the likelihood that landings of skates are underestimated due to historical reporting practices, and further analysis of landing data, has lead MFish to conclude that recent landings are probably more accurate and should be used to determine TACs. MFish is of the view that reporting over the three most recent fishing years is the most accurate information as it is very likely that significant unreported discarding took place in previous years.

23 The second option, setting TACs at the level of average landings of the three most recent fishing years, also takes into account that the skate fishery has sustained this level of reported catch for a period of time. The net effect of this option, over the first option, would be about a 153 t increase in the nationwide total of the TACs, but with some redistribution of the TACs between stocks (refer Table 2). The three most recent fishing year period most closely aligns with the period when the Plenary concluded that recent catch levels of skate stocks, other than for smooth skate in FMA 3, are probably sustainable.

24 MFish considers that the second option (average of the three most recent fishing years) provides TACs based on the best and most recently available information. As noted, export markets for skates have been developed since the early 1990s and there is no evidence of substantial quantities of skates being discarded in recent years.

25 The third option, setting TACs at the level of the highest landings in an FMA, has a higher sustainability risk than the other options as the total catch, nationwide, would be 600 t greater than the largest historical catch of 3 290 tonnes in 1992-03. The net effect would be a 1 021 t increase in the total of the TACs compared with that based on the average landings of the ten fishing years from 1991–92 to 2000–01.

26 MFish considers that the third option (highest recorded landings) carries considerable risk of catches not being sustainable.

27 MFish has some concern about the SSK 3 stock because of the decline in the relative biomass estimates in FMA 3 during the late 1990s.

28 As noted in the IPP, smooth skate is likely to be vulnerable to overfishing because of its reproductive biology, large size, long life span, and susceptibility to recruitment failure. In addition, the Plenary concludes that it is not known if recent catch levels are sustainable in FMA 3 or whether or not they will allow movement to towards a level that will support the MSY. Furthermore, NIWA believes that FMAs 4 and 6 may be stocked primarily by smooth skate recruits migrating from FMA 3.

29 MFish considers that there is a risk to the sustainability of SSK 3 if the TAC is based on average landings of smooth skate in FMAs 3 – 6 over the three most recent fishing

years. This risk is based on the biology of the species and indications of a decline in relative biomass in FMA 3. Setting the TAC at less than the average landings would reduce the prospect that rough skate could progressively replace smooth skate, as the former matures earlier and has a moderate life span.

30 In the IPP, MFish favoured a 25% reduction to the average catch of the ten fishing years from 1991-92 to 2000-01 when determining the TAC for SSK 3. NIWA recommended setting this TAC at 75% of the estimated long-term average landings to allow for the greater risk of overfishing to smooth skate. However, MFish has now considered two other options to move SSK 3 towards a level that will support the MSY. These two options are based on more recently available information, which suggests that recent years landings are likely to be more accurate.

31 The first option (MFish's preference) is a 25 % reduction to the average landings for the three most recent fishing years (rather than the ten year average) when determining the TAC for SSK 3. This will mean that, if catches remain at current levels, fishers will have to return 25% of their SSK 3 catch to the sea. This option takes into account that catches are likely to have been more accurately reported over the three most recent fishing years and that introduction into the QMS will further encourage accurate reporting. This TAC option provides better probability of moving the SSK 3 stock towards a size that will support the MSY, but it would have significant economic impacts for fishers.

32 The second option is to set the TAC for SSK 3 at the level of the average landings for the three most recent fishing years. This option recognises that there is no information available to determine if catch levels of SSK 3 are sustainable, and acknowledges the submission by SeaFIC that recent catches are inconsistent with the declining relative biomass estimates. Industry would be encouraged to develop and implement a voluntary catch-spreading plan to ensure that smooth skate catches are appropriately spread across FMAs 3, 4, 5 & 6 so that the SSK 3 resource is not stressed by additional catches being taken in FMA 3 that normally would have been taken in other FMAs. The South-East Finfish Management Ltd in FMA 3 is well organised and capable of implementing voluntary arrangements. This option increases the sustainability risk for the SSK 3 stock but reduces the economic impact on fishers.

33 MFish notes that over the next two or three fishing years it will be closely monitoring catch and effort information of rough skate and smooth skate stocks, especially in the SSK 3 fishery. As well, MFish will investigate the need for other research that will provide information to better assess and manage rough skate and smooth skate stocks, including the possibility of identifying nursery areas.

MFish Discussion - Allowances and TACC setting

Recreational Allowance

34 Skates are not considered to be an important species to recreational fishers. No submissions were received concerning the recreational allowance. The IPP contains a discussion of matters relating to the setting of the recreational allowances (refer IPP para 19, 73, 79-80).

Customary Mäori Allowance

35 MFish notes the request from NHTU for skates not to be introduced into the QMS. However, you have already made a declaration under s 18 of the 1996 Act for rough skate and smooth skate to be subject to the QMS.

36 TRO has requested that 25% of the TAC be provided as a non-commercial allowance. MFish notes that currently the non-commercial catch of skates is low. There is no evidence of any conflict between commercial and non-commercial fishers over rough skate or smooth skate. MFish is of the view that allocation of 25% of the TAC to non-commercial fishers would have severe economic impact on the commercial target fisheries (e.g., flatfish and red cod) that take skates as a bycatch, as fishers would not have access to adequate levels of quota or ACE as a result of the disproportionately large allocation to non-commercial fishers.

37 Skates are not considered to be an important species to customary fishers. The IPP contains a discussion of matters relating to the setting of the customary allowances (refer IPP para 20, 74, 79, 81).

Allowances for Other Sources of Fishing-Related Mortality

38 No submissions were received on matters relating to allowances for other sources of fishing-related mortality.

TACCs

39 As noted, MFish has used reported landing data as the basis for developing recommendations for setting TACCs. Because the allowances for customary and recreational fishing and other sources of fishing-related mortalities are low, the TACCs can be set at the level of reported commercial landings. MFish acknowledges that reported catch of stakes may underestimate actual catch. As noted, export markets for skates have been developed since the early 1990s, and there is no evidence of substantial quantities of skates being discarded in recent years.

40 MFish's preferred option in the IPP was to use the average catch of the ten fishing years from 1991-92 to 2000-01 as the basis for setting rough skate and smooth skate TACCs, apart from SSK 3. However, MFish now favours use of the average landings of the three most recent fishing years as reported catch is likely to be more accurate during these years and, therefore, this is the best available information to set TACCs.

41 The second option, using the average landings of the three most recent fishing years, would provide some flexibility for fishers to manage bycatch of rough skate and smooth skate associated with target fisheries, while at the same time preventing catch from expanding in the absence of information on sustainable yields. TACCs set at this level for rough skate and smooth skate are unlikely to have significant economic implications for commercial fishers as they are based on average commercial landings over the most recent 3 years, apart from the reduction proposed for SSK 3 (refer Table 3).

Table 3: Proposed customary and recreational allowances (tonnes), TACCs and TACs for rough skate (RSK) and smooth skate (SSK) stocks

Stock	Customary Allowance	Recreational Allowance	Other Sources of Fishing-Related Mortality	TACC	TAC
RSK 1	1	1	1	111	114
RSK 3	1	1	17	1653	1672
RSK 7	1	1	2	201	205
RSK 8	1	1	1	21	24
RSK 10	0	0	0	0	0
SSK 1	1	1	1	37	40
SSK 3 Option I	1	1	6	579	587
SSK 3 Option II	1	1	8	772	782
SSK 7	1	1	2	213	217
SSK 8	1	1	1	20	23
SSK 10	0	0	0	0	0

42 Allowing rough skate and smooth skate to be returned to the sea, by their inclusion into the Sixth Schedule of the 1996 Act (refer para 2), will also mitigate economic impacts on fishers during years when these species are caught as bycatch at higher than average levels.

43 MFish proposes two options for setting the TACC for SSK 3. The first option is a 25% reduction to the average landings of the three most recent fishing years. The second option is the average landings of the three most recent fishing years.

44 The first option is MFish's preference as it provides a greater chance that the SSK 3 stock will move towards a size that will support the MSY. However, it will have greater economic impacts on fishers. A reduction in smooth skate landings in SSK 3, by 25%, will likely result in fishers having to return this amount of catch to the sea, reducing commercial landings by 193 tonnes. Based on the current port price of $0.32 per kg ($320 per tonne), a 25% reduction in commercial landings of SSK 3 would amount to an economic loss to fishers of around $62 000.

45 The second option takes into account the lack of information to determine if catch levels in SSK 3 are sustainable, and SeaFIC's claim that recent catches are inconsistent with the declining relative biomass estimates and skate species are subject to large variations in catchability. However, if this second option is chosen, MFish is of the view that research is likely to be needed to assess and monitor the status of the SSK 3 stock in the near future. This research is likely to result in increased cost recovery charges.

46 As noted in the IPP, a substantial number of catch records of rough skate and smooth skate have used the general SKA code. The catch history recorded with the SKA code is to be apportioned under the rules based on the average proportion of RSK and SSK caught in trawl surveys, as outlined in Table 1 of the IPP, but modified according to fisher information supplied during the catch history objection and review process.

Summary

47 On balance, given the lack of scientific information on sustainable yields and the vulnerability of skates to overfishing, MFish has proposed that you set the TACs for rough skate and smooth skate at levels that will allow the stocks to move towards MSY based principally on historical landings from the three most recent fishing years and the Plenary's advice.

48 MFish proposes two options for setting the TAC for SSK 3. MFish prefers the first option, which is a 25% reduction to the average landings for the three most recent fishing years because this will increase the probability that the SSK 3 stock will move towards a size that will support the MSY. However, this option has greater economic costs for fishers.

Social, Cultural and Economic Factors

Submissions

Catch history

49 TOKM would like the introduction of rough skate and smooth skate into the QMS deferred for one year to allow management, reporting, and catch history problems for these two bycatch species to be sorted out. TOKM regrets that you have persisted with the separation of rough skate and smooth skate. TOKM considers that the costs of QMS entry and ongoing administration for both species outweigh any perceived benefits of QMS entry.

50 GBMFA note the flexibility MFish has shown to fishers in FMA 3 in adjusting the ratio of RSK to SSK in their catch histories. They request that a similar opportunity be provided to fishers in FMA 7.

51 SeaFIC acknowledges the initiative and commitment of MFish and industry stakeholders in adjusting the ratio of RSK to SSK for catch histories in FMA 3.

Closed areas

52 TRONT requests that areas be closed to commercial fishing where rough skate and smooth skate are considered to have kaitiaki status to Ngäi Tahu. TRONT proposes a regional liaison group approach, based on four key regions within the Ngäi Tahu whänui takiwä, for the identification of areas to be closed to commercial fishing of rough skate and smooth skate.

MFish Discussion

53 MFish is working with industry stakeholders to resolve reporting and catch history issues associated with the apportionment and misreporting of skates into rough skate and smooth skate. Adjustments have been made to some fishers' catch histories through the initial objection process and, more recently, through consideration by the Catch History Review Committee. MFish supports the adjustments made to the objections that have been upheld to date.

54 MFish considers that good progress has been achieved with resolving reporting and catch history issues and, therefore, there is no reason to delay the QMS introduction date of 1 October 2003.

55 MFish notes TOKM is concerned about the cost to industry of separating rough skate and smooth skate. MFish considers that there are sufficient differences in the biology of these two species of skates to warrant the separation. This will allow appropriate sustainability measures to be developed for each species in the future, if required.

56 MFish notes the submission from TRONT concerning closing areas where skate stocks have kaitiaki status to Ngai Tahu. Rapaki Mätaitai already has a prohibition on the taking of skates. MFish has recently discussed skate closures with some runaka.

Environmental Considerations

Submissions

57 No submissions regarding environmental considerations were received.

Other Management Issues

Submissions

58 GBMFA and TOKM support the CCL for skates and rays in FMA 3 being repealed.

MFish Discussion

59 Introduction of rough skate and smooth skate into the QMS will result in TACCs being set for these species. This CCL will then be redundant and must be revoked.

Legal Obligations

60 The statutory considerations that must be taken into account when setting the TACs and TACCs for rough skate and smooth skate were identified in the IPP (refer to IPP para 21-51). No additional information has come to hand regarding these considerations.

Conclusion

61 There is little stock assessment information available for rough skate and smooth skate stocks in New Zealand. In the absence of scientific stock assessment information, MFish proposes that TACs for skate stocks be based on the average landings of the three most recent fishing years, together with nominal allowances for recreational and customary interests and other sources of fishing-related mortality. MFish has used reported landing data to develop recommendations for TACs. The reported landings are the best available information, and probably reasonably reflect actual catches in recent years.

62 MFish believes that TACs (except for SSK 3) set at the level of average landings of the three most recent fishing years will move the stocks towards MSY while having regard to the interdependence of stocks. For SSK 3, an alternative TAC option is provided, which is 25% lower than the average landings for the three most recent fishing years. This is MFish's preferred option because it would provide greater surety that the SSK 3 stock will move towards the MSY, but would have economic costs for fishers.

63 There is no quantitative information on the current level of Mäori customary catch. Given the special significance skates have for Mäori, the customary catch is likely to be very low. MFish is proposing a nominal allowance for customary use.

64 Skates are not considered to be an important species to recreational fishers. MFish is proposing a nominal allowance for recreational use.

65 MFish is proposing nominal allowances for most skate stocks to allow for the small amount of other sources of fishing-related mortality associated with returning rough skate and smooth skate to the sea.

66 Setting skate TACs, allowances, and TACCs based on the average landings of the three most recent fishing years is unlikely to result in any further impacts on the ecosystem, on Hectors dolphins, and other marine mammals or seabirds.

Recommendations

67 MFish recommends that you:

a) **Agree** to set a TAC of 114 tonnes for RSK 1 and within that TAC set:

i) a customary allowance of 1 tonne;

ii) a recreational allowance of 1 tonne;

iii) an allowance for other fishing related mortality of 1 tonne; and

iv) a TACC of 111 tonnes.

b) **Agree** to set a TAC of 1672 tonnes for RSK 3 and within that TAC set:

i) a customary allowance of 1 tonne;

ii) a recreational allowance of 1 tonne;

iii) an allowance for other fishing related mortality of 17 tonnes; and

iv) a TACC of 1653 tonnes.

c) **Agree** to set a TAC of 205 tonnes for RSK 7 and within that TAC set:

i) a customary allowance of 1 tonne;

ii) a recreational allowance of 1 tonne;

iii) an allowance for other fishing related mortality of 2 tonnes; and

iv) a TACC of 201 tonnes.

d) **Agree** to set a TAC of 24 tonnes for RSK 8 and within that TAC set:

i) a customary allowance of 1 tonne;

ii) a recreational allowance of 1 tonne;

iii) an allowance for other fishing related mortality of 1 tonne; and

iv) a TACC of 21 tonnes.

e) **Agree** to set a TAC of 0 tonnes for RSK 10 and within that TAC set:

i) a customary allowance of 0 tonnes;

ii) a recreational allowance of 0 tonnes;

iii) an allowance for other fishing related mortality of 0 tonnes; and

iv) a TACC of 0 tonnes.

f) **Agree** to set a TAC of 40 tonnes for SSK 1 and within that TAC set:

i) a customary allowance of 1 tonne;

ii) a recreational allowance of 1 tonne;

iii) an allowance for other fishing related mortality of 1 tonne; and

iv) a TACC of 37 tonnes.

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g) **Agree** to set a TAC of 587 tonnes for SSK 3 and within that TAC set:

i) a customary allowance of 1 tonne;

ii) a recreational allowance of 1 tonne;

iii) an allowance for other fishing related mortality of 6 tonnes; and

iv) a TACC of 579 tonnes

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OR

Agree to set a TAC of 782 tonnes for SSK 3 and within that TAC set:

v) a customary allowance of 1 tonne;

vi) a recreational allowance of 1 tonne;

vii) an allowance for other fishing related mortality of 8 tonnes; and

viii) a TACC of 772 tonnes.

h) **Agree** to set a TAC of 217 tonnes for SSK 7 and within that TAC set:

i) a customary allowance of 1 tonne;

ii) a recreational allowance of 1 tonne;

iii) an allowance for other fishing related mortality of 2 tonnes; and

iv) a TACC of 213 tonnes.

i) **Agree** to set a TAC of 23 tonnes for SSK 8 and within that TAC set:

i) a customary allowance of 1 tonnes;

ii) a recreational allowance of 1 tonnes;

iii) an allowance for other fishing related mortality of 1 tonne; and

iv) a TACC of 20 tonnes.

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j) **Agree** to set a TAC of 0 tonnes for SSK 10 and within that TAC set:

i) a customary allowance of 0 tonnes;

ii) a recreational allowance of 0 tonnes;

iii) an allowance for other fishing related mortality of 0 tonne; and

iv) a TACC of 0 tonnes.

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k) **Agree** to set deemed values for the abovementioned rough skate (RSK) and smooth skate (SSK) stocks at $0.44kg.

SUMMARY OF RECOMMENDATIONS

Freshwater Eels – Chatham Islands

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1 MFish recommends that you:

a) **Agree** to set a TAC for SFE 17 (shortfin eels – *Anguilla australis* and Australian longfin – *A. reinhardtii*) at 15 tonnes. Within this TAC, set:

i) an allowance for customary interests of three tonnes;

ii) an allowance for recreational fishing of one tonne;

iii) an allowance for other sources of fishing related mortality of one tonne; and

iv) a TACC of ten tonnes.

b) **Agree** to set a TAC for LFE 17 (longfin eels – *A. dieffenbachia*) at three tonnes. Within this TAC, set:

i) an allowance for customary interests of one tonne;

ii) an allowance for recreational fishing of one tonne; and

iii) a TACC of one tonne.

c) **Agree** to set annual deemed values for the above mentioned Chatham Islands eel stocks of shortfin and longfin at $4.00/kg.

Kina – Northern New Zealand

2 MFish recommends that you:

a) **Agree** to set a TAC for SUR 1A of 172 tonnes and within that TAC set:

i) a customary allowance of 65 tonnes;

ii) a recreational allowance of 65 tonnes;

iii) an allowance of 2 tonnes for fishing related mortality; and

iv) a TACC of 40 tonnes.

b) **Agree** to set a TAC for SUR 1B of 324 tonnes and within that TAC set:

i) a customary allowance of 90 tonnes;

ii) a recreational allowance of 90 tonnes;

iii) an allowance of 4 tonnes for fishing related mortality; and

iv) a TACC of 140 tonnes.

c) **Agree** to set a TAC for SUR 2A of 204 tonnes and within that TAC set:

i) a customary allowance of 60 tonnes;

ii) a recreational allowance of 60 tonnes;

iii) an allowance of 4 tonnes for fishing related mortality; and

iv) a TACC of 80 tonnes.

d) **Agree** to set a TAC for SUR 2B of 102 tonnes and within that TAC set:

i) a customary allowance of 35 tonnes;

ii) a recreational allowance of 35 tonnes;

iii) an allowance of 2 tonnes for fishing related mortality; and

iv) a TACC of 30 tonnes.

e) **Agree** to set a TAC for SUR 8 of 26 tonnes and within that TAC set:

i) a customary allowance of 12 tonnes;

ii) a recreational allowance of 12 tonnes;

iii) an allowance of 1 tonne for fishing related mortality; and

iv) a TACC of 1 tonne.

f) **Agree** to set a TAC for SUR 9 of 33 tonnes and within that TAC set:

i) a customary allowance of 11 tonnes;

ii) a recreational allowance of 11 tonnes;

iii) an allowance of 1 tonne for fishing related mortality; and

iv) a TACC of 10 tonnes.

g) **Agree** to set a TAC for SUR 10 of 0 tonnes and within that TAC set:

i) a customary allowance of 0 tonnes;

ii) a recreational allowance of 0 tonnes;

iii) an allowance of 0 tonnes for fishing related mortality; and

iv) a TACC of 0 tonnes.

h) **Agree** to set deemed values for the above mentioned North Island kina stocks at $0.85/kg.

Leatherjacket

3 MFish recommends that you:

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a) **Agree** to set a TAC for LEA 1 of 203 tonnes, and within that TAC set:

i) a Mäori customary allowance of 1 tonne;

ii) a recreational allowance of 5 tonnes;

iii) an allowance of 9 tonnes for other fishing-related mortality; and

iv) a TACC of 188 tonnes.

b) **Agree** to set a TAC of 1196 tonnes for LEA 2, and within that TAC set:

i) a Mäori customary allowance of 1 tonne;

ii) a recreational allowance of 2 tonnes;

iii) an allowance of 57 tonnes for other fishing-related mortality; and

iv) a TACC of 1136 tonnes.

c) **Agree** to set a TAC of 108 tonnes for LEA 3, and within that TAC set:

i) a Mäori customary allowance of 1 tonne;

ii) a recreational allowance of 2 tonnes;

iii) an allowance of 5 tonnes for other fishing-related mortality; and

iv) a TACC of 100 tonnes.

d) **Agree** to set a TAC of 10 tonnes for LEA 4, and within that TAC set:

i) a Mäori customary allowance of 1 tonne;

ii) a recreational allowance of 1 tonne;

iii) an allowance of 1 tonne for other fishing-related mortality; and

iv) a TACC of 7 tonnes.

e) **Agree** to set a TAC of 0 tonne for LEA 10, and within that TAC set:

i) a Mäori customary allowance of 0 tonne;

ii) a recreational allowance of 0 tonne;

iii) an allowance of 0 tonne for other fishing-related mortality; and

iv) a TACC of 0 tonne.

f) **Agree** to set the annual deemed value for all leatherjacket stocks at $0.23/kg.

Rough Skate and Smooth Skate

4 MFish recommends that you:

a) **Agree** to set a TAC of 114 tonnes for RSK 1 and within that TAC set:

i) a customary allowance of 1 tonne;

ii) a recreational allowance of 1 tonne;

iii) an allowance for other fishing related mortality of 1 tonne; and

iv) a TACC of 111 tonnes.

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b) **Agree** to set a TAC of 1672 tonnes for RSK 3 and within that TAC set:

i) a customary allowance of 1 tonne;

ii) a recreational allowance of 1 tonne;

iii) an allowance for other fishing related mortality of 17 tonnes; and

iv) a TACC of 1653 tonnes.

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c) **Agree** to set a TAC of 205 tonnes for RSK 7 and within that TAC set:

i) a customary allowance of 1 tonne;

ii) a recreational allowance of 1 tonne;

iii) an allowance for other fishing related mortality of 2 tonnes; and

iv) a TACC of 201 tonnes.

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d) **Agree** to set a TAC of 24 tonnes for RSK 8 and within that TAC set:

i) a customary allowance of 1 tonne;

ii) a recreational allowance of 1 tonne;

iii) an allowance for other fishing related mortality of 1 tonne; and

iv) a TACC of 21 tonnes.

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e) **Agree** to set a TAC of 0 tonnes for RSK 10 and within that TAC set:

i) a customary allowance of 0 tonnes;

ii) a recreational allowance of 0 tonnes;

iii) an allowance for other fishing related mortality of 0 tonnes; and

iv) a TACC of 0 tonnes.

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f) **Agree** to set a TAC of 40 tonnes for SSK 1 and within that TAC set:

i) a customary allowance of 1 tonne;

ii) a recreational allowance of 1 tonne;

iii) an allowance for other fishing related mortality of 1 tonne; and

iv) a TACC of 37 tonnes.

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g) **Agree** to set a TAC of 587 tonnes for SSK 3 and within that TAC set:

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ii) a recreational allowance of 1 tonne;

iii) an allowance for other fishing related mortality of 6 tonnes; and

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Agree to set a TAC of 782 tonnes for SSK 3 and within that TAC set:

v) a customary allowance of 1 tonne;

vi) a recreational allowance of 1 tonne;

vii) an allowance for other fishing related mortality of 8 tonnes; and

viii) a TACC of 772 tonnes.

h) **Agree** to set a TAC of 217 tonnes for SSK 7 and within that TAC set:

i) a customary allowance of 1 tonne;

ii) a recreational allowance of 1 tonne;

iii) an allowance for other fishing related mortality of 2 tonnes; and

iv) a TACC of 213 tonnes.

i) **Agree** to set a TAC of 23 tonnes for SSK 8 and within that TAC set:

i) a customary allowance of 1 tonnes;

ii) a recreational allowance of 1 tonnes;

iii) an allowance for other fishing related mortality of 1 tonne; and

iv) a TACC of 20 tonnes.

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j) **Agree** to set a TAC of 0 tonnes for SSK 10 and within that TAC set:

i) a customary allowance of 0 tonnes;

ii) a recreational allowance of 0 tonnes;

iii) an allowance for other fishing related mortality of 0 tonne; and

iv) a TACC of 0 tonnes.

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k) **Agree** to set deemed values for the abovementioned rough skate (RSK) and smooth skate (SSK) stocks at $0.44kg.

John Taunton-Clark
For Chief Executive
Ministry of Fisheries

Rose Grindley
For Chief Executive
Ministry of Fisheries

APPROVED / NOT APPROVED

Hon Pete Hodgson
Minister of Fisheries

/ / 2003