

**Setting of Sustainability and Other Management Controls
for Scampi Stocks proposed for Introduction into the QMS
on 1 October 2004**

Final Advice Paper

23 August 2004

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INTRODUCTION

Purpose

- 1 This paper provides advice on scampi stocks to be introduced into the Quota Management System (QMS) on 1 October 2004. 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 this stock into the QMS on 1 October 2004 as part of its programme to introduce around 50 species by 1 October 2004.
- 3 The respective Quota Management Areas (QMAs), fishing years and units of measure for scampi stocks to be introduced into the QMS on 1 October 2004 were *Gazetted* in October 2003 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 2004

Species (code)	Quota Management Areas	Fishing year	Unit of measure
Scampi (SCI)	QMAs SCI 1, SCI 2, SCI 3, SCI 4A, SCI 5, SCI 6A, SCI 6B, SCI 7, SCI 8, SCI 9, SCI 10	1 October to 30 September	Greenweight

Initial Position Paper and Consultation

- 4 On 23 June 2004 an Initial Position Paper (IPP) was released that contains MFish's initial position on the proposed management measures for scampi stocks to be introduced into the QMS on 1 October 2004. MFish provided copies of the IPP to iwi, sector groups, and individuals and organisations considered to have an interest in scampi stocks being introduced into the QMS. MFish also provided a copy of the IPP to those who requested a copy.

Outline of Document

- 5 This paper provides you with MFish's **initial position** and **final advice and recommendations** on proposed TACs, TACCs, other allowances and management measures for scampi stocks to be introduced into the QMS on 1 October 2004.

- 6 This paper is structured so that the **Initial Position** section is followed immediately by the **Final Advice** section.
- 7 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 scampi stocks. This section is followed by another section from the IPP, titled Deemed Values and Overfishing Thresholds. The sections on the scampi then follow.

Implementation of Decisions

- 8 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.
- 9 A meeting has been scheduled on Thursday, 2 September to discuss the content of this document with you.
- 10 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, allowances and relevant regulatory amendments have been made scampi stocks being introduced into the QMS on 1 October 2004.

STATUTORY OBLIGATIONS AND POLICY GUIDELINES

Purpose of the Fisheries Act 1996

- 1 The purpose statement of the 1996 Act describes its overriding objective of providing for the utilisation of fisheries resources while ensuring sustainability. The 1996 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 the 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 1996 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 1996 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 (TAC)

- 5 Below the level of the purpose statement, the 1996 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 1996 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 (MSY) (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 1996 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 1996 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, 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 1996 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 1996 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 1996 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 harvesting 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 1996 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 1996 Act would be better achieved by setting a TAC other than in accordance with s 13 (ie, at or above MSY). Maintaining a stock above the level that ensures its long-term viability is consistent with the purpose of the 1996 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 1996 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 the biomass that will support the MSY (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 that 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 its long-term viability.
- 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.

Other statutory obligations applicable when setting a TAC

- 30 When setting a TAC, a number of generic provisions of the 1996 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 1996 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 1996 Act.

Environmental principles

- 32 The 1996 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 1996 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 1996 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 1996 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 1996 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 There is insufficient information available to undertake a systematic assessment of biodiversity for scampi stocks. No ecosystem, population, assemblage assessment has been undertaken in respect of scampi stocks. However, an assessment of the relevant 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 is 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 1996 Act, and the proposed exercise of powers under the legislation are consistent with New Zealand’s international obligations.
- 39 The 1996 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 1996 Act or the exercise of discretion, the decision maker must choose the option that is consistent with New Zealand’s 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 New Zealand fisheries waters 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 1996 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, Māori non-commercial fishing rights continue to give rise to Treaty obligations on the Crown.
- 42 The species-specific section in this document sets out information relating to customary interest. Consideration of an allowance for customary fishing has been made for each scampi stock on the basis of a qualitative assessment of that interest. The consultation process will provide Māori with an opportunity to comment on the

customary use and management of the stocks. Introduction of the species into 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 upon introduction into 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 section. MFish is not aware of any specific plans, statements or strategies that are relevant to scampi stocks. No fisheries plans have been approved to date. MFish is not aware of any 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 into the QMS is unlikely to involve implementation of measures on a non-regulatory basis.

Guidelines for setting TACs for new QMS 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 the 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 also be considered;
- The capacity for development of the stock – The 1996 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 B_{MSY} may provide for additional catch to be taken during the “fishing down” phase. In some instances stocks introduced into 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 the MSY;
- Important factors to be considered when considering development potential are that –
 - 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;
 - existing catch limits (Competitive Catch Limit (CCL) 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 CCLs may not be reflective of actual total landings for the species concerned;
 - development may be constrained by a lack of a review of a stock in the immediate future once introduced into the QMS due to competing priorities for review of other stocks;
 - a TAC may be set at a level that moves the stock over time towards a level that can produce the MSY (B_{MSY});

- 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; and
- 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 1996 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 Current Annual Yield or Maximum Constant Yield, 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 need 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 (CCL 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; and
- 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, upon introduction into 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 of scampi 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 for 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. These matters are best incorporated within stakeholder-driven initiatives following QMS introduction.
- 53 As a consequence of providing development opportunity above existing levels of utilisation, the TAC may not be fully caught immediately following QMS 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 (refer Table 2) 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 CCL 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 CCLs may not be reflective of actual total landings for the stocks concerned. CCLs 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.
- 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).

Table 1: Hierarchy of Information

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 (CCL or ICE)	Catch limit 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 catch limit or 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

- 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 (refer Table 3). In the absence of other information TACs may be set at levels based on consideration of known or estimated levels of recreational, Māori 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. After setting the TAC the Minister makes separate decisions about allocations for recreational, Māori customary and commercial catches and all other sources of fishing-related mortality.
- 60 In the absence of an estimate of sustainable yield from the fishery, or the presence of a robust and reliable catch limit or 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 on 1 October 1998. A fishery is considered “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 where 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.

- 61 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.
- 62 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.

Table 2: Criteria for determining catch levels and other sources of mortality

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 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 Māori above the level of recreational take	Catch level above the known recreational catch included
	No estimates but known to be of importance to Māori	Catch level similar to known recreational catch included
	No estimates but known customary catch (and stock of no particular importance to Māori)	Catch level half of known recreational catch included
	No known customary catch	No catch level included
Other Fishing-related Sources of Mortality	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

Analysis of TAC options

63 An analysis of different potential TAC options is undertaken in respect of stocks for which 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 undertaken. 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

- 64 The Minister is required to make allowances for different fishing interests under the 1996 Act. The Minister must have regard to the TAC and allow for:
- a) customary Māori non-commercial interests;
 - b) recreational fishers;
 - c) all other sources of mortality to the stock caused by fishing; and
 - d) the TACC.
- 65 In the absence of other information TACs may be set at levels based on consideration of known or estimated levels of recreational, Māori 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.
- 66 The allocation of the TAC is an important element of the QMS 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 QMS introduction process allocates quota 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 into 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 1996 Act, at a level above the extent of current catch.
- 67 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.
- 68 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.

- 69 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.
- 70 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 under caught. 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 Māori 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.
- 71 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

- 72 In some cases, estimates of recreational catches are available from recreational surveys. Where available, these estimates are included and used as the basis for setting the recreational allowance for stocks introduced into the QMS. Where estimates are not available, but there is known to be recreational catch, a nominal allowance is made. For species and stocks where there is no or negligible recreational catch, no allowance is made. In all instances, the allowances proposed also take 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.
- 73 Where appropriate, bag limits may need to be set for the stocks introduced into 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. 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 account 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.

Māori customary non-commercial allowance

- 74 There are no quantitative estimates of the size of Māori customary non-commercial catch for any of the scampi stocks. Generally, where estimates of customary catch of stocks are available from permits or authorisations under customary fishing regulations, that information is 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 is made. In some instances, the customary interest is considered to be greater than the level of recreational catch, and that can be reflected in the respective allowances. For stocks of importance to customary Māori the allowance is generally 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 Māori, 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. MFish notes that generally the allowance made for customary fishers is not intended to act as a constraint on the level of catch taken.

All other fishing-related mortality

- 75 No quantitative information is available to assess the level of all other fishing-related mortality applicable to scampi stocks or to attribute such mortality to a particular sector group. However, some level of mortality may occur as a result of the particular method used to exploit a stock. Where appropriate, MFish generally makes allowance for all other mortality to a stock caused by fishing. In addition, MFish proposes generally 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 (TACC)

- 76 The TACC for stocks introduced into the QMS is 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 catch limits or CCLs; or
 - b) average catch based on a “stable” or “developing” fishery category; or
 - c) potential development opportunity.
- 77 Where sustainability concerns exist as to the level of total landings, the TACC is modified appropriately. In all instances the TACC proposed also takes into account the generic factors identified above.
- 78 The 1996 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 stocks 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 2004. Technically this could be made available to foreign vessels through the Minister establishing a foreign allowable catch under s 81 of the 1996 Act. Practically, there may be limited interest in fishing small quantities of fish available to foreign vessels.

Other management controls

- 79 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 1996 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.
- 80 The species-specific section sets 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 section not to undertake a wide-scale review of all existing measures or potential measures that could be adopted. The ideal opportunity to discuss such issues will arise when quota is allocated to fishers and potentially within the context of developing fisheries plans. However, where necessary, consideration of appropriate measures, such as method restrictions, is outlined in the species-specific section.

Regulatory framework

- 81 The intent of the QMS 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 species will no longer be required following implementation of QMS management measures. The review of regulations prior to QMS introduction will ensure that regulations inconsistent with the QMS management are removed. Proposed amendments to regulations are included as annexes at the end of the species-specific section.

Setting of deemed values and overfishing thresholds

- 82 The following section of this document outlines the generic principles relating to the setting of interim and annual deemed values and the deemed values proposed for scampi upon introduction into the QMS on 1 October 2004. The section contains information on categories of stocks, determinants of market value and the setting of overfishing thresholds and tolerance levels.

DEEMED VALUES AND OVERFISHING THRESHOLDS

Introduction

- 1 This section sets out generic information on the setting of interim and annual deemed values and overfishing thresholds. The proposed deemed values for scampi are set out in Table 1 below. MFish notes that the approach to setting deemed values, as outlined in this document, is currently under review.

Deemed values

- 2 It is necessary to set deemed values for species being introduced into the QMS. The Fisheries Act 1996 (the 1996 Act), 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 1996 Act came into effect on 1 October 2001. The major elements of the new system are set out below.

Fisheries Act 1996 balancing regime

- 3 Under the 1996 Act, instead of it being a criminal offence to take catch in excess of quota, as under the Fisheries Act 1983, overfishing is controlled in the first instance by the application of graduated administrative disincentives (interim and deemed values). Non-payment of deemed values will lead to suspension of permits.
- 4 Section 75 of the 1996 Act establishes the basis for setting interim and annual deemed values. Sections 77, 77A and 78 provide the basis for imposing the second part of the administrative regime – overfishing thresholds.
- 5 In the new balancing regime, interim and annual deemed values must be set for all QMS stocks. 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.
- 6 The Minister of Fisheries has the responsibility for setting interim and annual deemed values by *Gazette* Notice under s 75 of the 1996 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. In addition, 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 or not the catch has or is likely to exceed the TACC; and

f) any other matters the Minister considers relevant.

- 7 Section 75(5) of the 1996 Act allows the Minister to set a different deemed value in respect of fish landed and received by a licensed fish receiver (LFR) at the Chatham Islands to a stock of the same species landed and received by a LFR elsewhere.

Annual deemed values

- 8 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

- 9 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).
- 10 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 1996 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.
- 11 The 1996 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 different deemed value rates may be set in respect of the same stock which apply to different levels of catch in excess of ACE. The 1996 Act further provides that the Minister must not have regard to the personal circumstances of any individual or class of people, or set separate deemed values in individual cases, when setting an individual or annual deemed value rate.
- 12 It is proposed to meet the Minister's obligation under s 75(3) by setting interim deemed values at 50% of the annual deemed value rate, for all stocks.

Categories of stocks

- 13 The policy framework for setting deemed values (approved by the Minister in 2001 and amended in 2003) separates commercial fisheries into four categories as follows:

High value single species fisheries fishstocks

- 14 High value single species fisheries fishstocks are those that have high port prices and ACE values and generally are taken with little, if any, bycatch. They include all stocks of spiny rock lobster, packhorse rock lobster, paua, oysters, eels and scallops.
- 15 Annual deemed values for species in this category will be set as follows:
- Initially, deemed values to be set at 200% of the highest port price in the previous year.
 - Increase by 20% each time total catch exceeds available ACE by more than 2% in one year or by more than 1% in two consecutive years.
 - Review to occur where the port price for a stock has changed significantly since deemed values were last set.
 - May be reduced if total catch does not exceed available ACE for several years.
 - Differential deemed values to be applied.

Low knowledge fishstocks

- 16 Low knowledge fishstocks are stocks for which there is relatively little information on the fishery status, and there are no sustainability concerns. Fishstocks in this category are to be reclassified into another category within five years or once MFish has more confidence in the TACC, whichever is the sooner.
- 17 Annual deemed values for species in this category will be set as follows:
- Initially, deemed values to be set as a proportion of port price in the previous year.
 - To be adjusted, as required, to encourage fishers to cover catch with ACE, and to land any catch in excess of ACE.
 - Differential deemed values not to be applied.

All other fishstocks

- 18 Fishstocks in the All Others category are those that do not necessarily have a high unit value, and for which there is adequate knowledge on which to base a TACC.
- 19 Annual deemed values for stocks in this category will be set as follows:
- Initially, the deemed value to be set at a proportion of the port price in the previous year.
 - Increase by 20% each time total catch exceeds available ACE by more than 10% in one year or by more than 1% in two consecutive years.
 - Review to occur where the port price for a stock has changed significantly since deemed values were last set.
 - May be reduced if total catch does not exceed available ACE for several years.
 - Differential deemed values to be applied.

Low/medium value bycatch fishstocks

- 20 This is a new category covering low/medium value stocks where the majority of catch is taken as a bycatch and for which the TACC is to be reviewed within the next few years. The category includes stocks introduced into the QMS in 1998 and in subsequent years (ie, cardinal fish, frostfish, pale and dark ghost shark, ribaldo, rubyfish, sea perch, trumpeter, white warehou and yellow-eyed mullet), and other by-catch stocks meeting the following criteria:
- The stock is principally a bycatch fishery;
 - Stocks are managed under s 13 of the Act;
 - There has been insufficient stock assessment information to justify an increase in the TAC through the normal stock assessment process;
 - Available information indicates there are no sustainability concerns. The information suggests an increase in the TAC may be appropriate;
 - Catch has exceeded the TAC in a manner that would trigger an increase in deemed values for all other fishstocks under the balancing regime guidelines;
 - The stock is not currently managed under the AMP framework; and
 - There has been no TACC increase for the stock for at least three years as a result of a review of management controls.
- 21 Deemed values will be set in the same manner as stocks in the “All Others” category except that, as an interim measure, MFish is proposing not to apply differential deemed values to those stocks until the review of the TACC is undertaken.

The determination of the ‘market value’ for stocks

- 22 Deemed values are initially set as a proportion of the value of the stock. A range of values, including the port price, wholesale price, export price and retail price, can represent a stock’s 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 the 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.
- 23 For most of the stocks gazetted for QMS introduction on 1 October 2004, MFish has relied on port prices determined from two recent surveys of licensed fish receivers. The first was carried out early in 2003 and the second in November/December 2003.
- 24 In circumstances where MFish has no port price information on which to base a deemed value, it has used an estimated or nominal port price/deemed value.

- 25 MFish proposes initial deemed values for stocks as a percentage of the port price as follows:
- 200% of the highest port price for high value singles species fisheries fishstocks;
 - 60% of the port price for low knowledge fishstocks; and
 - 75% of the port price for all other fishstocks.

Scampi stocks for QMS introduction on 1 October 2004

- 26 The following section of this paper contains a discussion of the proposed deemed values for scampi stocks proposed to enter the QMS from 1 October 2004. Table 1 summarises that information, setting out the proposed category for scampi (high values single species fisheries fishstock), the port price, the percentage of the port price, the annual deemed value and whether or not differential deemed values and overfishing thresholds apply.

Table 1: Proposed categories, annual deemed values, differential deemed values and overfishing thresholds for scampi stocks to be introduced into the QMS on 1 October 2004 (2004-05 fishing year)

Species (all stocks)	Category	Port Price (\$/kg)	Proposed % factor	Proposed Annual Deemed Value (\$/kg)	Differential Deemed Value (Y/N)	Overfishing threshold / tolerance (Y/N)
Scampi (SCI)	High value	25.65*	200	51.30	Y	N

* Average of port prices for SCI in FMAs 3, 4, 6A and 6B from 2004 survey.

Consultation

- 27 Industry participants are invited to make submissions in respect of the proposed deemed values for the stocks set out in Table 1.

Differential deemed values

- 28 The Act provides that the Minister of Fisheries may set different deemed value rates in respect of the same stock, which apply to different levels of catch in excess of ACE. A differential deemed value rate will apply only to the amount of catch above the threshold that triggers the differential annual deemed value. Differential annual deemed values apply to the individual fisher rather than for the fishery as a whole. The policy framework specifies that differential annual deemed values only apply to those stocks categorised as “high value single species” and “all other fishstocks”, not those categorised as “low knowledge”.
- 29 The regime set out in Table 2 below, approved by the Minister of Fisheries, will apply to all stocks to be introduced into the QMS on 1 October 2004 for which differential deemed values are to be used (refer Table 1). Differential deemed values are promulgated by *Gazette* Notice.

Table 2: Differential Annual Deemed Values

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

Overfishing thresholds

- 30 Overfishing thresholds (ss 77, 77A and 78 of the 1996 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.
- 31 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.
- 32 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 fisheries fishstocks", a "low knowledge fishery" or "All other". At least initially, only "high value single species fisheries fishstocks" introduced into the QMS on 1 October 2004 will be subject to overfishing thresholds.
- 33 Table 1 indicates whether or not an overfishing threshold is proposed for scampi stocks to be introduced into the QMS on 1 October 2004.

Consultation

- 34 Industry participants are invited to make submissions in respect of the proposal to set fishing thresholds or tolerances.

Preliminary recommendations

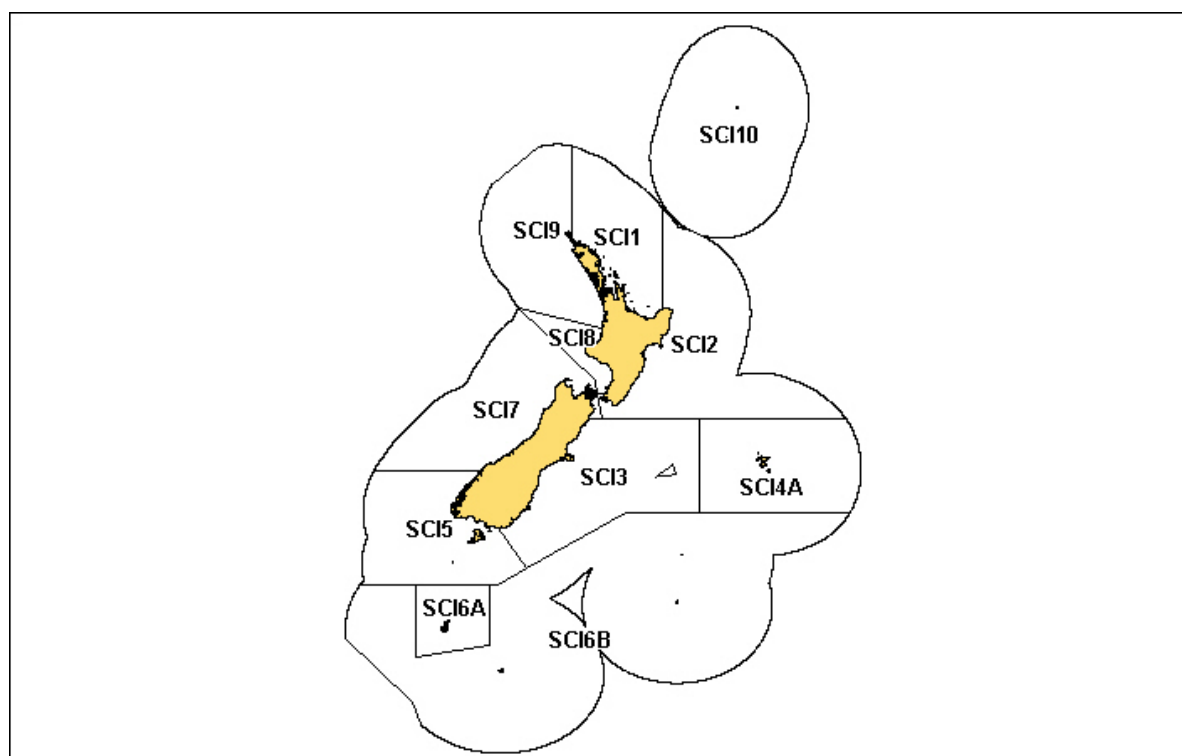
- 35 MFish recommends that the Minister:
- Notes** the preliminary (subject to consultation) annual deemed values for scampi proposed for QMS entry from 1 October 2004, as set out in Table 1;
 - Notes** that differential deemed values will apply to scampi as per the *High Value Single Species Fisheries Fishstocks* category, as set out in Table 1; and
 - Notes** that overfishing thresholds/tolerances are not proposed for scampi at this time.

SCAMPI (SCI) – INITIAL POSITION PAPER

Introduction into the QMS

- 1 Scampi (*Metanephrops challengeri*) stocks are proposed for introduction into the QMS on 1 October 2004 by way of an amendment to the Fisheries Act 1996 ('the Act'). The Quota Management Areas (QMAs) for scampi are defined in the proposed amendment (as shown in Figure 1). The proposals are that the fishing year for scampi is to be from 1 October to 30 September, and the total allowable commercial catches (TACC) and annual catch entitlements (ACE) are to be expressed in terms of kilograms greenweight.
- 2 This section of the paper sets out the initial proposals for TACs, allowances, and TACCs to apply when scampi stocks are introduced into the QMS on 1 October 2004. Should scampi stocks not be brought into the QMS on that date, MFish will consider reviewing the catch limits and commercial catch limits for scampi based upon the information contained in this paper.

Figure 1. Proposed QMAs for scampi stocks.



Key Issues to be considered

- 3 MFish considers the key issues that relate to the decisions for setting sustainability measures for scampi stocks are as follows:

- 4 Scampi fisheries in all areas have been controlled by commercial catch limits since the 1991-92 fishing year, and the limits in FMAs 1, 2, 3, 4, 6 and 7 have remained the same since – revised limits for FMAs 5, 8, and 9 were set for the 1999–00 year, and have remained at those levels since;
- 5 Currently there is no robust quantitative stock assessment for any scampi stock and it is not known if recent catches and current catch limits are sustainable in the long term or will allow the stocks to move towards a size that will support the maximum sustainable yield;
- 6 The available information suggests that sustainability concerns might have arisen in FMA 2, and management action might be required; and
- 7 Scampi trawl catches can be characterised by a large proportion of bycatch species, and there is some scientific evidence of adverse effects of scampi trawling, mitigated by the spatially discrete nature of the fishery and constraints on catch.

List of Management Options

- 8 MFish proposes that the management arrangements under s 13 of the Act are appropriate for scampi.
- 9 MFish proposes setting TACs, TACCs, and allowances for scampi stocks as outlined below. Two alternative options are proposed for SCI 2. Single options are proposed for all other stocks.

Table 1. Proposed TACs, TACCs, and allowances for scampi (tonnes greenweight).

10	11	Stock	12	TAC	14	Customary	16	Recreational	17	Other	21	TAC
22	23	S	24	1	25	0	26	0	27	6	28	1
29	O	S	31	2	32	0	33	0	34	12	35	2
36	O	S	38	2	39	0	40	0	41	10	42	2
43		S	45	3	46	0	47	0	48	17	49	3
50		S	52	1	53	0	54	0	55	6	56	1
57		S	59	4	60	0	61	0	62	2	63	4
64		S	66	3	67	0	68	0	69	15	70	3
71		S	73	5	74	0	75	0	76	3	77	5
78		S	80	7	81	0	82	0	83	4	84	7
85		S	87	5	88	0	89	0	90	0	91	5
92		S	94	3	95	0	96	0	97	2	98	3
99	100	S	101	0	102	0	103	0	104	0	105	0

- 10 Additional management controls are proposed, including:
 - a) Setting deemed values and applying differential deemed values;
 - b) Amending reporting regulations to specify the required Fishstock codes and quota management areas for scampi; and

- c) Promulgating regulations to replace the authority provided by fishing permit conditions to use smaller net mesh when scampi trawling.

TACs

TAC management strategy

- 11 Section 13 of the Act represents the management option that is to be applied when setting a TAC for a QMS stock, unless the stock size is considered to be highly variable from year to year, or qualifies for management under the criteria outlined in s 14 or s 14A of the Act.
- 12 MFish does not consider that scampi stock sizes are highly variable from year to year. In order for a stock to be added to the Third Schedule under the provisions of s 14, the biological characteristics of the species must prevent the estimation of the maximum sustainable yield (MSY), the catch limit for the stock must have been determined as part of an international agreement, or the stock must be managed on a rotational or enhanced basis. Scampi stocks do not meet any of those criteria. Section 14A 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 based on B_{MSY} . MFish does not consider that s 14A is applicable to scampi fisheries because:
- Scampi is a valuable target species and management to ensure long-term viability will not produce the maximum sustainable yield over time;
 - Scampi target catches are usually relatively small in proportion to the bycatch quantities of QMS finfish species (hoki, ling, gemfish are the top three which in turn support valuable target fisheries) and scampi catch does not constrain those finfish fisheries; and
 - Of the potential for adverse effects on the aquatic environment.
- 13 MFish believes that the s 13 management arrangements are appropriate for scampi. Under s 13 there is a requirement to maintain 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.
- 14 There are no reliable estimates of virgin biomass (B_0) or the biomass that will support the MSY (B_{MSY}) for any scampi stock. MFish considers that the general objective under s 13 is to maintain scampi stocks at or above the B_{MSY} level, at least until reliable information becomes available.
- 15 As outlined in the Statutory Obligations and Policy Guidelines section there are guidelines for setting TACs for new species. Among the more important considerations for scampi are the levels of current utilisation and the current commercial catch limits, available fishery performance and stock assessment information, the biological and fishery characteristics of the stock, implications for interdependent stocks and the environment.

Rationale for the proposed TACs

- 16 Policy guidelines have constructed a hierarchical approach to using the available information for setting TACs and hence the weighting to be assigned to that information. Stock assessment information is afforded greater weight than a non-QMS catch limit set for the stock. A CCL may be afforded greater weight than information about historical and current catch levels.
- 17 The “Report from the Fishery Assessment Plenary, May 2004” (Annala et al. 2004) states that there are no reliable estimates of virgin biomass (B_0) or the biomass that will support the MSY (B_{MSY}) for any scampi stock. Estimates of relative abundance of scampi have been obtained in the past from the results of standardised and unstandardised CPUE analyses and random stratified trawl surveys. However, the use of these indices in stock assessments has been questioned because of concerns that changes in these indices may be strongly influenced by changes in catchability caused by the behaviour of scampi rather than by changes in abundance.
- 18 The Shellfish Fishery Assessment Working Group has concluded that photographic techniques currently offer the best opportunity for estimating the abundance of scampi. To date, five photographic surveys of scampi grounds have been carried out in FMA 1, one survey has been completed in FMA 2, and two surveys have been undertaken in FMA 3. It is not known whether CPUE or abundance estimates from trawl surveys or photography are reliable indices of scampi abundance.
- 19 In the absence of stock assessment information, the current CCLs form the basis for determining the proposed TACs. The level of Maori customary take or recreational take is probably non-existent, so no contribution for non-commercial catch is included. CPUE and photographic survey information are used to evaluate the performance of the fisheries and stocks, and identify whether or not fishing at the current CCLs has given rise to sustainability issues, or if there is scope for greater utilisation.
- 20 The 2004 Plenary Report states that for FMAs 1, 2, 3, 4, 6A, and 6B, it is not known if recent catches and current catch limits are sustainable in the long term, or will allow the stocks to move towards a size that will support the maximum sustainable yield. Little or no fishing has been reported from the other stocks.
- 21 Commercial catch limits have applied to the fishery since the 1991–92 fishing year. An interim management regime established limits for the 1991–92 fishing year for scampi in FMAs 1 to 9. Those limits were revised for the 1992–93 year, and remained the same until 1999. Limits for FMAs 5, 8, and 9 were reduced for the 1999–00 fishing year in accordance with what was then considered to be the best information about the likely abundance and yields of scampi in those areas (inferred from the spatial extent of scampi habitat in each area). Little or no directed scampi fishing has been done in those areas since.
- 22 The catch limits that applied until 1999–00 were set on the basis of the estimation techniques considered to be appropriate in the early 1990s. Sustainable yields were calculated for scampi in FMAs 1 and 2, after the initial period of fishing. The basic technique was to estimate the virgin stock size before fishing (B_0) from a linear regression of CPUE against catch (depletion analysis). Theoretically, all the original

biomass has been caught when CPUE declines to zero. A range of indicative maximum constant yields (MCY) for scampi in areas 1 and 2 were estimated from the virgin stock biomass estimates, taking into account the available information on the productivity of scampi. Because of uncertainty in much of the information, caution was applied in the choice of estimates, and those used to set the catch limits were thought to be conservative. The probable estimates were 100 to 130 tonnes for SCI 1, and 180 to 260 tonnes for SCI 2. The current catch limits of 120 and 240 tonnes respectively were set for SCI 1 and 2 for the 1991–92 year, and have been retained since.

- 23 Scampi fishing in other areas had been inadequate to use the same techniques in the early 1990s. Instead, estimates of the sustainable yields for areas 3 through 9 were determined by pro-rating the yield estimate for area 1 according to the proportions of scampi habitat (the preferred depth range from 200 to 500 metres) in each area relative to area 1. Catch limits for areas 3, 5, 8, and 9 were set above the estimated yields (25, 40, 5, 35 tonnes respectively) because policy at the time was to not reduce limits below a minimum of 60 tonnes.
- 24 When reviewing the catch limits in 1999 under the provisions of the 1996 Act, the estimates referred to above were considered to provide the best available information on sustainable yields for scampi in areas 5, 8, and 9. The limits for scampi in areas 5, 8, and 9 were revised accordingly.
- 25 Photographic methods have provided encouraging results to date for areas 1, 2, and 3^{1,2}. However, there is still uncertainty in the results, and, while they provide useful information for comparative purposes, they do not yet supplant the estimates of yield used as the basis for current CCLs.
- 26 Before setting or varying the TAC (or any sustainability measure) the Minister is required (under s 11) to take into account any effects of fishing on any stock and the aquatic environment, existing controls that apply to the stock, and the natural variability of the stock concerned.
- 27 Scampi vessels use relatively light bottom trawl gear, and the physical effects of scampi trawling on bottom sediments have been shown (from photographic surveys of intensively fished areas in the Bay of Plenty) to be relatively minor. However, data collected from trawl surveys in the Bay of Plenty area have suggested that trawling may have modified the benthic community structure there. The observed differences in community structure between sites with a wide contrast in their histories of scampi trawling are consistent with the predicted and observed effects of bottom-contact fisheries worldwide, and so are not necessarily cause for surprise or concern. Trawl fisheries for other target species also fish those grounds.
- 28 Scampi trawl gear is usually deployed as multiple rigs of two or three nets, and a very low headline height. Although the low headline is designed to reduce non-scampi

¹ Cryer et al. 2003 – “Indices of relative abundance for scampi, *Metanephrops challengeri*, based on photographic surveys before and after fishing in QMA 3, 2001”; Final Research Report for Ministry of Fisheries project SCI2000/02.

² Cryer et al. 2003 – “Indices of relative abundance for scampi, *Metanephrops challengeri*, based on photographic surveys in QMA 1 (1998-2003) and QMA 2 (2003)”; Final Research Report for Ministry of Fisheries project SCI2000/01.

bycatch, scampi typically form a relatively small proportion of the total catch in scampi target trawls. The total QMS finfish species taken in scampi trawls can make up from 33 % to 400 % of the catch by weight. Some of the main QMS species taken are hoki, ling, and gemfish, all of which are also important commercial species, taken at similar depths by other target trawl fisheries. Early concerns were raised that the small mesh size used to take scampi would result in large bycatch quantities of juvenile QMS species. However, information observed from the scampi fishery suggests that the size range of QMS species taken in scampi trawls is generally similar to that taken in other trawl fisheries operating in the same areas (using standard mesh size). The catch of QMS species is required to be balanced against ACE, and there is currently no information to suggest that the proposed TACs and TACCs for scampi would result in the TACCs for bycatch species being exceeded. There is no known significantly adverse effect of scampi fishing on the species taken as bycatch in any stock.

- 29 Varying quantities of non-QMS species are taken as a bycatch of scampi trawling. Some species have commercial value and are retained to varying degrees. There is a high level of discarding of some non-QMS species, and catch reporting is unlikely to provide adequate information to assess trends in the catch of non-QMS species. The mortality of discarded fish is likely to be high given the depths of scampi fishing.
- 30 MFish considers that there is a need for fishers to investigate ways to further reduce bycatch in the scampi fishery, and to reduce wastage by retaining and landing a greater proportion of bycatch than is current practice.
- 31 In summary, scampi trawlers share common fishing grounds with other finfish target trawl fisheries. There is currently no information to confirm that there are effects of fishing on the aquatic environment that are uniquely associated with scampi trawling as opposed to other target trawl fisheries that share the same grounds. Limiting scampi catch by setting TACCs not only constrains commercial catch to sustainable levels, but also serves to constrain the potential for adverse effects on the aquatic environment. In general, setting higher catch limits will increase any adverse effects of fishing.
- 32 There are several existing controls that apply to the scampi fishery. Catch limits (CLs) and commercial catch limits (CCLs) apply to scampi in management areas 1 to 5, 6A and 6B, and 7 to 9. CCLs in areas 1, 2, 4, and 6A were individually allocated as individual catch entitlements (ICE) until October 2001. ICE were set aside by the Court of Appeal, and all CCLs have been fished competitively since October 2001. The vessels authorised to fish for scampi were also specified, as conditions on permits, until the 1999–00 year when vessel restrictions were removed.
- 33 Current scampi fishing permits contain conditions authorising the use of 80 mm mesh in the body and 55 mm mesh in the cod-end of trawl nets used to take scampi (the standard mesh for trawls is 100 mm). MFish proposes to continue that authority by regulation, and remove it from permits once scampi enters the QMS.
- 34 Scampi stocks are not known to have highly variable biomass, and there is no information to suggest that the natural variability of any scampi stock requires particular consideration in determining a TAC.

- 35 When setting the TAC under s 13 to achieve the target stock level, the Minister is required to have regard to the interdependence of stocks, the biological characteristics of the stock, and any environmental conditions affecting the stock.
- 36 The relationship between scampi and any interdependent species in any stock is not well known. Scampi are preyed upon by finfish species, and in turn scampi probably scavenge on dead finfish. As described above, there is no known significantly adverse effect of scampi fishing on the species taken as bycatch in any stock. MFish considers that the available information does not suggest there are concerns for the interdependence of stocks under the TACs proposed for scampi.
- 37 The biological characteristics of scampi include that they are burrowing animals, and hence relatively sedentary. They have a short larval stage (days) that suggests management as discrete stocks is appropriate. Those characteristics also suggest that fishing can serially deplete stocks, and the effects on CPUE of changes in the spatial distribution of fishing should be considered. New Zealand scampi have relatively low fecundity compared with other scampi species, and a rebuild from a depleted state would be slow. Those characteristics are taken into account in the proposals for TACs outlined below.
- 38 There is no information available regarding specific environmental conditions affecting scampi that should be taken into account in the proposed TAC levels for scampi stocks.
- 39 All mortality to a stock caused by fishing must be included within the TAC for a stock. It is likely that there are unaccounted sources of fishing-related mortality on scampi, given that they are taken by trawling, both as a target species and as a bycatch when targeting finfish species on the same fishing grounds. Fishing-related mortality is likely to include incidental effects of trawl gear on the animals and their habitat, and the death of scampi discarded (as noted in the 2004 Plenary Report). Some scampi will become stuck in the mesh of the nets, and will be crushed. Scampi that suffer physical damage in the catching process will have a reduced market value, and might be discarded or eaten on board the vessels.
- 40 Incidental fishing-related mortality on scampi stocks generally will have been occurring since the advent of trawling on grounds where scampi are found. Target trawling for scampi since the fishery began will have added to the sources of fishing-related mortality. Those unaccounted removals from the respective scampi stocks will have occurred at the same time as the target removals over the history of the fishery. The measures of performance of the fisheries (such as CPUE) will include the effects of such removals. In the absence of specific estimates of sustainable yield to determine the TAC for any scampi stock, MFish proposes that the allowance for other sources of fishing-related mortality be added to the TACC in order to estimate the TAC.
- 41 There is no quantitative information on the level of other sources of mortality. There is no quantitative information on the level of illegal catch. MFish proposes that an amount of approximately 5 % of the CCL for each QMA is included as a contribution to account for other sources of fishing-related mortality in estimating the TACs.

- 42 Section 9 of the Act requires that decision makers take into account the specified environmental principles. The first principle is that associated or dependent species should be maintained above a level that ensures their long-term viability. There is limited information available to inform an assessment of the effects of scampi trawling on the disturbance, capture, and discard of associated or dependent (non-harvested) species. Discarded species are unlikely to survive given the depths of scampi fishing. However, the available information does not suggest there to be significantly adverse implications for associated or dependent species that are unique to scampi fishing.
- 43 The second principle requires that biological diversity of the aquatic environment be maintained. Scampi fishing occurs in relatively discrete areas within overall stock boundaries, and the effect of the fishery on the maintenance of biodiversity is considered to be limited to those areas. The exact impact of scampi trawling on benthic communities is not known, however, MFish considers that it is unlikely that scampi fishing at the proposed TAC/TACC levels will adversely affect the maintenance of biodiversity within the overall area of respective stock boundaries.
- 44 The third environmental principle is that habitat of particular significance for fisheries management should be protected. No such habitats are known to have been identified within scampi fishing areas. Scampi fishing occurs on grounds commonly shared by trawlers targeting other species. There is no information to confirm that there are effects of scampi fishing on habitat that are unique to scampi trawling as opposed to trawling for other species.

SCI 1

- 45 MFish proposes to set a TAC for SCI 1 of 126 tonnes, based on the commercial catch limit that has applied since 1992–93. An amount of 6 tonnes is proposed to be added to the CCL to account for other sources of fishing-related mortality, in contributing to the make-up of the TAC.
- 46 Total landings between 1992–93 and 2002–03 varied between 107 tonnes and 121 tonnes. 118 tonnes was landed in the average fishing year.
- 47 After the start of the fishery, CPUE declined to 1991–92, then increased to a peak in 1995–96. There has been an overall decline in CPUE since 1995–96, with the lowest CPUE recorded in 2000–01 and 2001–02. In 2002–03, CPUE increased again to about 150 % greater than in 2001–02. The 2002–03 catch rates were 70 to 80 % of those recorded in 1988–89, and comparable with the early period of the fishery.
- 48 The geographical area of scampi fishing within FMA 1 is confined largely to the western Bay of Plenty, and has changed little through the 1990s. There is some indication of fishing in shallower areas since 2000–01, when individual catch entitlements were set aside and the fishery became competitive. Competition might create the incentive to fish closer to port.
- 49 Photographic methods have been used to estimate the abundance of scampi and their burrows in the main area of the scampi grounds within FMA 1 since 1998. The density (number per unit area) of scampi actually visible in the images in the main fishery area decreased by over 50 % between 1998 and 2001, and remained similar

through to 2003. This corresponds with patterns in commercial CPUE and research trawl catch rates. The density of major scampi burrow openings showed no clear trend between 1998 and 2003, however, the 1998 index was the highest and the 2003 index the lowest. That pattern is not the same as that of commercial CPUE or research trawl catch rates. The density of visible scampi can be used to estimate the absolute minimum biomass of scampi present, using an estimate of mean scampi weight. However, the estimate is likely to be conservative, because not all scampi will be out of their burrows and visible at all times. Conversely, the density of burrows might not provide a conservative estimate of abundance, because the occupancy rate and longevity of burrows (if vacated) is not known.

- 50 Catches at the level of the existing CCL (120 tonnes) represent a substantial portion of the minimum absolute biomass (12 % to 28 % over the six years, and about 24 % in 2003). However, those estimates are likely to be conservative, and it is known that scampi habitat exists within FMA 1 outside the main area of the fishery, and scampi have been caught there. The biomass estimates derived from estimates of major burrows and mean average scampi size suggest that fishing is taking quite a small portion of the biomass (about 2 % to 4 % the total biomass). Those estimates of scampi biomass might not be conservative.
- 51 On balance, it appears from the best available information that there are no clear indications of either a sustainability concern, or the potential for greater utilisation in FMA 1 at this time.

SCI 2

- 52 MFish proposes two options for a TAC for SCI 2:
- Option 1 is to retain the status quo and set the TAC at 258 tonnes, including a contribution of 12 tonnes for other sources of fishing-related mortality; and
 - Option 2 is to reduce the allowable catch by approximately 20 % in light of sustainability concerns, and set the TAC at 210 tonnes, including a contribution of 10 tonnes for other sources of fishing-related mortality.
- 53 Total landings between 1992–93 and 2002–03 varied between a peak of 247 tonnes in 2001–02, and a minimum of 134 tonnes in 2002–03. Approximately 210 tonnes was landed in the average fishing year.
- 54 Commercial CPUE declined after the start of the fishery until 1993–94, increased to 1994-95, and has declined steadily since. Unstandardised CPUE in 2002–03 was about 37 % of that in the 1988–89 year, and the lowest ever recorded (including all vessels).
- 55 Since 1999–00, the CCL was reached only in 2001–02. Landings were only 134 tonnes in 2002–03. Fishing effort (measured as number of tows) reached a peak in 2001–02 after fishing became competitive, but declined to about half that level in 2002–03.
- 56 The fishery is concentrated on two main grounds off Napier and the Wairarapa coast. The area and depth range fished has remained relatively consistent since 1988–89.

- 57 The first photographic survey was done in the core area of the fishery in 2003. The overall density of major burrow openings was about 20 % less than in FMA 1. That estimate was strongly affected by very low density in most of the Hawke Bay area. The 2003 near-minimum biomass estimate from visible scampi in the core area (using the mean average size of scampi from FMA 1) was 355 tonnes, or about 70 % of the FMA 1 estimate. That estimate is likely to be conservative. Catch at the level of the current CCL of 245 tonnes would represent extraction of about 69 % of the near-minimum biomass (compared with less than 30 % extraction in area 1). The 2003 biomass estimated from burrow openings was about 5 583 tonnes, or about 154 % of the comparable biomass estimate for FMA 1. Taking the current CCL would remove about 4 % of the total biomass, but that estimate might not be conservative.
- 58 Although the available information is uncertain, there is a combination of factors that might indicate a sustainability concern in FMA 2. Commercial CPUE has declined to its lowest-ever level, and effort appears to have been withdrawn from the fishery as a result of poor catch rates. The catch rate in FMA 2 has declined to about 10 kg/h (in 2001–02 and 2002–03), which is less than half the recent scampi catch rate in the adjacent FMA 1 (and FMAs 3, 4, and 6A). Until the late 1990s, catch rates in FMA 2 varied within a similar range to those in FMA 1. Total scampi landings from FMA 2 have reached the CCL in only one year (2001–02) since 1991–92, and that was the first year of competitive fishing. Total scampi landings in FMA 2 in 2002–03 reached 54 % of the CCL. Photographic methods indicate that the near-minimum biomass estimate in FMA 2 was lower than for FMA 1, and the overall density of burrow openings was lower than in FMA 1. Based on the minimum biomass estimates and current catch limits, the exploitation rate in area 2 would be more than twice that in area 1.
- 59 The information principles in s 10 of the Act require the Minister to consider any uncertainty in the information provided and to exercise caution when faced with uncertain, unreliable, or inadequate information. It is not known if recent catches and the current catch limit for scampi in FMA 2 are sustainable in the long term or will allow the stock to move towards a size that will support the maximum sustainable yield. It is also not known if CPUE or photographic surveys provide reliable indicators of relative abundance in any scampi stock. However, the combination of information described above suggests a reasonable probability that the stock has been declining. The Minister is required to balance the risks to both the utilisation and sustainability objectives of the Act when exercising caution in the use of uncertain, unreliable, or inadequate information.
- 60 **Option 1** - The poor catch rates and voluntary re-direction of fishing effort to other FMAs have served to mitigate short-term sustainability concerns to some extent. Setting the TAC based on the current CCL as proposed in Option 1 would recognise that reliable stock status and yield estimates are not available, and favour possible utilisation outcomes in the short term. There is a greater potential risk to the sustainability of the stock, and long-term utilisation outcomes, under Option 1 if the stock has declined to a low level. Further catches at the level of the current CCL could continue the decline of the stock below the s 13 target level. The level of risk will not be better understood until new, reliable information on abundance and yield is available (probably from future photographic surveys). Such information is not likely to be available for at least a few more years. Research is required to improve our

understanding of the relationship between scampi burrows that can be seen in photographs, and the proportion of those burrows that might be occupied by scampi, if the photographic method is to deliver estimates of total abundance. Given the depth at which scampi occur, the research problem is likely to take a few years more to solve, and the potential risks to the stock could continue.

- 61 **Option 2** – This option recognises the likelihood that the stock has declined, and places more emphasis on ensuring sustainability in the shorter term. The option recognises the shortcomings in the available information, but also that the available information does suggest an immediate sustainability concern. The new information from photographic methods does not support retaining the current catch limit for area 2 at a level twice that for area 1. Rather, the available information suggests that the fishery in area 2 is more likely to be of a similar scale to that in area 1. Option 2 proposes the first step in a phased reduction of the TAC to align more closely with that for area 1 over time, unless new information suggests otherwise. Although reliable estimates of stock status and potential yield are not available to guide the setting of a TAC, a reduction in the catch limit for 2004–05 will serve to reduce the rate of any stock decline, perhaps stabilise the stock, or allow for a rebuild. Those are outcomes that align well with the Minister’s obligations under s 13 to maintain at or move stocks towards or above the B_{MSY} level. Further, any rebuilding is likely to improve catch rates and enhance utilisation benefits in the longer term. For those reasons, MFish favours Option 2.

SCI 3

- 62 MFish proposes a TAC for SCI 3 of 357 tonnes based largely on the sum of the current CCLs for scampi in FMAs 3 and 4 that contribute to the SCI 3 QMA. The CCLs for scampi in FMAs 3 and 4 are 60 tonnes and 250 tonnes respectively. The proposed TAC includes a 10 % increase to recognise the available information that suggests additional yield is likely to be sustainable, and an allowance for fishing-related mortality at 5 % of the proposed TACC.
- 63 The SCI 3 QMA, as proposed in the Fisheries Amendment Bill (No 3) (the ‘Bill’) currently before Parliament, includes all of FMA 3 and that part of FMA 4 lying to the west of the 180° meridian (see Figure 1). Scampi fishing effort and catches in FMA 4 have been concentrated predominantly within the western part of the area, adjacent to the FMA 3 boundary. For some years, FMA 4 also has been informally separated at the 180° meridian for stock monitoring purposes. For those reasons, MFish proposes that the starting point for setting the TAC for SCI 3 be the sum of the current CCLs for FMAs 3 and 4.
- 64 Total scampi landings from FMA 3 for each fishing year between 1992–93 and 2002–03 varied between 60 tonnes and 84 tonnes. The average total landing per fishing year over that period was 72.8 tonnes. The CCL in FMA 3 always has been fished competitively, and the CCL has been reached generally within the first few weeks of the fishing year.
- 65 After initial exploration in 1988–89, the fishery concentrated on the northeastern slope of the Mernoo Bank in 1992–93. In the earlier years, fishing was mostly in

- depths less than 425 m. After 1994–95, the mean depth of trawl tows increased to 430 to 440 m and the depth range remained reasonably consistent through to 2002–03.
- 66 Commercial CPUE (unstandardised) increased consistently from 1992–93 and reached a peak in 2000–01. Since then, there has been a marked decline in CPUE, although catch rates remain on average 65 % greater than those in the 1992–93 index year. However, fishing behaviour will have changed after 2000–01. In 2001–02, all scampi permit holders had access to all FMAs, restrictions on vessels authorised to fish in specified areas had been removed, individual allocations (in FMAs 1, 2, 4, and 6A) were set aside, and all areas were competitively fished. More vessels entered the scampi fishery generally, and there was probably greater competition on the relatively concentrated grounds in FMA 3. Those changes possibly explain the decline in CPUE after 2000–01.
- 67 A photographic survey to determine scampi abundance was done between August and October 2001. The survey counted scampi and their burrows within the core Mernoo Bank area of the fishery. The estimate of minimum scampi biomass from visible scampi was 2 600 to 2 800 tonnes, assuming an average scampi weight of 35.5 g. That estimate is likely to be conservative. The current CCL of 60 tonnes represents about 2 % of the minimum biomass estimate. Using the abundance of major burrow openings, the same average scampi weight, and assuming that all burrows were occupied, produced total biomass estimates of 10 000 tonnes to 15 000 tonnes. Those estimates might not be conservative. The current CCL of 60 tonnes represents about 0.5 % of the estimated total biomass. These estimates suggest that the current CCL for FMA 3 is likely to be conservative.
- 68 The fishery in the western part of FMA 4 is concentrated on the western Chatham Rise, and the location, extent, and depth (mean tow depth of 380 m) of the fishery has changed little over time. Landings between 1993–94 and 1998–99 were exclusively reported from the western part of the FMA.
- 69 Total scampi landings from FMA 4 between the 1992–93 and 2002–03 fishing years varied between 223 tonnes and 269 tonnes. The average fishing year landing over that period was 246 tonnes. The CCL in FMA 4 was individually allocated between the 1992–93 and 2000–01 fishing years. The individual allocations were set aside for the 2001–02 fishing year, and subsequent fishing has been competitive within the CCL. Since competitive fishing, the FMA 4 fishery has been closed within the first month of the fishing year - 30 October 2001; 18 October 2002, and 13 October 2003.
- 70 Commercial unstandardised CPUE in the western part of FMA 4 increased between 1991–92 and 1995–96, and since then has fluctuated at levels well above the 1991–92 index year without apparent trend. CPUE in 2002–03 was about twice the level in the index year.
- 71 Given that CPUE remains at about twice the index year value, and that fishers are able to catch the current CCL of 250 tonnes within a few weeks, it is reasonable to conclude that the CCL might be conservative, and that additional yield might be sustainable. However, the stock assessment reported by the Plenary notes that it is not known if recent catches and current catch limits are sustainable in the long term or

will allow the stock to move towards a size that will support the maximum sustainable yield.

- 72 MFish proposes that there is sufficient information to support setting a TAC for SCI 3 that is greater than the sum of the respective current CCLs for FMAs 3 and 4. The best available information for both FMAs 3 and 4 suggests that additional catch is likely to be sustainable. However, neither stock status nor specific yield estimates are available, so the long-term sustainability risk of any chosen level of increased harvesting cannot be established. A further consideration is that the adverse effects of scampi trawling are considered to be mitigated by the spatially discrete nature of the fishery. A large increase in the TAC could allow for expansion of effort into new areas, and those areas could be adversely affected.
- 73 On balance, MFish proposes that the sum of current scampi CCLs for FMAS 3 and 4 be increased by about 10 %. That will provide for increased utilisation that the best available information suggests might be sustainable without creating potential for markedly increased effects of fishing. The sum of the CCLs is 310 tonnes. Increasing that by approximately 10 % and making an allowance of about 5 % for other sources of fishing-related mortality produces a TAC of 357 tonnes.

SCI 4A

- 74 MFish proposes a TAC of 126 tonnes for SCI 4A.
- 75 SCI 4A is defined in the Bill as that part of FMA 4 to the east of the 180° meridian, including the waters surrounding the Chatham Islands.
- 76 Substantial fishing was reported from this area only between 1990–91 and 1992–93, and again since 1998–99. The sum of catches from the eastern area has been very low, and the stock is likely to be near its virgin size. CPUE in 2002–03 was about twice that in the 1990–91 index year.
- 77 The fishery has operated in a confined area to the north of the Chatham Islands that has remained relatively consistent. However, the bathymetry of the Chatham Rise suggests that scampi habitat, and scampi, might be available throughout the QMA. Scampi have been taken in research trawls throughout the area.
- 78 The CCL of 250 tonnes for FMA 4 was originally set on the basis of the area of scampi habitat between the 200 m and 500 m depth contours, and an estimate of yield per unit area derived from the scampi fishery in FMA 1. The area of habitat within SCI 4A is slightly less than half that within the entire FMA 4. MFish proposes that the TAC for SCI 4A be set at 126 tonnes, including an allowance of 6 tonnes to account for fishing-related mortality.
- 79 Reliable estimates of abundance and yield are not available, and it is not known if catches at the proposed TAC level will be sustainable in the long term or move the stock towards the B_{MSY} level. However, the available estimate of yield was derived from a relatively conservative method. Coupled with the likelihood that the eastern stock is near virgin size, the TAC proposed for SCI 4A is likely to be relatively cautious. Making that yield available satisfies the utilisation purpose of the Act, while doing so cautiously ensures sustainability and addresses the environmental principles.

Further utilisation potential can be explored by stakeholders over time via the available mechanisms in the Act, including fishery plans, adaptive management, and directed research.

- 80 Under the proposed TAC for SCI 4A, it is likely that more fishing effort will be deployed in the area than was typical previously. Most fishing was in the western part of FMA 4. A further consideration is that the TAC would give rise to adverse effects of scampi trawling in the area. MFish considers that fishing within the proposed TAC is likely to be confined to that part of the QMA that has been trawled for scampi previously, and is a known fishing ground. Any adverse effects are likely to be confined to that area. A larger increase in the TAC could allow for expansion of effort into new areas, and those areas could be adversely affected.

SCI 6A

- 81 MFish proposes a TAC of 321 tonnes for SCI 6A, based upon the CCLs for the current FMA 6A and 6B management areas, including an allowance of 15 tonnes for fishing-related mortality.
- 82 The SCI 6A QMA as defined in the Bill includes all of the current scampi 6A area surrounding the Auckland Islands, and the immediately adjacent part of the 6B area that has been fished. In proposing the SCI 6A QMA boundaries, the conclusion was that the fishery adjacent to the Auckland Islands shelf was a single fishery operating on one biogeographical unit. All reported scampi catch from the current 6A and 6B areas has been taken from the Auckland Islands shelf area, and this suggests that the current CCLs (256 tonnes for 6A and 50 tonnes for 6B) can be summed to form an appropriate basis for the new SCI 6A QMA.
- 83 A catch limit of 300 tonnes was set for the entire FMA 6 in 1991–92, and 323 tonnes was reported landed that year. For the following year, the FMA and the CCL was split into area 6A (250 tonnes) and area 6B (50 tonnes). Those areas and limits have been retained until now.
- 84 Reported landings from area 6A have varied between 198 tonnes and 273 tonnes over the period 1992–93 to 2002–03. Approximately 236.5 tonnes was reported for the average fishing year over that period. 234 tonnes was landed in 2002–03.
- 85 In area 6B, landings have varied between 14 tonnes and 81 tonnes over the same period. The average year yielded approximately 44.5 tonnes. 21 tonnes were landed in 2002–03, but this will have been influenced by the changes to the overall management regime (all areas open to all permit holders on a competitive basis, no vessel restrictions) which gave rise to changes in fishing patterns.
- 86 Scampi CPUE (unstandardised) in FMA 6A decreased markedly between 1991–92 and 1994–95, then increased again through until 1997–98. From 1997–98 until 2001–02, CPUE declined gradually, followed by a modest increase in 2002–03. CPUE in 2002–03 was about 35 % of that in the 1991–92 index year.
- 87 The fishery was initially concentrated within a relatively shallow strip south of the Auckland Islands, but has spread to deeper waters further to the southeast. The mean trawl depth has increased from about 410 m to 475 m in recent years. This pattern of

fishing increasingly deeper areas could indicate that catch rates have been maintained by changing the fished area, and that serial depletion of the stock might be occurring.

- 88 The main fishing area in 6B is exposed to the weather, and a considerable steaming time from shelter at the Auckland Islands. Fishing in the area has been spatially and temporally variable, and early fishing was distant from area 6A. Since 1997–98, most fishing has been close to the eastern boundary of area 6A, in average depths similar to those in 6A.
- 89 CPUE (unstandardised) in area 6B was relatively stable through to 2000–01, but then declined markedly in 2001–02. CPUE remained at about 30 % of the index year (1992-93).
- 90 While recent catch rates in areas 6A and 6B appear to have declined well below the index year, it is not known if CPUE is a reliable index of abundance. Further, changes to the management regime and the distance of the fisheries from the nearest ports, will have influenced the way fishers have utilised the fisheries in areas 6A and 6B since 2001–02. Without fishery-independent indices of abundance, it is difficult to deduce the current state of health of the fisheries with any certainty. The best available scientific advice from the Plenary is that it is not known if recent catches and current catch limits are sustainable in the long term or will allow the stock to move towards a size that will support the maximum sustainable yield.
- 91 On balance, MFish considers that the sum of CCLs for areas 6A and 6B is an appropriate basis for setting the SCI 6A TAC that will satisfy the obligations under the Act. The available information about the status of the stock is uncertain or inadequate. Average landings over ten years have been close to the proposed TAC, and the need to reduce utilisation of the stock for sustainability reasons cannot be reliably established at this time. However, MFish will monitor closely the performance of the fishery over the coming few years, and recommends that fishery-independent monitoring using photographic methods be started as soon as possible.

SCI 6B

- 92 MFish proposes a TAC of 53 tonnes for SCI 6B, based on the current CCL for the existing area 6B, including an allowance of 3 tonnes for fishing-related mortality.
- 93 The SCI 6B QMA as defined in the Bill includes all of the general FMA 6 area outside the boundaries of SCI 6A. Although a vast geographic area, suitable depth ranges for scampi are restricted to four areas, generally surrounding the Campbell, Antipodes, and Bounty Islands and the Pukaki Rise area. Nevertheless, the spatial extent of the available habitat is large. The CCL of 300 tonnes for FMA 6 was originally set on the basis of the area of scampi habitat between the 200 m and 500 m depth contours, and an estimate of yield per unit area derived from the scampi fishery in FMA 1. The CCL was partitioned between areas 6A (250 tonnes) and 6B (50 tonnes) for the 1992–93 fishing year, largely on the basis of catch taken in the 6A area. The area of possibly suitable scampi habitat within 6B is considerably greater, and suggests that the proposed TAC of 53 tonnes is likely to be relatively cautious. The likely areas of habitat are far distant from the nearest ports or available shelter, little or no fishing has been done there, and the stocks are likely to be at or near their virgin size.

94 Reliable estimates of abundance and yield are not available, and it is not known if catches at the proposed TAC level will be sustainable in the long term or move the stock towards the B_{MSY} level. However, the available estimate of yield was derived from a relatively conservative method. Coupled with the likelihood that the stock is near virgin size, the TAC proposed for SCI 6B is likely to be relatively cautious. Making that yield available satisfies the utilisation purpose of the Act, while doing so cautiously ensures sustainability and addresses the environmental principles. Further utilisation potential can be explored by stakeholders over time via the available mechanisms in the Act, including fishery plans, adaptive management, and directed research.

SCI 5, 7, 8, 9

95 MFish proposes TACs for SCI 5, 7, 8, and 9 based on the current CCLs for the stocks, and allowances for fishing-related mortality at the level of 5 % of the TACCs for SCI 5, 7, 8 and 9. The proposed TACs are:

- SCI 5 – 42 tonnes.
- SCI 7 – 79 tonnes.
- SCI 8 – 5 tonnes.
- SCI 9 – 37 tonnes.

96 The proposed TAC for SCI 8 is low in comparison to all other stocks, because the spatial extent of habitat is concomitantly small. An allowance of 5 % of the TACC for fishing-related mortality in SCI 8 has limited relevance and has not been included. Should the TAC/TACC for SCI 8 be increased in the future, or should new information about fishing-related mortality become available, the allowance will be reviewed.

97 Landings reported from SCI 5, 7, 8, and 9 have been low generally, and typically between zero and two tonnes in SCI 7, 8, and 9. Substantial landings have been reported only from SCI 5 (30 tonnes reported in the 1998-99 year). Landings in 2002-03 were less than one tonne in all stocks except for 7 tonnes landed in SCI 5. Given that little catch has been reported from SCI 5, 7, 8, and 9, it is likely that the stocks are close to virgin size.

98 The current CCLs for scampi in FMAs 5, 7, 8, and 9 were set on the basis of the area of scampi habitat between the 200 m and 500 m depth contours, and an estimate of yield per unit area derived from the scampi fishery in FMA 1.

99 Reliable estimates of abundance and yield are not available for any stock, and it is not known if catches at the proposed TAC levels will be sustainable in the long term or move the stocks towards the B_{MSY} level. However, the available estimates of yield were derived from a relatively conservative method. Coupled with the likelihood that the stocks are near virgin size, the TACs proposed for SCI 5, 7, 8, and 9 are likely to be relatively cautious. Making those yields available satisfies the utilisation purpose of the Act, while doing so cautiously ensures sustainability and addresses the environmental principles. Further utilisation potential can be explored by

stakeholders over time via the available mechanisms in the Act, including fishery plans, adaptive management, and directed research.

SCI 10

100 No scampi catch has been reported in FMA 10. Access to scampi in the area has not been provided under the non-QMS management framework. Habitat is very restricted. MFish proposes a TAC of 0 tonnes for SCI 10.

Allocation of TAC

101 When setting a TAC, a TACC must be set, and allowances determined for the Māori customary fishing interests, recreational fishing interests, and for any incidental fishing-related mortality.

102 The Minister is required to make separate decisions on allowances and TACCs for each stock. MFish propose allowances and TACCs as shown in Table 1.

Māori customary and recreational allowances

103 MFish knows of no quantitative information on the level of Maori customary and recreational take, but both are unlikely given the nature of the fishery. No allowances for those non-commercial interests are proposed for any scampi stock.

Other sources of fishing-related mortality

104 There is no information on the current level of illegal catch. Accordingly, it is suggested that no allowance is made to cover illegal catch at this time.

105 Unaccounted sources of mortality in scampi fishing could include incidental effects of trawl gear on the animals and their habitat, and the death of scampi discarded. There is no quantitative information on the level of other sources of mortality. MFish proposes that an allowance of 5 % of the TACC be set in accordance with the legislative requirement to provide for an allowance of other sources of fishing-related mortality (as per the discussion of the general rationale for TAC setting). The TACCs proposed are a composite of the current CCLs plus 5 % of the TACC for other fishing-related mortality.

TACCs

106 Proposed TACCs in tonnes for each scampi QMA are set out in Table 1.

SCI 1

107 MFish proposes to set a TACC of 120 tonnes for SCI 1, based on the CCL that has applied since 1992–93. The proposed TACC is slightly greater than the ten year average fishing-year landings from the fishery from 1992–93 to 2002–03. MFish assesses there will be little if any socio-economic impact associated with this TACC because it is based on current limits and accommodates current levels of commercial utilisation.

SCI 2

108 MFish proposes two options for a TACC for SCI 2:

- **Option 1** is to retain the status quo and set the TACC at 246 tonnes, based upon the current CCL;
- **Option 2** is to reduce the allowable catch by approximately 20 % in light of sustainability concerns, and set the TACC at 200 tonnes.

109 Total landings between 1992–93 and 2002–03 varied between 146 tonnes and 247 tonnes. 210 tonnes was landed in the average fishing year. Since 1999–00, the CCL has been reached in only one year (2001–02), and 134 tonnes was landed in 2002–03.

110 MFish assesses there will be little if any socio-economic impact associated with Option 1 for the TACC because it is based on current limits and accommodates current levels of commercial utilisation.

111 However, MFish prefers Option 2 in light of the evidence for a sustainability concern in SCI 2. Given that landings from SCI 2 have been well below the current CCL in three of the last four years, and fishing effort appears to have been voluntarily re-deployed to other areas, reduced catches allowed under Option 2 are unlikely to have any socio-economic impact in the short term. Should fishers choose to return effort to the QMA, the reduced TACC will impact upon utilisation outcomes. However, there are doubts as to the sustainability of the current CCL, and the long-term utilisation potential could be compromised if the stock declines too far.

112 The 2004 average port price for scampi is about \$ 28/kg. That price translates into a conservative estimate of foregone value (ex vessel) of about \$1.3 million should the TACC be reduced under Option 2. However, that should be viewed in the context of future value that might be gained if the stock stabilises or increases in size under Option 2 and catch rates improve.

SCI 3

113 MFish proposes a TACC for SCI 3 of 340 tonnes, based largely on the sum of the current CCLs for scampi in FMAs 3 and 4 that contribute to the SCI 3 QMA. The proposed TACC includes a 10 % increase to recognise the available information that suggests additional yield is likely to be sustainable.

114 The proposed TACC will enable some growth of the fishery and have socio-economic benefits. The additional allowable catch would represent conservatively (using port price) almost a million dollars additional value to contribute to further development and understanding of the fishery.

SCI 4A

115 MFish proposes a TACC of 120 tonnes for SCI 4A.

- 116 Substantial fishing was reported from this area only between 1990–91 and 1992–93, and again since 1998–99. The sum of catches from the eastern area has been very low.
- 117 MFish assesses that the proposed TACC will enable further development of the fishery, and so have socio-economic benefits. The TACC for SCI 4A represents an additional 120 tonnes of allowable catch that was not previously available. The conservative estimate of value at the 2004 port price exceeds \$3 million.

SCI 6A

- 118 MFish proposes a TACC of 306 tonnes for SCI 6A, based upon the CCLs for the current FMA 6A and 6B management areas that comprise the SCI 6A QMA.
- 119 MFish considers that there are unlikely to be socio-economic impacts from the proposed TACC since it accommodates past and current levels of utilisation.

SCI 6B

- 120 MFish proposes a TACC of 50 tonnes for SCI 6B, based on the current CCL for the existing area 6B.
- 121 The proposal represents a net increase of 50 tonnes in the available catch within FMA 6 overall. As such, potential is created for the development of the previously unfished areas of the QMA, and socio-economic benefits could be realised. At the 2004 port price, the value that could be gained exceeds \$1 million.

SCI 5, 7, 8, 9

- 122 MFish proposes TACCs for SCI 5, 7, 8, and 9 based on the current CCLs for the stocks. The proposed TACCs are:
- SCI 5 – 40 tonnes.
 - SCI 7 – 75 tonnes.
 - SCI 8 – 5 tonnes.
 - SCI 9 – 35 tonnes.
- 123 The current CCLs for scampi in FMAs 5, 7, 8, and 9 were set on the basis of the area of scampi habitat between the 200 m and 500 m depth contours, and an estimate of yield per unit area derived from the scampi fishery in FMA 1. Levels of utilisation reported from SCI 5, 7, 8, and 9 have been low generally, and typically between zero and two tonnes in SCI 7, 8, and 9. Substantial landings have been reported only from SCI 5 (30 tonnes reported in the 1998-99 year). Landings in 2002–03 were less than one tonne in all stocks apart from 7 tonnes landed in SCI 5.
- 124 MFish considers that there are unlikely to be socio-economic impacts from the proposed TACCs since they accommodate past and current levels of utilisation. More likely, under QMS management and secure rights to quota, there is real potential for

development of these stocks, and the proposed TACCs are likely to give rise to socio-economic benefits.

SCI 10

- 125 MFish proposes a TAC of 0 tonnes for SCI 10. No scampi fishers have had access to FMA 10, and no scampi catch has been reported there.
- 126 MFish assesses that there will be no socio-economic impact associated with the proposed TACC because it does not alter current commercial access and utilisation.

Other Management Measures

- 127 Specific measures are proposed to:
- Amend the commercial fisheries regulations to authorise the use of small mesh trawl net for taking scampi and bycatch species;
 - Amend the fisheries reporting regulations to specify Fishstock codes and QMAs for use under the QMS; and
 - Set deemed values.

Consequential amendments to regulation

Mesh size authorisation

- 128 Scampi fishers are currently authorised by conditions on non-QMS fishing permits to use small mesh trawl nets to take scampi. The use of 80 mm mesh in the net body and 55 mm mesh in the cod-end has been necessary since the beginning of the fishery to effectively select for scampi (which are quite small animals compared with many targeted finfish species).
- 129 Upon entry to the QMS, the use of conditions on fishing permits becomes undesirable. All fishing permit holders have access to QMS species, and the primary requirements are that catches of QMS stocks are balanced against ACE. If permit conditions were retained, it would be necessary to specify all conditions on all permits. It will be more efficient and administratively simpler to specify by regulations that 80 mm mesh in the net body and 55 mm mesh in the cod-end is allowed for scampi trawling.
- 130 Details of the proposed amendments are attached as Annex One to this section.

Reporting codes

- 131 As a consequence of the introduction of scampi into the QMS, MFish proposes to introduce amendments to the reporting regulations to ensure the effective and efficient operation of the QMS.
- 132 Details of the proposed amendments are attached as Annex One to this section.

Schedule 5A

133 MFish does not propose to list any scampi stock on Schedule 5A of the Act, and hence proposes to allow under-fishing rights to be carried forward. MFish does not consider that this will pose risks to the sustainability of scampi stocks, and will provide flexibility for rights holders to plan their fishing.

Deemed values and overfishing thresholds

134 **Deemed values** are intended to provide economic incentives for fishers to balance their catch against ACE. Deemed values generally are also set at levels that discourage the discarding of fish if ACE is not held (an unlawful activity). Fishers are not required to have minimum holdings of ACE, except in specified fisheries, and MFish does not propose that minimum holdings apply in any scampi stock.

135 Operational guidelines have been developed for setting deemed values. MFish considers that scampi stocks align best with the 'High Value Single Species Fisheries Fishstocks' category and the associated guidelines for setting deemed values. Scampi has a high port price (from \$ 24.00/kg to \$ 28.13/kg in the 2004 survey), and target fishing takes the vast majority of the catch. MFish considers that, despite the relatively large proportions of bycatch that characterise the scampi fishery, the fishery fits the high value category best because of the need for a strong deterrent to taking catch in excess of ACE. Although scampi catches are characterised by large proportions of bycatch, including QMS species of importance (ling, hoki, and gemfish), the need to obtain ACE to balance bycatch is an existing requirement for scampi fishers.

136 MFish considers that the initial deemed values for scampi should be set at 200 % of the port price, as per the high value guidelines. Deemed values at that level are likely to create the necessary incentive for rights holders to manage their fishing within the available ACE, and not to profit from overfishing the TACCs.

137 A relatively small quantity of scampi (less than 1 % of the total catch limits for all stocks) is taken as an inevitable consequence of bottom trawling for other species (standard bottom trawl methods and mesh do not select for scampi very well). MFish recognises that scampi ACE might not be readily available for such fishers, and that the high deemed values might create incentives to discard scampi bycatch or consume it on board vessels. If fishers do not land scampi bycatch because of the high deemed values, information about the true fishing mortality (to contribute to stock assessments) will be lost. However, estimates of bycatch levels can be determined from existing landings and from sampling of future catches. That component of the catch is unlikely to pose risks to the stocks.

Table 2: Proposed deemed values for scampi stocks:

Species fishstock	Survey port price (\$/kg)	Proposed % factor	Proposed Annual Deemed Value (\$/kg)	Proposed Interim Deemed Value	Differential deemed value (Y/N)	Overfishing threshold
Scampi (SCI) 1, 2, 3, 4A, 5, 6A, 6B, 7, 8, 9, 10	25.65 ⁸	200 %	51.30	25.65	Y	N

* Average of port prices for SCI in FMAs 3, 4, 6A and 6B from 2004 survey.

138 It is further proposed that differential deemed values are set to apply to different levels of catch in excess of annual catch entitlements for scampi stocks (s 75(4)) of the Act as follows:

- a) For so much of a commercial fisher’s reported catch as does not exceed the fisher’s ACE by more than 20%, the basic annual deemed value applies;
- b) For so much of a commercial fisher’s reported catch as exceeds the fisher’s ACE by more than 20%, but not more than 40%, then 120% of the basic annual deemed value applies;
- c) For so much of a commercial fisher’s reported catch as exceeds the fisher’s ACE by more than 40%, but not more than 60 %, then 140% of the basic annual deemed value applies;
- d) For so much of a commercial fisher’s reported catch as exceeds the fisher’s ACE by more than 60%, but not more than 80%, then 160% of the basic annual deemed value applies;
- e) For so much of a commercial fisher’s reported catch as exceeds the fisher’s ACE by more than 80%, but not more than 100%, 180% of the basic annual deemed value applies; and
- f) For so much of a commercial fisher’s reported catch as exceeds the fisher’s ACE by more than 100%, 200% of the basic annual deemed value applies.

139 In the case of a fisher who holds no ACE, the fisher shall be deemed to hold one kilogram of ACE (s 76 (2C)).

140 **Overfishing thresholds** (ss 77, 77A and 78 of the 1996 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.

141 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.

142 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 fisheries fishstock”, a “low knowledge fishery” or “All other”. At least initially, only “high value single species fisheries fishstocks” introduced into the QMS are subject to overfishing thresholds.

- 143 The matters that the Minister may have regard to when considering whether or not to recommend an over-fishing threshold are:
- a) The effectiveness of deemed values in encouraging commercial fishers to acquire or maintain sufficient annual catch entitlement to cover their catch;
 - b) The particular need, in relation to target stocks, to encourage fishers to acquire or maintain sufficient annual catch entitlement to cover their total catch;
 - c) Actual or potential risks to the sustainability of the stock; and
 - d) Any other matters considered relevant.
- 144 It is not possible to assess (a), as scampi will be a new entrant into the QMS. Category (b) relates to target stocks and scampi is taken primarily as a target species. There is a potential risk to the sustainability of scampi stocks (c) if commercial catches exceed the TACCs, but this risk cannot be reliably quantified at this stage. A relevant consideration (d) is the mitigation of adverse effects of fishing by constraining the extent of scampi fishing.
- 145 Scampi trawling is relatively specialised, uses non-standard trawl gear, and access has been restricted to only eight permit holders since the early 1990s. Those current permit holders are likely to remain the major fishers of scampi once stocks enter the QMS. The major fishers are likely to be the major holders of quota, and would have considerable incentives to operate responsibly and ensure the ongoing value of their stake in the scampi fisheries. MFish considers that the specialised, target character of the fishery, and a limited number of participants, suggest that the deemed value framework should serve to effectively constrain catches within the respective TACC and ACE levels. MFish notes that the performance of the deemed value framework is easily monitored, and overfishing thresholds for scampi stocks can be set in the future if necessary.
- 146 On balance, MFish does not propose to set an overfishing threshold for scampi at the time of QMS entry.

Preliminary Recommendations

- 147 MFish recommends that the Minister:
- a) **Agrees** to set a TAC of 126 tonnes for SCI 1 and within that TAC sets:
 - A customary allowance of 0 tonnes;
 - i) A recreational allowance of 0 tonnes;
 - ii) An allowance for other fishing-related mortality of 6 tonnes; and
 - iii) A TACC of 120 tonnes.
 - b) **Agrees** to set for SCI 2:
 - EITHER** a TAC of 258 tonnes and within that TAC sets:
 - i) A customary allowance of 0 tonnes;
 - ii) A recreational allowance of 0 tonnes;

- iii) An allowance for other fishing-related mortality of 12 tonnes; and
 - iv) A TACC of 246 tonnes.
- OR** a TAC of 210 tonnes and within that TAC sets:
- v) A customary allowance of 0 tonnes;
 - vi) A recreational allowance of 0 tonnes;
 - vii) An allowance for other fishing-related mortality of 10 tonnes; and
 - viii) A TACC of 200 tonnes.
- c) **Agrees** to set a TAC of 357 tonnes for SCI 3 and within that TAC sets:
- i) A customary allowance of 0 tonnes;
 - ii) A recreational allowance of 0 tonnes;
 - iii) An allowance for other fishing-related mortality of 17 tonnes; and
 - iv) A TACC of 340 tonnes.
- d) **Agrees** to set a TAC of 126 tonnes for SCI 4A and within that TAC sets:
- i) A customary allowance of 0 tonnes;
 - ii) A recreational allowance of 0 tonnes;
 - iii) An allowance for other fishing-related mortality of 6 tonnes; and
 - iv) A TACC of 120 tonnes.
- e) **Agrees** to set a TAC of 42 tonnes for SCI 5 and within that TAC sets:
- i) A customary allowance of 0 tonnes;
 - ii) A recreational allowance of 0 tonnes;
 - iii) An allowance for other fishing-related mortality of 2 tonnes; and
 - iv) A TACC of 40 tonnes.
- f) **Agrees** to set a TAC of 321 tonnes for SCI 6A and within that TAC sets:
- i) A customary allowance of 0 tonnes;
 - ii) A recreational allowance of 0 tonnes;
 - iii) An allowance for other fishing-related mortality of 15 tonnes; and
 - iv) A TACC of 306 tonnes.
- g) **Agrees** to set a TAC of 53 tonnes for SCI 6B and within that TAC sets:
- i) A customary allowance of 0 tonnes;
 - ii) A recreational allowance of 0 tonnes;
 - iii) An allowance for other fishing-related mortality of 3 tonnes; and
 - iii) A TACC of 50 tonnes.
- h) **Agrees** to set a TAC of 79 tonnes for SCI 7 and within that TAC sets:
- i) A customary allowance of 0 tonnes;
 - ii) A recreational allowance of 0 tonnes;

- iii) An allowance for other fishing-related mortality of 4 tonnes; and
 - iv) A TACC of 75 tonnes.
- i) **Agrees** to set a TAC of 5 tonnes for SCI 8 and within that TAC sets:
- 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 5 tonnes.
- j) **Agrees** to set a TAC of 37 tonnes for SCI 9 and within that TAC sets:
- i) A customary allowance of 0 tonnes;
 - ii) A recreational allowance of 0 tonnes;
 - iii) An allowance for other fishing-related mortality of 2 tonnes; and
 - iv) A TACC of 35 tonnes.
- k) **Agrees** to set a TAC of 0 tonnes for SCI 10 and within that TAC sets:
- 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.
- l) **Agrees** to set deemed values for scampi as follows:
- i) an annual deemed value of \$ 51.30/kg; and
 - ii) an interim deemed value of \$ 25.65/kg.
- m) **Agrees** that differential deemed values apply.
- n) **Agrees** to amend the Fisheries (Reporting) Regulations 2001 to specify the Fishstock codes and QMAs that apply and are to be used by fishers when completing their statutory catch returns.
- o) **Notes** that once scampi becomes subject to the QMS, fishing permit conditions applying trawl net mesh size limits for taking scampi (and bycatch) will no longer be appropriate, and will be revoked.
- p) **Agrees** to amend the Fisheries (Commercial Fishing) Regulations 2001 to authorise the use of 80 mm mesh in the body and 55 mm mesh in the cod-ends of trawl nets for taking scampi and bycatch.
- q) **Agrees to amend the** Fisheries (Commercial Fishing) Regulations 2001 to make it an offence to use a trawl net with 80 mm mesh in the body and 55 mm mesh in the cod-ends unless targeting scampi.

ANNEX ONE

Amendments to regulations

Consequential amendments to the Fisheries (Commercial Fishing) Regulations 2001 - Regulating fishing permit conditions that authorise net mesh sizes for scampi

Background

- 148 It is proposed that the Fisheries (Commercial Fishing) Regulations 2001 be amended to allow the use of 80 mm net mesh in the body and 55 mm net mesh in the cod-end of trawl nets used when fishing for scampi.
- 149 The scampi trawl fishery would not be able to operate effectively without the ability to use the mesh sizes currently authorised by permit conditions. Smaller mesh is required to adequately select for scampi, given that the animals are relatively smaller in size than those finfish species generally targeted by trawling. Those mesh sizes have been authorised for use since the early development of the fishery (initially by special permit). The standard regulated minimum mesh size for trawl nets is 100 mm.
- 150 Scampi stocks are currently managed under the non-QMS framework, and permit conditions are used to authorise the use of smaller net mesh.

Problem definition

- 151 A QMS fishing permit authorises fishing for QMS stocks generally, and the catch of specific stocks must be balanced against ACE. Retaining permit conditions to authorise net mesh sizes appropriate for scampi would necessitate that all QMS permits contained the condition, and that would not be administratively efficient once scampi stocks enter the QMS.
- 152 The regulations will need to specify that the mesh size provisions for scampi also authorise the taking of unavoidable bycatch when scampi fishing using those mesh sizes.
- 153 Currently, the relevant offence provision would be to breach the conditions of a fishing permit. Regulating the minimum mesh size for scampi fishing would require that an offence be created, specifying the nature of the offence and the penalties that would apply.
- 154 Inappropriate use of small mesh trawl nets can have implications for the sustainability of stocks and adverse effects on the aquatic environment. The category of offences that have sustainability implications usually are associated with a maximum penalty of a fine up to \$100 000.00.

Preliminary consultation

- 155 Stakeholders have not been consulted on this proposal before, however, the proposal

is not to alter the allowable fishing methods for scampi, but to alter the way in which the authorisation is applied. Scampi fishers will not be adversely affected.

Options

Non-regulatory measures

156 Non-regulatory alternatives are not considered to be appropriate.

Regulatory Measures

157 Regulating the fishing permit conditions provides the required authorisation, in the appropriate format, to use fishing methods that are effective at taking scampi.

Costs and benefits of the proposal

158 Regulating the net mesh requirements for scampi trawling will not alter current scampi fishing practices, or enforcement requirements. Associated costs will be only for the administrative functions of constructing the necessary regulatory amendment.

159 There is a risk that fishers not genuinely targeting scampi could use small mesh trawls when targeting other species, but claim to be fishing for scampi. MFish considers that the risk is low, both in terms of the likelihood of occurrence, and the severity of impact, at least in the short term.

160 Many important inshore finfish species have minimum legal sizes, and smaller mesh could increase the catch of fish that must be returned to the sea, which is a situation fishers attempt to avoid. The bycatch of unwanted species could increase generally, and increase the on-deck time required for catch sorting. MFish's assessment is that clear incentives for fishers generally to use scampi mesh sizes cannot be established at this time. However, should the risk assessment change in the future, MFish notes that it will act appropriately to mitigate any sustainability risks that might be identified.

Administrative implications

161 There are no ongoing administrative implications associated with replacing these fishing permit conditions by regulation.

Conclusion

162 Regulating the authority to use specified mesh sizes in trawl nets used to take scampi will not change currently authorised scampi fishing practices, and will have administrative efficiency benefits.

Recommendation

163 It is proposed to amend the Fisheries (Commercial Fishing) Regulations 2001 to include the authority to use specified mesh sizes in trawl nets used to take scampi and bycatch species taken as a consequence, and create an offence for inappropriately using a scampi trawl net.

Consequential amendments to the Fisheries (Reporting) Regulations 2001

Background

- 164 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 scampi; and
 - b) Part 1 of Schedule 3 of those regulations to insert a table specifying that the areas referred to by name in the table are the quota management areas for scampi.
- 165 The Fisheries (Reporting) Regulations 2001 provide the framework for the completion and provision 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). If the revised QMAs proposed in the Bill are implemented, it will be appropriate to amend these regulations to ensure that they reflect the QMAs for scampi.

Problem definition

- 166 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 2004.

Preliminary consultation

- 167 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

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

Costs and benefits of the proposal

- 169 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

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

ANNEX TWO

Species Information

Species biology

- 171 Scampi are widely distributed around the New Zealand coast, principally in depths between 200 and 500 m on the continental slope. Like other species of *Metanephrops* and *Nephrops*, *M. challengerii* builds a burrow in the sediment and may spend a considerable proportion of time within this burrow. From trawl catch rates, it appears that there are daily and seasonal cycles of emergence from burrows onto the sediment surface.
- 172 Scampi moult several times per year in early life and probably about once a year after sexual maturity (at least in females). Early work suggested that female *M. challengerii* achieve sexual maturity at about 40 mm orbital carapace length (OCL) in the Bay of Plenty and on the Chatham Rise, about 36 mm OCL off the Wairarapa coast, and not until about 56 mm OCL around the Auckland Islands. Work on more recent trawl surveys in QMAs 1 and 2 suggest that females as small as 30 mm OCL can be sexually mature in these areas. The peak of moulting and spawning activity seems to occur in spring or early summer. Larval development of *M. challengerii* is probably very short, and may be less than 3 days in the wild. The abbreviated larval phase may, in part, explain the low fecundity of *M. challengerii* compared with *N. norvegicus* (that of the former being about 10–20% that of the latter).
- 173 Relatively little is known of the growth rate of any of the *Metanephrops* species in the wild. Tagging of *M. challengerii* to determine growth rates was undertaken in the Bay of Plenty in 1995, and the bulk of recaptures were made late in 1996. About 1% of tagged animals were recaptured, similar to the average return rate of similar tagging studies for scampi and prawns overseas. Many more females than males were recaptured, and small males were almost entirely absent from the recapture sample. Scampi captured and tagged at night were much more likely to be recaptured than those exposed to sunlight. Estimates from this work of growth rate and mortality for females are given in Table 3. The data for males were insufficient for analysis, although the average annual increment with size appeared to be greater than in females.
- 174 The maximum age of New Zealand scampi is not known, although analysis of tag return data and aquarium trials suggest that this species may be quite long lived. *Metanephrops* spp in Australian waters may grow rather slowly and take up to six years to recruit to the commercial fishery, consistent with estimates of growth in *M. challengerii* (Table 2). *N. norvegicus* populations in some northern European populations achieve a maximum age of 15–20 years, consistent with the estimates of natural mortality, M, for *M. challengerii*.

Table 3: Estimates of biological parameters.

Population	Estimate		Source	
1. Weight = a(orbital carapace length)^b (weight in g, OCL in mm)				
All males: QMA 1	a = 0.000373	b = 3.145	Cryer & Stotter (1997)	
Ovigerous females: QMA 1	a = 0.003821	b = 2.533	Cryer & Stotter (1997)	
Other females: QMA 1	a = 0.000443	b = 3.092	Cryer & Stotter (1997)	
All females: QMA 1	a = 0.000461	b = 3.083	Cryer & Stotter (1997)	
2. von Bertalanffy growth parameters				
	K (yr⁻¹)	L (OCL, mm) t₀ (yr)		
Females: QMA 1 (tag)	0.11–0.14	48.0–49.0	0.0	Cryer & Stotter (1999)
Females: QMA 2 (aquarium)	0.31	48.8	0.0	Cryer & Oliver (2001)
Males: QMA 2 (aquarium)	0.32	51.2	0.0	Cryer & Oliver (2001)
3. Natural mortality (M)				
Females: QMA 1	M = 0.20–0.25		Cryer & Stotter (1999)	

175 Scampi from QMA2 were successfully reared in aquariums for over 12 months in 1999–2000. Results from these growth trials suggested a von Bertalanffy K of about 0.3 for both sexes, compared with <0.15 for the tagging trial. Extrapolating the length-based results to age-based curves suggests that scampi are about three to four years old at 30 mm carapace length and may live for 15 years. There are many uncertainties with captive reared animals, however, and these estimates should not be regarded as definitive. In particular, the rearing temperature was 12° C compared with about 10° C in the wild, and the effects of captivity are largely unknown

Stocks and areas

176 Stock structure of scampi in New Zealand waters is not well known. Preliminary electrophoretic analyses suggest that scampi in QMA 6 are genetically distinct from those in other areas, and there is substantial heterogeneity in samples from QMAs 1, 2, and 4. The abbreviated larval phase of this species may lead to low rates of gene mixing. Differences among some QMAs in average size, size at maturity, the timing of diel and seasonal cycles of catchability, catch to bycatch ratios, and CPUE trends also suggest that treatment as separate management units is appropriate.

Review of stock boundaries between SCI 3 and SCI 4 and between SCI 6A and SCI 6B

177 In September 1999 the Minister of Fisheries requested that a review of stock boundaries between SCI 3 and SCI 4 and between SCI 6A and SCI 6B be undertaken prior to any future declaration bringing scampi into the Quota Management System.

178 Information on average catch rates, trends in CPUE, average size, sex ratio, bathymetry, and by-catch amount and composition was analysed in order to assess the

current boundaries in QMA 3 and 4, and QMA 6A and 6B on a biological basis. It should be noted that relationships between fish by-catch distributions and scampi distributions are uncertain, but similarities in species mixes across areas may indicate the continuance of a particular habitat or environment. Also, the Shellfish Fishery Assessment Working Group decided (in 1998) that the standardised CPUE analyses were not providing reliable indices of abundance for scampi.

- 179 QMA 3 and QMA 4 - For the eastern part of QMA 3 (excluding the areas off the Canterbury and Otago coasts) and western part of QMA 4, an examination of average catch rates, trends in CPUE, average size, sex ratio, bathymetry, and by-catch amount and composition indicated that these areas share some similar fishing, biological and depth characteristics. This result is consistent with the fisheries in eastern QMA 3 and the western part of QMA 4 operating in one biogeographical region and on one scampi stock rather than two separate stocks.
- 180 There were some differences between scampi catches in the eastern parts of QMA 4 (for which there are relatively few data as it was only fished occasionally between 1993 and 1997) and western parts of QMA 4, but overall no conclusions can be drawn. For the areas of QMA 3 off the Canterbury and Otago coast, fishing has been sporadic since 1989–90. This prevented a comparison of fisheries in this area with those on the Chatham Rise (including the Mernoo Bank).
- 181 QMA 6A and QMA 6B - The fisheries in the Subantarctic, QMA 6A and QMA 6B are centred around the Auckland Islands. There was markedly less information available for QMA 6B (compared with QMA 6A) and most of the QMA 6B information was from an area near the QMA 6A management boundary which transects a depth gradient from 250m to 500 m in a longitudinal direction.
- 182 For scampi, size varied with longitude, however, sex ratio did not. Both size and sex ratio changed with depth. Comparisons of catch rates between QMA 6A and QMA 6B were inconclusive. Trends in bycatch amount and composition across QMA 6A appeared to continue into QMA 6B and may be depth related. This result is consistent with the fisheries in QMA 6A and the adjacent area of QMA 6B on the Auckland Island shelf, operating in one biogeographical region and on one scampi stock rather than two separate stocks. Nothing is known about scampi in other parts of QMA 6B away from the Auckland Island shelf.

Fisheries characteristics

Commercial fisheries

- 183 Scampi is not managed under the QMS. Access is restricted and, until the 1999–00 fishing year, there were restrictions on the vessels that could be used in each QMA. Until the 2001–02 fishing year, catches were restrained using a mixture of competitive and individually allocated catch limits. Since October 2001, all scampi fisheries areas have been managed by competitive catch limits.
- 184 The fishery initially developed in QMA 1 in 1987–88 and is conducted mainly by 20–40 m vessels using light bottom trawl gear. All vessels use multiple rigs of two or three nets of very low headline height. The main fisheries are in waters 300–500 m deep in QMA 1 (Bay of Plenty), QMA 2 (Wairarapa Coast), QMA 3 (Mernoo Bank)

QMA 4 (western Chatham Rise and Chatham Islands) and QMA 6 (Sub-Antarctic) (Table 1). Some fishing has been reported on the Challenger Plateau outside the EEZ.

185 Catch limits were first set for the 1991–92 fishing year and caused a reduction in catch levels in QMAs 1 and 2 compared with 1990–91. In subsequent years catches in QMAs 1 and 2 have generally remained at or below catches landed in 1991–92 and below the catch limit. In 1992–93, QMA 6 was subdivided into 6A (Auckland Islands, catch limit 250 tonnes) and 6B (rest of Sub-Antarctic, catch limit 50 tonnes). The limits in QMAs 1, 2, 4, and 6 A were allocated to individual permit holders until October 2001, and catch limits in other QMAs were competitive. Competitive catch limits apply to all scampi fishery areas for the current fishing year.

Commercial catch and landing by QMA

Table 4: Estimated commercial landings (t) from the 1986–87 to 2002–03 fishing years and catch limits (t) by QMA (from TCEPR, MFish catch effort database, early years may be incomplete). No limits before 1991–92 fishing year, * no separate catch limits for QMAs 6A and 6B before 1992–93, total catch limit 300 t, (†), catch limits allocated individually.

	QMA 1		QMA 2		QMA 3		QMA 4		QMA 5	
	Landings	Limit (†)	Landings	Limit (†)	Landings	Limit	Landings	Limit (†)	Landings	Limit
1986–87	5	–	0	–	0	–	0	–	–	–
1987–88	15	–	5	–	0	–	0	–	0	–
1988–89	60	–	17	–	0	–	0	–	0	–
1989–90	104	–	138	–	0	–	0	–	0	–
1990–91	179	–	295	–	0	–	32	–	0	–
1991–92	132	120	221	246	1	60	230	250	0	60
1992–93	114	120	210	246	84	60	223	250	2	60
1993–94	115	120	244	246	64	60	261	250	1	60
1994–95	114	120	226	246	66	60	226	250	0	60
1995–96	117	120	230	246	76	60	230	250	0	60
1996–97	117	120	213	246	72	60	232	250	2	60
1997–98	107	120	224	246	60	60	236	250	0	60
1998–99	110	120	233	246	69	60	251	250	30	60
1999–00	124	120	193	246	77	60	268	250	9	40
2000–01	120	120	146	246	79	60	254	250	7	40
2001–02	124	120	247	246	79	60	255	250	<1	40
2002–03	121	120	134	246	74	60	269	250	7	40

	QMA 6A		QMA 6B		QMA 7		QMA 8		QMA 9	
	Landings	Limit (†)	Landings	Limit	Landings	Limit	Landings	Limit	Landings	Limit
1986–87	0	–	0	–	0	–	0	–	0	–
1987–88	0	–	0	–	0	–	0	–	0	–
1988–89	0	–	0	–	0	–	0	–	0	–
1989–90	0	–	0	–	0	–	0	–	0	–
1990–91	2	–	0	–	0	–	0	–	0	–
1991–92	323	*300	2	*	0	75	0	60	0	60
1992–93	198	256	81	50	2	75	0	60	2	60
1993–94	242	256	61	50	0	75	0	60	1	60
1994–95	225	256	14	50	2	75	0	60	0	60
1995–96	220	256	50	50	1	75	0	60	0	60
1996–97	230	256	45	50	0	75	0	60	0	60
1997–98	244	256	35	50	0	75	0	60	0	60
1998–99	273	256	53	50	1	75	0	60	<1	60
1999–00	255	256	73	50	1	75	0	5	0	35
2000–01	227	256	37	50	<1	75	0	5	0	35
2001–02	253	256	19	50	<1	75	0	5	0	35
2002–03	234	256	21	50	<1	75	0	5	0	35

Recreational fisheries

186 There is no quantitative information on the level of recreational take, but it is probably non-existent.

Maori customary fisheries

- 187 There is no quantitative information on the level of Maori customary take, but it is also probably non-existent.

Illegal catch

- 188 There is no quantitative information on the level of illegal catch.

Other sources of mortality

- 189 Unaccounted sources of mortality in scampi could include incidental effects of trawl gear on the animals and their habitat, and the death of scampi discarded. There is no quantitative information on the level of other sources of mortality.

Fisheries assessment

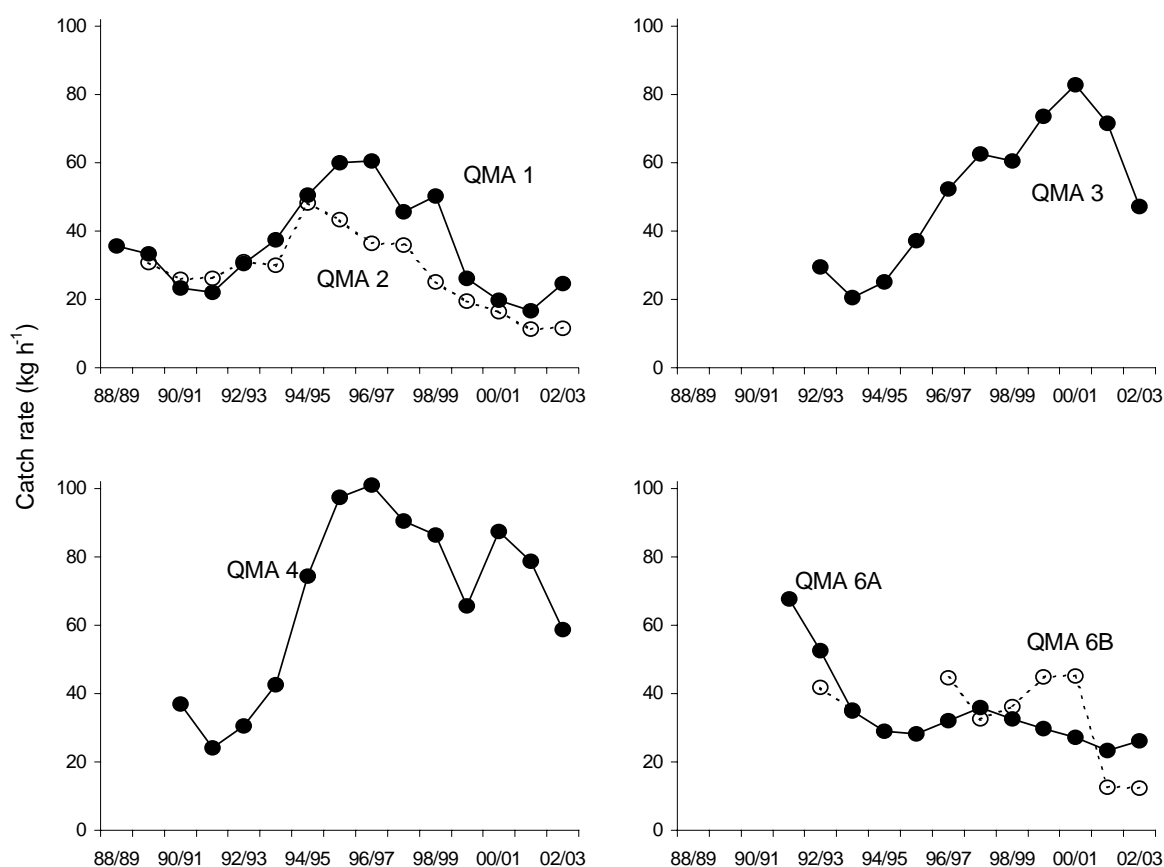
Estimates of fishery parameters and abundance

- 190 Estimates of scampi abundance are based on CPUE and trawl survey indices and, most recently, on photographic surveys of scampi burrows. It is not known whether CPUE or abundance estimates from trawl surveys or photography are reliable indices of scampi abundance.
- 191 Standardised CPUE indices were first calculated for QMA 1 and used as abundance indices for the assessments in 1992, 1993 and 1995. Similar standardised indices for QMAs 2, 3, 4 and 6A were estimated in 1997, 1998 and 1999. These indices for all areas were highly correlated with the unstandardised index (total catch divided by total effort). In 1998 the Shellfish Fishery Assessment Working Group decided that the standardised CPUE analyses were not providing reliable indices of abundance for scampi, and would not be required from the 1999–00 fishing year. However, the standardised analyses may be re-introduced in the future, if warranted.
- 192 Annual unstandardised CPUE indices (total catch divided by total effort (hours of trawling)) have been calculated for each area using the data from all vessels that fished (Figure 1). In QMA 1, CPUE has declined overall since 1995–96. Similarly, in QMA 2, CPUE has declined steadily since 1994–95. In QMA 3, CPUE has decreased in the last 2 years after a steady increase from 1993–94 to 2000–01. In QMA 4, CPUE increased steadily between 1991–92 and 1996–97 but has fluctuated since with a declining trend. In QMA 6A, after an initial decline, CPUE has been relatively flat since 1993–94. In QMA 6B, CPUE remained at the low levels seen in 2001–02.
- 193 A time series of trawl surveys designed to measure relative biomass of scampi in QMAs 1 and 2 ran between January 1993 and January 1995. Estimated indices of abundance relative to 1993 are shown in Table 3. The index for QMA 1 covers the area between Great Barrier and White Islands, and that in QMA 2 the area between Mahia and Castle Point. The precision (c.v.) of indices of relative biomass from trawl surveys was in the range 10 to 16%.

Table 5: Trawl survey estimates of minimum biomass (t) for scampi in survey strata within QMAs 1 and 2, and an index relative to January 1993.

	QMA 1 trawl survey		QMA 2 trawl survey	
	Min. biomass	Rel. index	Min. biomass	Rel. index
1993	223	1.00	167	1.00
1994	276	1.24	126	0.72
1995	338	1.52	154	0.88

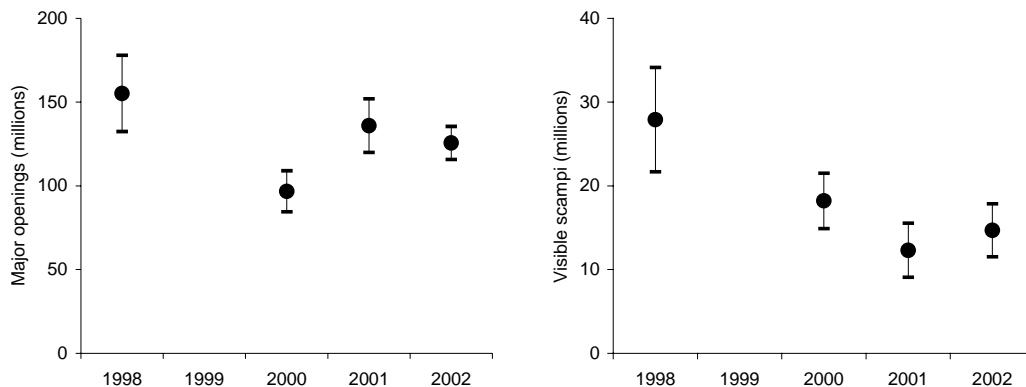
Figure 2: Unstandardised catch rates for scampi (total catch (kg) divided by total effort (hours) with tows of zero scampi catch excluded in QMAs where significant fishing (>5 t in a given year) has been undertaken.



194 Photographic surveying has been used extensively to estimate the abundance of the European scampi *Nephrops norvegicus*. In New Zealand, development of photographic techniques, including surveys has been underway since 1998. To-date, four surveys have been undertaken in QMA 1 (between Cuvier Island and White Island at a depth of 300 to 500 m) and two surveys have been undertaken in QMA 3. At this stage in the development of photographic survey techniques, two indices are showing promise: the density of visible scampi (as an index of minimum absolute abundance), and the density of major burrow openings (counts of which are now consistent among experienced readers, and repeatable).

195 The two indices (estimated from the core area of QMA 1 in 1998, 2000, 2001, and 2002) show different trends (Figure 2). The estimated abundance of visible scampi decreased from 28 million in 1998 to 12 million in 2001 before rising slightly to almost 15 million in 2002 (this trend is similar to that of unstandardised CPUE in QMA 1). Conversely, the estimated abundance of major burrow openings decreased from 155 million in 1998 to about 97 million in 2000, then increased to around 130 million in 2001 and 2002, and there seems little trend in this index.

Figure 3: Estimated abundance (\pm one standard error) of major burrow openings (left) and visible scampi (right) in the core area of the QMA 1 fishery, 1998 to 2002.



196 Length frequency distributions from trawl surveys and from scientific observers do not show a consistent increase in the proportion of small individuals in any QMA following the development of significant fisheries for scampi. An increase in the proportion of small individuals is often associated with heavy fishing pressure. Analyses of information from trawl survey and scientific observers in QMAs 1 and 6A suggest that the proportion of small animals in the catch has declined in both areas, despite the fact that CPUE has declined markedly in QMA 6A and increased markedly in QMA 1. A decrease in the proportion of small animals could stem from changes in gear (especially mesh size) or fishing practice (especially depth selection), but could also be due to changes in the behaviour of the population, to decreased recruitment, or to differences in the exact location of sampling each year. Where large differences in the length frequency distribution of scampi measured by observers have been detected (as in QMAs 1 and 6A), detailed analysis has shown that the spatial coverage of observer samples has varied with time, and this may have influenced the nature of the length frequency samples. The length composition of scampi is known to vary with depth and geographical location.

197 In 2001, 2002 and 2003, some commercial fishers have reported that they are experiencing historically low catch rates in QMA's 1 and 2 and further, suggest that this reflects a decrease in abundance of scampi in these areas. Other fishers believe that catch rates cannot necessarily be attributed to changes in abundance because they are influenced by management and fishing practices .

Biomass estimates

198 There are no reliable estimates of virgin biomass, B_0 , or the biomass that will support the MSY, B_{MSY} , for any scampi stock.

- 199 There are no biomass estimates for any QMA other than estimates made using the area swept method from trawl surveys in QMAs 1 and 2 (Table 4) and using photography in a part of QMA 1. Trawl survey estimates can be considered to be minimum estimates of biomass as it is unlikely that there will be any herding effect of sweeps and bridles and vertical availability to trawls can reasonably be expected to be <1 as many scampi will be found in burrows during the day. A preliminary estimate of standing biomass for the area off the Alderman Islands in QMA 1 has been generated from tag return data, although it should be noted that this programme was not designed to estimate biomass and violates many of the assumptions of the Petersen method. The estimated average biomass of scampi per nautical mile of suitable continental slope by this method was 50–130 tonnes, depending on the assumed rate of initial mortality for tagged animals (assumed range 33–75%). This is more consistent with the photographic estimate of biomass than it is with trawl survey estimates.
- 200 The most recent photographic estimates based on major (front) burrow openings suggest a mean (1998–2002) biomass of about 4500 tonnes in that part of QMA 1 between Great Mercury Island and White Island, 300–500 m (where the QMA 1 fishery predominantly occurs), assuming one animal per major burrow opening and a mean individual weight of 35 g. Based on the estimated abundance of visible scampi in the most recent (2002) photographic survey, and using the mean individual weight estimate of 35 g, the estimated minimum absolute biomass in 2002 was about 500 tonnes.

Estimation of Maximum Constant Yield (MCY)

- 201 Because of the lack of biomass estimates and the constraint of catches, MCY was not determined.

Estimation of Current Annual Yield (CAY)

- 202 Because of the lack of current biomass estimates, CAY cannot be determined.

Other yield estimates and stock assessment results

- 203 There are no other yield estimates or stock assessment results.

Status of the stocks

- 204 The Plenary did not review the status of the stocks in 2004. The unstandardised CPUE indices and information from the photographic surveys have been updated in this report; however, the overall status of the stocks conclusions below remain unchanged.
- 205 For QMA 1, QMA 2, QMA 3, QMA 4, QMA 6A, QMA 6B: it is not known if recent catches and current catch limits are sustainable in the long term or will allow the stock to move towards a size which will support the maximum sustainable yield.

Table 6: Summary of catch limits (t) and reported landings (t) for the most recent fishing year (2002–03)

QMA	Catch Limit	Reported Landings
1	120	121
2	246	134
3	60	74
4	250	269
5	40	7
6A	256	234
6B	50	21
7	75	<1
8	5	0
9	35	0
Total	1 137	860

Current and Future Research

- 206 Current research has a key objective of monitoring the relative abundance of scampi stocks using photographic methods. That method has been applied in SCI 1, 2, and 3, and has produced encouraging results. However, the utility of the method in determining total abundance in any stock will rely upon a better understanding of the rates of scampi emergence or occupancy of burrows, and the period for which a burrow might last if it is vacated. Research will be required to address those matters. If the research is purchased, results are likely to be available within three to five years.
- 207 Research has also begun to develop a length-based population model for scampi in the Bay of Plenty (SCI 1). A preliminary working model has been presented to the Shellfish Fishery Assessment Working Group, and shows promise. Further refinement of the model, and the input of results from improvements in the photographic survey results will be required before the model results could form the basis for stock assessments. The model could be applied to all scampi stocks provided that the necessary inputs were available.

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ANNEX THREE

Statutory Considerations

209 In evaluating the management options, the statutory considerations described below have been taken into account.

- a) The purpose of the Act (s 8) is to provide for the utilisation of fisheries resources while ensuring sustainability. The proposed management options seek to ensure the sustainability of each scampi stock by setting a TAC and other measures as might be appropriate. Utilisation is provided for by way of setting a TACC for each stock. Non-commercial utilisation is considered to be non-existent, and zero allowances for Maori customary and recreational interests are proposed;
- b) MFish proposes setting TACs for scampi stocks under the provisions of s 13, to maintain stocks at or above, or move stocks towards or above, the biomass levels that can produce the MSY. It is not known for any scampi stock if recent catches and current catch limits are sustainable in the long term, or will allow the stocks to move towards a size that will support the maximum sustainable yield. The stock assessment for SCI 1 is preliminary, and further refinement is required before its results can be relied upon. Nonetheless, MFish's assessment is that the best available information suggests that the TACs proposed, based in large part on current CCLs, are likely to achieve the sustainability purpose as defined in the Act;
- c) While scampi are associated with other species that are also part of the benthic ecosystem, MFish is not aware of any particular species inter-relationships that affect the setting of TACs for scampi (s 13(2));
- d) No specific environmental conditions that affect the abundance or recruitment of scampi, and would influence the setting of TACs, have been identified (s 13(2)). The biological characteristics of scampi (for example, their sedentary nature and low fecundity, hence relatively slow stock rebuilding) have been taken into account in the proposals;
- e) Section 13 provides some flexibility when setting TACs, and social, cultural, and economic factors can be considered when determining the way and rate of movement of a stock towards or above the target level (s 13(3)). There are potential social and economic consequences from setting the proposed TACs for scampi. Reducing the TAC in SCI 2 has the potential to impact upon utilisation in the short term. However, additional levels of utilisation will be available within the TACs proposed for SCI 3, 4A, and 6B that potentially will have socio-economic benefits. No specific cultural factors are considered to be relevant to the scampi fishery;
- f) The environmental principles of the Act must be taken into account (s 9). While the environmental effects of scampi trawling are not known to be particularly adverse compared with trawling in general, adverse effects of scampi trawling have been reported from FMA 2, and similar effects are likely in other areas. Specifically, the species composition of benthic invertebrates

was found to have been altered in an area repeatedly fished for scampi compared with areas not fished. The mitigation strategy that has been used, and is proposed to continue, relies on the spatially discrete extent of the fishery in each management area, and the constraints on scampi catches that effectively restrict fishing effort to the currently fished areas. The benthic environment at similar depths beyond the currently fished areas is therefore protected from any adverse effects of scampi trawling. Scampi fishing at the levels of the current CCLs is not known to pose a risk to the long-term viability of any associated or dependent species (s 9(a)), or to the maintenance of biodiversity of the aquatic environment (s 9(b)). Habitats of particular significance for fisheries management have not been identified within the areas and depths suitable for scampi (s 9(c));

- g) MFish considers issues arising under international obligations and the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (s 5) are adequately addressed in the management options for scampi;
- h) The known effects of scampi trawling on stocks and the aquatic environment, and current knowledge of the natural variability of scampi stocks, have been taken into account in the TAC proposals for scampi (s 11(1)(a) and (c)), as described above;
- i) Existing controls on scampi have formed the basis for the TACs proposed (s 11(1)(b));
- j) 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 any management strategy or plan under the Conservation Act 1987, that are relevant to setting TACs for scampi at this time (as required by s 11(2)(a) and (b)). MFish is also aware of the provisions of the Hauraki Gulf Marine Park Act 2000 (s 11(2)(c)). However, the Hauraki Gulf (as defined in that Act) does not extend to the typical depths of scampi distribution and fishing;
- k) Before setting any sustainability measure, the Minister must also take into account any conservation services or fisheries services (s 11(2A)(a)), any relevant fisheries plan approved under the Act (s 11(2A)(b)), and any decisions not to require conservation services or fisheries services (s 11(2A)(c)). Conservation and fisheries services apply to fisheries generally in order to assess and monitor the impacts of fishing on non-target fish and other species. MFish is not aware of any decision not to require services for scampi that would affect the TACs proposed. No fisheries plans exist or are proposed for scampi at this time;
- l) Section 21 requires the Minister to allow for non-commercial fishing interests (recreational and Maori), and other mortality to the stocks caused by fishing. The nature of the fishery and the interests of the respective fishing sectors have been taken into account in proposals for the setting of scampi TACCs. No existing mātaihai in any scampi QMA is likely to affect the area of any scampi fishery. No area has been closed or fishing method restricted, under s 186 A for customary fishing interests, or for recreational fishing interests under s 311, in any QMA that is likely to affect fishing for scampi; and

- m) The best available information was used to develop proposals for scampi, however, there is uncertainty about the information and reliable knowledge of stock status and yield is not available. The Act's information principles (s 10) require that uncertainty and the absence of information are not reasons for failing to provide for utilisation at levels considered to be sustainable. The principles have been taken into account, and appropriate caution exercised in the proposals for scampi TACs.

SCAMPI (SCI) – FINAL ADVICE

Introduction

- 1 This final advice section provides MFish’s recommendations on the sustainability measures and other management controls to apply for scampi stocks to be managed within the Quota Management System (QMS) as from 1 October 2004.
- 2 MFish suggests that you read this final advice section in conjunction with the preceding initial position paper (IPP) and its annexures. Stakeholders were consulted on MFish’s initial proposals, and submissions received in response are summarised in this final advice. MFish recommends that you read the copies of full submissions that are attached as Appendix A.
- 3 Since the IPP was released, Parliament has considered the Fisheries Amendment Bill No 4, and voted for its passage as the Fisheries Amendment Act (No 2) 2004. The Amendment Act introduces scampi into the QMS from 1 October 2004 and, additionally, specifies the Quota Management Areas (QMAs) that will apply to scampi within the QMS.
- 4 The structure of this final advice section follows the structure and headings used in the IPP, with the exception of the discussion of supplementary consultation outlined immediately below in paragraphs 5 to 12.

Consultation supplementary to the IPP

- 5 Shortly after the IPP was released, MFish consulted stakeholders and interested parties by way of a letter (attached as Appendix B) explaining the proposal to revoke existing catch limits for scampi once QMS entry has been achieved.
- 6 Currently, a catch limit and commercial catch limit is in place (*Gazetted* under s 11 of the Act) for scampi management areas 1 to 9. Those limits set the output controls (constraints on catch) that apply under the non-QMS management regime. This final advice recommends that you set TACs and TACCs for scampi stocks to apply from 1 October 2004. At that time, the existing non-QMS catch limits and commercial catch limits will be redundant, and hence revocation is proposed.

Submissions

- 7 **AMALTAL Fishing Company Limited** (AMALTAL) submits that it does not support the intention to revoke existing scampi catch limits until QMS introduction.
- 8 **Sanford Limited** (Sanford) supports the revoking of existing catch limits as from the date of scampi stocks entering the QMS.
- 9 **Mayor Patrick F Smith of the Chatham Islands** (The Mayor) submits that “revoking existing catch limits and commercial catch limits for scampi does not and

will not alter my Island's stance and claims for quota allocation to the Chatham Islands, in perpetuity".

- 10 **Te Ohu Kai Moana (TOKM)** agrees that the existing catch and commercial catch limits will not be required when QMS entry of scampi proceeds, and has no objection to the revocation of catch limits at that time.

MFish discussion

- 11 It appears that AMALTAL has misinterpreted MFish's proposal, and is concerned that catch limits could be revoked before QMS introduction. MFish has written to AMALTAL to clarify the proposal, explaining that MFish proposed revoking the existing catch limits and commercial catch limits for scampi only once scampi stocks enter the QMS. Under QMS management, the TACs and TACCs will replace the redundant non-QMS catch limits.
- 12 The Mayor's views appear to relate to higher-level policy regarding allocation of quota to the Chatham Island people, rather than to the rationale for revoking existing catch limits as explained above. The Mayor's views, and views submitted by other parties on the socio-economic implications of allocations and TAC levels, are addressed later in this document in the section dealing with setting the TACs.

Key issues

Submissions

- 13 Simpson Grierson submits on behalf of **Vautier Shelf Co No 14 Limited** (Vautier) its disappointment with the approach taken by MFish. Vautier notes that the dearth of scientific information has been evident for many, many years and it is a justified criticism that there has been a lack of urgency in addressing this.
- 14 Submissions were received noting differing views on whether or not a sustainability concern exists in SCI 2. Those submissions are summarised and discussed below in the section that deals with the rationale for the proposed TACs, TACCs, and allowances.
- 15 The **Royal Forest and Bird Protection Society (RFBPS)** and **Environment and Conservation Organisations of NZ (ECO)** submission addresses both the scampi IPP and the proposals for sustainability measures under consideration as part of the annual review process. The submission notes the view that MFish has a poor record of implementing environmental issues in its sustainability process, and that the groups are looking forward to greater commitment for action prior to the next fishing year.
- 16 The RFBPS and ECO submit that the IPP does not consider all the obligations on a decision maker under sections 5, 8 to 10, and 11 to 14 of the Act. They suggest that there is little consideration of international obligations and those concerning marine biodiversity and habitats of particular significance to fisheries management.

MFish discussion

- 17 In response to Vautier’s criticism about the dearth of scientific information, MFish notes that research to develop a reliable technique for estimating scampi abundance has been progressing steadily. The photographic methods that have been developed, and have been used in scampi areas 1, 2, and 3, are delivering useful results. However, there remain aspects of scampi behaviour and habitat that complicate the interpretation of survey results. Further research in those areas is required and is being developed through the relevant research forums.
- 18 MFish recognises the statutory requirement (under the s 10 information principles) to consider the best available information to inform decisions under the Act. MFish considers that the best available information has been used to inform the initial proposals and the final recommendations provided herein.
- 19 MFish notes that generic considerations under sections 5, 8 to 10, and 11 to 14 are addressed in the IPP section on “*Statutory Obligations and Policy Guidelines*”. It is MFish’s view that the provisions of the Fisheries Act 1996, and the actions recommended in this final advice, are consistent with New Zealand’s obligations under international instruments.
- 20 MFish’s obligations to future generations, and the need to avoid, remedy, or mitigate the effects of fishing on the aquatic environment are components of the purpose of the Act. MFish considers that the recommendations in this advice are consistent with that purpose, being to provide for utilisation of fisheries resources while ensuring sustainability. Setting output controls (TACs and TACCs) as proposed provides for utilisation at the level that is considered to be sustainable, based on the best available information. The effects of scampi fishing on the aquatic environment are acknowledged, and taken into account in recommending the TACs.
- 21 MFish notes that the requirements under ss 11 to 14 are also addressed in the IPP. The rationale for choosing between the available tools for setting TACs (ss 13, 14, 14B) and the matters to be considered under s 11 are discussed in the IPP with reference to MFish policy guidelines.
- 22 Further analysis of the matters raised by the RFBPS and ECO is provided later in this document in the section on “*Environmental considerations*”.

Management options

Submissions

- 23 **AMALTAL** submits its agreement with the nature and extent of the proposals for scampi total allowable catches and other management controls.
- 24 OCEANLAW NEW ZEALAND submits on behalf of **Barine Developments Limited** (Barine) that it has no faith that its submissions will be given any, or any proper consideration, but it makes them just the same.
- 25 Barine submits its views regarding the government’s endeavour to introduce scampi into the QMS by way of legislation, and that it considers those endeavours to be

unlawful and unconstitutional. Barine submits that the Fisheries Amendment Bill (No 4) (the Bill) proposing QMS entry for scampi constitutes a complete renouncement of the principles of fairness and equity implicit in the 1996 and 1983 fisheries legislation, of common law principles of natural justice, and of the Bill of Rights, and is contrary to public policy. Barine's view is that the IPP proposals, as part and parcel of the government's strategy for scampi, are tainted with the characteristics described above for the Bill, and so are also unlawful and unconstitutional.

- 26 Barine submits that MFish's principal purpose in proposing the sustainability and other management measures in the IPP is to promote the introduction of scampi into the QMS as foreshadowed in the Bill.
- 27 Foy & Halse Barristers & Solicitors submit on behalf of **Petromont Holdings Limited** (Petromont) that the Bill to introduce scampi into the QMS should not proceed in its current form so far as scampi allocations are concerned. Petromont notes that it has a s 329 review outstanding, and that it would be premature to introduce scampi into the QMS or consult on sustainability measures until all outstanding reviews have been dealt with.
- 28 Petromont's submission deals more with the rationale and timing for introducing scampi into the QMS, than with matters relating directly to the sustainability and management measures proposed in the IPP. Petromont submits its views regarding past events that have affected fishers' access to scampi, their catch histories, the proposed allocations detailed in the Bill, and the effect which the proposed QMA boundaries and TACCs will have on Petromont's allocations.
- 29 Petromont notes its opposition to the setting of 'interim' catch limits for scampi in QMAs 1 and 2 (during the early 1990s), and the effect that those limits had upon its legitimate expectations that it would land certain quantities of scampi. The submission also raises matters regarding delays in obtaining authorisation for the company's vessel to start scampi fishing in the early 1990s, and the effects of those delays on its catch history before the 'interim' catch limits were imposed.
- 30 Petromont also opposes the proposed alteration to QMA boundaries for scampi in areas 3, 4, 6A, and 6B, noting the effect of the proposals on the quota allocation Petromont might receive. Petromont submits that, since it had not received earlier proposals (in January 2001) to alter QMA boundaries for scampi, it had not been in a position to make submissions upon the proposals and it would be a breach of natural justice to change boundaries as proposed. Petromont suggests that the injustices arising from the proposals could be remedied by amending the Fisheries Act to address the legitimate expectations it had to receive individual catch entitlements in areas 3 and 6B based on the 1993 fishing year.
- 31 Petromont requests that should scampi not enter the QMS until 2005, MFish should urgently re-impose vessel limits and restrict vessel numbers to those in effect prior to the Vautier Court of Appeal decision. Petromont expresses concerns about the damage occurring to the benthic environment caused by heavy gear towed by large vessels in the fishery currently.

- 32 **Sanford** supports the introduction of scampi into the QMS, and the general framework proposed in the IPP.
- 33 **Simunovich Fisheries Limited** (Simunovich) submits its support for all of the MFish preliminary recommendations.
- 34 **TOKM** agrees that scampi would be managed most suitably under s 13 of the Fisheries Act 1996 (the Act).
- 35 TOKM submits its relief that QMS introduction will finally provide access to the scampi fishery for Maori, which is something it has been seeking for 12 years. However, TOKM notes its concern over the delays to QMS introduction, and points to media reports suggesting that those delays might prevent the introduction process being completed by 1 October 2004. TOKM submits that any further delay will expose you and MFish to action for failure to meet the terms and intent of the 1992 Deed of Settlement. On that basis, TOKM requests a clear statement from you or MFish on whether or not scampi will enter the QMS on 1 October 2004.
- 36 TOKM also submits its concern at the reported lack of progress by MFish regarding the settlement of the compensation matters recommended by the Primary Production Select Committee. TOKM notes its expectation that MFish will settle those disputes and that no further delays to QMS entry will occur.
- 37 **The Mayor** objects to the fish species scampi in the Chatham Islands region being introduced into the QMS until the Crown and the islands can utilise the full principle of partnership and so determine the percentage of quota ownership for all regional stocks to be made available to the Chatham Islands in perpetuity to enable their future financial security and autonomy.
- 38 The Mayor states that there is a statutory obligation on the Crown to recognise the unique situation and geographical positioning of the Chatham Islands. He suggests that the if the Crown has a closer look at the purpose of the Fisheries Act 1996 and international agreements, it will recognise the importance of the Chatham's fishing zone to the islands and their socio-economic future.
- 39 The Mayor proposes that the islands should be assessed as a separate regional area, and not as part of "QMA 4 to the east of the 180° meridian, including the waters surrounding the Chatham Islands", but remain at the original 200 mile boundary.
- 40 The Mayor cites the examples of orange roughy and bluenose to illustrate his fear yet again that the islands will forego a regional asset under application of s 19 of the Act. The Mayor asks who will benefit from the creation of the new SCI 4A area, and proposes that it will be large fishing companies, who, in partnership with MFish, research and are allocated species in the Chatham Islands region where the companies continue to race for stock and individual quota becomes theirs by right.
- 41 The Mayor suggests that stock sustainability has never been accomplished in any assessment of any species historically defined for the Chathams Islands region, and that every species within the region has been detrimentally affected long term.

- 42 The **Chatham Islands Enterprise Trust** (The Trust) notes that it has been waiting for several years for scampi to enter the QMS. It points out that s 19(3) and 49(4) were included in the Act specifically to recognise past injustices regarding quota allocation to Chatham Islands fishers, and to prevent injustices occurring in the future when new species are introduced.
- 43 The Trust notes that the legislation has been working, and allocation of quota has been made for a number of species introduced over the past few years, with an outcome of importance in the maintenance and development of the Chatham Islands fishing industry.
- 44 The Trust does not comment on the general proposals in the IPP, but concentrates on the issues of allocation to people of the Chatham Islands. The main concern appears to be about the possible effects of the proposed management arrangements (stock boundary changes as defined in the Amendment Act, and the sustainability measures for SCI 3 and 4A proposed in the IPP) on that allocation. The Trust quotes a MAF Fisheries document of 1990-91, that states scampi catch in Area 4 at that time was 23 tonnes under a competitive limit of 60 tonnes. The Trust notes that the present catch limit for Area 4 is 250 tonnes, and infers that a substantial surplus of quota will be available for allocation to the Trust. The Trust expresses concerns regarding the unconfirmed suggestions that ‘surplus’ quota might be used to compensate certain fishers’ grievances.
- 45 The Trust requests urgent responses to three questions, and MFish will provide those responses directly to the Trust. However, for your information, their questions can be summarised as follows:
- How much quota would be allocated to the Crown in QMA 4 if the stock boundaries for QMAs 3 and 4 were not changed and quota was based on catch histories?
 - How much quota would be allocated to the Crown in the new SCI 4A stock boundary as proposed in the IPP if quota was based on catch histories?
 - What documentary evidence is there of the informal separation of QMA 4 at the 180 degree meridian for stock monitoring purposes?
- 46 **Vautier** notes its previous submissions regarding the proposed amalgamation of areas, and that its views have not altered. In its previous submissions on scampi management proposals, Vautier has stated that it sees no reason to change the current scampi management areas. Vautier has expressed its expectation that allocations in the current areas 3 and 6B should be on the basis of catch history since 1993.
- 47 Under the Official Information Act 1982, Vautier requests copies of submissions by other parties in relation to the IPP.

MFish discussion

- 48 MFish notes that AMALTAL, Simunovich, Sanford, and TOKM support the TACs, allowances, TACCs, and regulatory amendments proposed for scampi in the IPP.

- 49 Barine submits that the proposals set out in the IPP are part and parcel of, and facilitate, the unlawful and unconstitutional overall strategy of government to introduce scampi into the QMS by legislation. Barine's position is that this makes the proposals contained in the IPP unlawful and unconstitutional. MFish notes that the sustainability and other management controls for scampi stocks proposed in the IPP are dependant upon the introduction of scampi into the QMS. However, they are not dependant upon the method of introduction and would remain the same whether introduction was by legislation or otherwise under the Fisheries Act 1996. Any issues Barine has with the method of introduction of scampi are best addressed through the introduction process and are not a relevant consideration when setting sustainability and other management controls.
- 50 MFish's view is that the sustainability and management measures are not designed as tools to promote QMS introduction, as alleged by Barine, but required by the Act in order to support the management measures and processes under the QMS, regardless of the mechanism for introduction. The TACs, TACCs, allowances, and other measures proposed in the IPP and recommended in this final advice are consequential to the introduction of scampi into the QMS, as decided by Parliament. MFish notes, in response to TOKM's submission, that the passage of the legislation is a clear statement that scampi will enter the QMS on 1 October 2004.
- 51 The IPP proposals are supported by the best available information, consistent with the information principles under s 10 of the Act (described in paragraph 31 on page 7 of the IPP and in paragraph 82 below). The IPP notes that the proposals will form the basis for a review of the non-QMS catch limits and commercial catch limits should scampi stocks not be introduced into the QMS on 1 October 2004. That indicates that the sustainability and other management control measures are being reviewed to take into account the best available information, rather than to promote QMS entry as alleged by Barine.
- 52 Petromont submits that it is premature to consider introducing scampi into the QMS until all outstanding section 329 reviews have been deal with. Petromont's s 329 review concerns the decisions and purported decisions of the Director-General of MAF made in respect of its permit prior to October 1996. Petromont's submission does not directly address the proposals set out in the IPP, but is more specifically concerned with the timing of the introduction of scampi. MFish will respond directly to Petromont on its submission and its requests regarding a process for dealing with its s 329 review. MFish notes that the introduction of scampi into the QMS does not mean that Petromont's section 329 review cannot be completed as required by the Act. However, for the purposes of this paper and the setting of the sustainability and other management controls for scampi, the issue raised by Petromont is not a relevant consideration because it relates to permitting decisions and not to broader sustainability measures.
- 53 The 'interim' catch limits that were set for scampi in areas 1 and 2 were based on the best estimates of sustainable catches that were available in the early 1990s. Catch limits in both areas have remained stable since the 1991-92 fishing year. In recent years, however, concerns have arisen regarding the sustainability of the current catch limit for SCI 2. Those concerns are described in the IPP and action to address the concerns is recommended in the section dealing with SCI 2 in this final advice.

- 54 MFish notes that matters concerning previous fishery access, catch limits, catch histories, and allocation of quota are not relevant considerations in your decisions regarding sustainability measures for scampi. MFish notes that sustainability measures are set to achieve the utilisation and sustainability purposes of the Act, and catch histories will determine the proportional shares fishers are allocated within the sustainable catch levels you decide. The effect that the TAC and TACC levels will have on utilisation of scampi stocks is discussed further below under the heading “*TAC, TACC, and allowances*”.
- 55 The Mayor’s views regarding the allocation of quota to Chatham Islanders suggest that he does not believe the current provisions under s 19(3) (and s 49(4)) of the Act adequately provide for Islanders’ interests, and he implies that s 19(3) is not being applied properly. MFish notes that those sections expressly provide for allocation of all Crown quota for the area (should a relevant QMA be created) to the Chatham Islands Enterprise Trust. MFish notes that the submission of the Trust directly refers to the purpose of ss 19(3) and 49(4), and comments that the legislation has been achieving its purpose when new species have been introduced into the QMS.
- 56 MFish has taken the provisions of s 19 into account, and a separate QMA (designated in the Amendment Act as SCI 4A) has been established for the waters surrounding the Chatham Islands. The allocation provisions under the Act will ensure that any quota allocated to the Crown for that area will be transferred to the Trust for the benefit of Chatham Islanders. The extent of that transfer will depend on the existing catch history in the area and the TACC that is set. The allocation processes are conducted separately to the setting of sustainability measures.
- 57 MFish notes that the stock boundaries for scampi have been considered within the process for progressing the Fisheries Amendment Act (No 2) 2004. Consideration of the merits of, or changes to, those boundaries is not a part of the advice being provided in this paper. MFish notes that Petromont made strong submissions to the Select Committee when it was considering the QMAs that should be used in managing scampi fishing. The Committee, when reporting back on the Bill, noted that many submitters opposed the new scampi boundaries. The Committee, however, recommended that the proposed QMAs should be used. MFish notes that the stock boundary for SCI 4A established by the Amendment Act encompasses the known scampi grounds in the waters surrounding the Chatham Islands, and scientific advice is that the population of scampi there can be managed effectively as a unit.
- 58 Detailed and reliable information on the abundance and yield of scampi in SCI 4A is not available. MFish has used the best available information to underpin the proposed TAC and TACC, drawing on the levels of catch in the area over time, the performance of the fishery, and the extent of habitat suitable for scampi within the QMA. Given that the area is large, and fishing has been sporadic, MFish believes that the TAC and TACC proposed in the IPP are likely to be sustainable, at least in the short term. Information from the fishery, and from new research techniques, should allow improved estimates of abundance and yield to be determined over time and ensure the ongoing sustainable utilisation of the stock.
- 59 In response to the Trust, MFish notes that the rationale for changes to stock boundaries and the matters affecting fishers’ catch histories and allocations of quota are not valid considerations when setting sustainability measures. Allocations and

changes to stock boundaries are matters that have been dealt with in the passage of the Fisheries Amendment Act 2004 (no 2).

- 60 You should note that MFish believes that the proposal to define the new SCI 4A is consistent with s 19(3) of the Act. Establishing the SCI 4A area encompassing the waters surrounding the Chatham Islands requires all quota for that area that is allocated to the Crown to be transferred to the Trust. Once the sustainability measures have been set for scampi, the allocation process will determine the extent of any quota allocated to the Crown, and hence available for transfer to the Trust.
- 61 In reply to the Trust's questions, MFish notes that the scampi catch histories for QMA 4 exceed the current catch limit and would provide no allocation to the Crown in QMA 4 if existing area boundaries were to be maintained. Establishing the new SCI 4A area also provides for no quota being allocated to the Crown under the TACC proposed in the IPP. MFish notes that the annual reports from the research Plenary sessions since 1997 provide commentary regarding the informal separation of QMA 4 (into western and eastern parts) at the 180 degree meridian for stock monitoring purposes. Various other research and management reports also refer to this separation, and copies will be provided to the Trust.
- 62 The sustainability and management measures proposed in the IPP and recommended in this final advice were developed to be consistent with the scampi stock boundaries defined in the Amendment Act. Submitters, including Petromont, the Mayor, and the Trust, have commented on the effect that the proposed TACs will have on the allocation of quota rights, and hence on socio-economic outcomes. MFish provides further discussion of those matters below, in the section addressing TACs.
- 63 A number of submitters are critical of previous management decisions by MAF in the early 1990s. They make reference to Court cases, the Parliamentary inquiry into scampi management, and to the Inquiry conducted by the State Services Commissioner. MFish notes that, following the inquiries into the management of the scampi fishery, the Primary Production Select Committee recommended remedies for fishers affected by the matters regarding previous access to the scampi fishery, as well as the effects on catch history and allocation of quota, and a separate process to effect those recommendations is currently underway.
- 64 Vautier's request for information under the OIA has been responded to directly by MFish.

Rationale for management options

TAC, TACC, and allowances

Submissions

- 65 **Barine** submits that the TAC and TACC for SCI 2 should be the higher of the proposed options because it does not believe that a reduction in the TAC or TACC will guarantee rebuilding of the stock if depletion has in fact occurred. Barine notes that the TACC alone does not constitute a comprehensive management plan either outside or inside the QMS, and QMS management will not by itself cure all the

potential sustainability problems. Barine submits that other measures will be required to ensure sustainability, recovery of stocks, and protection of nursery grounds, the latter being particularly critical in SCI 2. Barine believes that such other measures are obviously under consideration by MFish and must be adopted. Barine submits that the fishers might need relief from the extraordinarily high levies that apply for scampi should the TACC not be caught in any year.

- 66 Barine submits for SCI 3 that it deplores the fact that the proposed new boundary and TAC/TACC for SCI 3 will give Simunovich Fisheries Limited not only the full benefit of its 1991–92 catch history in SCI 4 (which the Courts have said was unfair), but also the same percentage rate of benefit from QMA 3, which the Courts and Inquiries have implied ought to have been allocated in 1992 to other fishers.
- 67 Barine submits for SCI 5, 7, 8, and 9 that there is no empirical basis for the TACs and TACCs proposed in the IPP.
- 68 **Petromont** submits its opposition to the basis of the allocations of scampi quota proposed in the Amendment Act. Petromont describes the effect that those allocations (after the necessary allocation of 20% to Maori) would have on its viability to sustain a scampi vessel, should TACs and TACCs be set as proposed (and further details are provided in the attached submission). Its submission is that only two companies (Simunovich and Sanford) would remain viable scampi fishers if the QMS introduction and allocations of scampi proceed as proposed.
- 69 The **RFBPS** and **ECO** submit that they cannot support the retention of the current catch limits for scampi because of the environmental implications of scampi trawling. Their submission refers to research that shows scampi fishing is affecting benthic species biodiversity. They raise issues regarding bycatch in the scampi fishery, and the food subsidies for scavenger species that can be provided by discarding of bycatch. The RFBPS and ECO suggest that steps must be taken to introduce no trawling areas within the target depth range for scampi.
- 70 The RFBPS and ECO submit that they would support TACCs for SCI 1 at 90 tonnes, SCI 2 at 140 tonnes, SCI 6A at 200 tonnes, SCI 6B at 30 tonnes, SCI 3 at 250 tonnes, SCI 4A at 60 tonnes, SCI 5 at 40 tonnes, SCI 7 at 75 tonnes, SCI 8 at 5 tonnes, SCI 9 at 35 tonnes, and SCI 10 at 0 tonnes.
- 71 **Sanford** supports the IPP proposals for TACs, and TACCs as proposed in the IPP for SCI 1, 3, 4A, 5, 6A, 6B, 7, 8, and 9, and supports the general rationale underpinning the proposals. Sanford also expresses support for the continuing development of the photographic research methods for determining scampi abundance.
- 72 For SCI 2, Sanford supports option 2 of the IPP that proposes a reduction of the TAC to 210 tonnes. Sanford submits that there is a sustainability concern in SCI 2, and agrees with the combination of factors described in the IPP as indicative of that concern.
- 73 Sanford comments that competitive fishing in SCI 2 has not been conducive to long-term productivity, and that the QMS rights-based system will see effort reduced and catch rates improve. Sanford notes that it will be a substantial quota holder in SCI 2 after QMS entry, and that a conservative management approach in the interim will

allow the fishery biomass to increase from the effects of recent competitive fishing and provide higher levels of utilisation in the longer term.

- 74 For SCI 6B, Sanford submits that the proposed 50 tonne TACC represents a new limit for this vast geographical area, with an unknown extent of scampi habitat. Sanford understands that the proposed TACC was based on the commercial catch limit and estimates of yield that related to the area of the current SCI 6B that is to be included within the new SCI 6A. Sanford supports setting the conservative TACC of 50 tonnes for the new SCI 6B as it would satisfy utilisation whilst being sustainable, recognising that reliable estimates of abundance and yield are not available, but the fishery might be near virgin levels.
- 75 **Simunovich** submits its support for all of the MFish preliminary recommendations, and, in respect of SCI 2, supports the Option 2 proposal for a TAC of 210 tonnes.
- 76 **The Mayor** submits that any increase in tonnage allocation of scampi will increase the detrimental effects on the species' long-term sustainability.
- 77 **TOKM** submits its concern that no satisfactory measure of abundance has yet been established for scampi. It encourages MFish to continue to address the matter so that the current use of a "mishmash" of methods for determining TAC/TACC levels can be improved upon. TOKM also notes that the various methods were used inconsistently between QMAs with varying levels of success.
- 78 TOKM supports the inclusion of allowances for accidental mortality in all TACs set for scampi. It notes that such allowances cover unreported catch of scampi by fishers targeting other species, as well as the incidental mortality of scampi in the target fishery.
- 79 TOKM supports the TAC, TACC, and allowances proposed for scampi stocks in SCI 1, 3, 4A, 5, 6A, 6B, 7, 8, 9, and 10. However, TOKM is concerned at the somewhat mixed sustainability messages available in the proposals for SCI 2, and accordingly supports the more conservative Option 2 proposals.
- 80 **Vautier** submits that the TACCs in all areas except SCI 2 should be increased by 25 % to cater for the allocation to TOKM and not result in a reduction of allocations to other fishers. Vautier supports its view by claiming that there is no clear indication of sustainability concerns.
- 81 Vautier submits that the IPP options for SCI 2 are too narrow, and fail to address the sustainability concerns adequately, providing no balance between dual purposes of the Act – sustainability and utilisation. Vautier proposes that the better course is to prohibit fishing within the currently fished area of SCI 2 for a limited period, and leave the remainder of the area available to fishers. Vautier proposes that the TACC for the remainder of SCI 2 should equate with the current catch limit.

MFish discussion - general matters in submissions and stocks other than SCI 2

Information on stock abundance and yield

- 82 MFish notes that the information principles of the Act (s 10) require that decision makers take into account that:
- Decisions should be based on the best available information;
 - Decision makers should consider any uncertainty in the information available in any case;
 - Decision makers should be cautious where information is uncertain, unreliable, or inadequate;
 - 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.
- 83 It is those mandatory relevant considerations that give rise to different types of information being used to determine the TACs for different scampi stocks, depending on the type(s) of information that MFish science and management expertise considered to be the best available for each stock. MFish notes that the uncertainty in the available information, and its effect on determining sustainability measures, was discussed in developing the initial proposals. In the face of uncertain, unreliable, or inadequate information, MFish advice has applied caution in balancing the utilisation benefits against risks to sustainability. MFish believes that the information principles have been appropriately addressed in determining the measures recommended in this final advice.
- 84 MFish notes that the photographic survey method shows the best promise for determining scampi abundance in the future. Interpreting currently available indices of scampi abundance (including photographic results) remains difficult, however, because of unexplained variability in the available indices. Scientific opinion is that the variability is linked to scampi behaviour, and research will be required to improve our understanding of scampi behaviour and its drivers. Population modelling is also being supported to assist with stock assessment for scampi.
- 85 For SCI 5, 7, 8, and 9, the IPP explains how the proposed TACs and TACCs were derived. Until the developing photographic methods have been used to determine estimates of scampi abundance in SCI 5, 7, 8, or 9, or until substantial fishing has occurred, reliable empirical estimates are unlikely to be obtained. MFish considers that the extrapolation of scampi density from known fishing grounds across the spatial extent of suitable scampi habitat in SCI 5, 7, 8 and 9 (as explained in the IPP) provides the best available information to inform your decisions on initial TACs and TACCs for those stocks.

Effect of the proposed TACs and TACCs on utilisation

- 86 Vautier proposes that all TACCs save for SCI 2 should be increased by 25 % to account for allocation to Maori. Other submissions note the effect that the proposed TACs and TACCs will have on the quota that they are likely to be allocated, and the economic implications for them.
- 87 The Act contains provisions, under s 50G, for compensation to fishers for reduction of quota (relating to species on the Fourth Schedule) where the reduction results from the required allocation of 20 % to Maori under s 44. MFish notes that scampi is not one of the species on the Fourth Schedule.
- 88 MFish does not consider that allocation of quota is a relevant consideration when determining the level at which to set TACs. However, s 13 does require you to have regard to such social, cultural, and economic factors as you consider to be relevant when determining the way in which, and rate at which, to move a stock towards the level that can produce the MSY.
- 89 There are no reliable estimates of virgin biomass (B_0) or the biomass that will support the MSY (B_{MSY}) for any scampi stock. There are also no stock assessment or yield estimates for any scampi stock on which to base your decisions regarding TACs. There is therefore no definitive information on which to base determinations of the current status of scampi stocks in relation to B_{MSY} , or the way in which and rate at which any scampi stock might be moved towards the B_{MSY} level. However, MFish has used the best available information from recent research and the performance of the fisheries to determine its proposals for sustainable TAC levels from all scampi stocks.
- 90 Increases to the TACs have been proposed for the new SCI 3 area where the available information indicated that increased catch was likely to be sustainable. In areas other than SCI 2, the available information is equivocal. No clear sustainability concerns are evident, but the performance of the fisheries (as indicated by CPUE trends) also does not clearly indicate that greater catches would be sustainable in the long term, and satisfy the s 13 objectives of maintaining stocks at or above the B_{MSY} level.
- 91 Setting TACs at levels greater than those proposed for any stock could have economic benefits, but the available information does not allow the attendant sustainability risks to be evaluated reliably. The long-term risk to sustainability of increasing TACs and TACCs by 25 % (or another amount) cannot be determined at this time. Section 10 requires that you consider the uncertainty in the available information, and that you should be cautious when information is uncertain, unreliable, or inadequate. MFish interprets that caution to apply in how you might achieve a balance between the utilisation opportunities and risks to sustainability that are presented by the available options.
- 92 The initial TAC level (and TACC) for SCI 4A is an important factor for the Chatham Islands Enterprise Trust in that it will determine whether or not the Trust receives an allocation of scampi quota. Should there be 'headroom' between the sum of catch histories in the area and the TACC level, then quota to the extent of the 'headroom' is allocated to the Crown. Section 49(4) requires that quota to be transferred to the Trust.

- 93 Under the TAC and TACC levels proposed in the IPP (126 and 120 tonnes respectively), the Trust would receive no allocation. The Trust could obtain a share in the fishery by purchasing quota, or it could participate in the fishery by purchasing ACE, if and when available. However, not receiving an allocation at the time of QMS entry will deny the Trust potential economic benefits that would flow from being allocated rights to the scampi fishery in the waters surrounding the Chatham Islands.
- 94 Increased TACs generally could deliver utilisation benefits in the short term, but the available tools for monitoring stock abundance and determining any declines in abundance have not proven to be reliable. Sustainability risks might be indicated if the performance of the fishery in any area showed a decline. However, fishery performance (based upon CPUE trends) has not proven to be a reliable indicator of the abundance of scampi, and would not provide an appropriate basis for risk assessment.
- 95 MFish considers that the developing survey techniques for scampi will enable improved estimates of abundance and yield to be determined in the future. Those estimates should provide for the further consideration of utilisation opportunities in the scampi fisheries to be balanced against the requirement to ensure sustainability into the future.

Environmental implications of TACs and TACCs

- 96 The RFBPS and ECO submits that they cannot support the current catch limits because of the environmental implications of scampi trawling. The TACCs supported by RFBPS and ECO are lower than those recommended by MFish for SCI 1, 2, 3, 4A, and 6B, although no specific rationale for each suggested TACC is provided by RFBPS and ECO.
- 97 MFish notes that the adverse effects of scampi trawling were raised in the IPP as a key issue for consideration, and discussion was provided in Annex Three at paragraph 204(f) on page 66 of the IPP.
- 98 There is some scientific evidence of possible effects of scampi trawling in an area within the Bay of Plenty that has been fished repeatedly for scampi. In that area, the species composition of benthic invertebrates is different compared with areas not fished. However, the environmental effects of scampi trawling generally are not known to be particularly adverse compared with trawling in general.
- 99 MFish considers that the spatially discrete nature of the scampi fishery within each QMA, and the recommended levels of the TACs/TACCs, mitigate adverse effects. Under the recommended TACs, fishing effort is likely to be focused on the existing exploited areas. The benthic environment at similar depths outside the fished areas is not affected by scampi trawling.
- 100 MFish is not aware of risks to the maintenance of aquatic biodiversity generally arising from scampi fishing at the recommended TAC levels, nor have habitats of particular significance for fisheries management been identified within the areas and depths suitable for scampi. MFish notes that past analyses of intensively fished areas within scampi stock boundaries have not indicated that the effects of fishing on the environment supporting scampi are such that catch rates can only be maintained by moving to new areas.

101 Further discussion of the matters raised by the RFBPS and ECO is provided below in the section on “*Environmental considerations*”.

MFish discussion regarding SCI 2 options

- 102 In response to Barine’s submission on SCI 2, MFish agrees that a reduction in the TAC or TACC cannot guarantee a stock rebuild, nor does it make up a management plan. However, MFish notes that the TAC is the primary tool available under the Act to ensure the sustainability of a stock, as defined by the objectives under s 13 (maintain or move stock size towards or above the size that will produce the MSY). The information available for SCI 2 is still characterised by some uncertainty, and the IPP proposals reflect that. MFish notes that the majority of submitters who commented on SCI 2 support the option to reduce the TAC for SCI 2 as a measure to at least reduce the rate of apparent stock decline until more information on stock status and yield is available.
- 103 Barine does not provide the details of the other measures it believes are required and under consideration by MFish to ensure sustainability, stock recovery, and particularly protection of nursery grounds in SCI 2. While MFish is aware that the smaller scampi are generally found closer inshore in shallower waters than large scampi, MFish considers that scientific information is not available to differentiate scampi nursery grounds within SCI 2. Providing protection for scampi nursery grounds would be difficult without being able to define the location and extent of those grounds.
- 104 MFish considers that one of the benefits of the rights-based QMS management system is that fishers have incentives to plan for maximum value from their catch, rather than the incentives under competitive fishing to maximise quantity. Given that larger scampi are worth more in the marketplace than small scampi, MFish considers that fishers will have the correct incentives under QMS management to fish in areas where larger scampi are more abundant, and a natural consequence will be to keep fishing effort away from the nursery grounds. Further, MFish notes that those incentives should encourage scampi stakeholders to develop a fishery plan for SCI 2 that will enable them to determine the best means to deliver their desired outcomes from the fishery, including options for protecting nursery areas.
- 105 Vautier suggests managing SCI 2 by prohibiting fishing within the current fishery grounds for a limited time, and making the TACC available for fishers to take from the remainder of the stock area. MFish notes that an important consideration in managing the scampi fishery is the environmental effects of scampi trawling. In addressing the Act’s requirements to avoid, remedy, or mitigate any adverse effects of scampi fishing, MFish has taken into account that scampi fishing typically occurs on spatially discrete grounds that represent confined areas within the overall stock boundaries. The strategy is that any adverse effects are confined to those grounds, and the remaining environment (and perhaps scampi habitat) within the stock boundaries is not affected by scampi fishing.
- 106 MFish notes that the RFBPS and ECO submission supports a reduction in the TAC for SCI 2 down to 140 tonnes, based on concerns regarding the environmental implications of scampi trawling. MFish refers you to paragraphs 97 to 101 above for discussion of those environmental matters. MFish’s preference for a 20 % reduction in the TACC for SCI 2 is likely to reduce fishing effort in the QMA, and hence reduce

the effects of fishing in the exploited area of the QMA. MFish considers that a reduction of the extent proposed by the RFBPS and ECO will have substantial economic impact on the industry. MFish considers that the available information on risks to the sustainability of the fishery and any adverse effects of fishing in SCI 2 do not warrant such a reduction in the utilisation of the fishery.

Social, cultural, and economic factors

Submissions

107 Some submissions referred to the socio-economic effects that would be associated with the likely allocation of quota under the proposed TACs. Those submissions are summarised in the section above.

MFish discussion

108 MFish refers you to the section above wherein the effects of TAC levels on the utilisation potential in scampi stocks has been discussed.

Environmental considerations

Submissions

109 The **RFBPS/ECO** submission suggests that MFish needs to consider how environmental considerations are better integrated with pure single-stock assessment considerations, with bycatch, adverse effects of fishing, maintenance of biodiversity, and other such factors being central issues in setting catch limits. The submission also notes that MFish needs to consider the obligations regarding future generations and the need to avoid, remedy, or mitigate the effects of fishing on the aquatic environment.

110 Their submission refers to six key issues regarding the management of fisheries-related impacts on the aquatic environment that were identified through consultation by the RFBPS and ECO on the Environmental Management Strategy. Those issues relate primarily to problems perceived with institutional, legal, and policy frameworks under which fisheries-related impacts are managed. The key issues are:

- Limited opportunities for public participation in fisheries management;
- Gaps in information, monitoring, and research capacity;
- Lack of precaution and environmental assessment in decision making;
- Lack of spatial and ecotype approach to policy and planning;
- Dominance of private property rights approach; and
- Lack of recognition of non-extractive use values.

- 111 The RFBPS and ECO submit that New Zealand's international obligations mean that it:
- Has an obligation to protect and preserve the marine environment;
 - Is committed to an ecosystem-based approach to managing the use of natural resources;
 - Is committed to the precautionary approach to minimising risk to the environment; and
 - Is committed to the concept of inter-generational equity.
- 112 The submission notes new information on the impacts of fishing in various areas, and suggests that MFish has yet to respond to that information. The new information of relevance to scampi fisheries arises from research on the impacts of the scampi fishery on benthic species and the adverse impacts of commercial-scale bottom impacting methods including trawling and dredging on benthic species. The RFBPS and ECO suggests that MFish should adopt measures to maintain marine biodiversity and to avoid, remedy, or mitigate the above impacts.

MFish discussion

- 113 MFish refers you to Annex Three of the IPP that contains the initial discussion of environmental considerations.

Environmental considerations

- 114 The purpose of the Fisheries Act 1996 is to provide for the utilisation of fisheries resources while ensuring sustainability. MFish interprets the Act's purpose to convey a positive obligation to provide for utilisation within the sustainability standards so that people can provide for their social, cultural, and economic well-being. The Act defines the obligations to ensure sustainability as being to maintain the potential of fisheries resources to meet the reasonably foreseeable needs of future generations, and to avoid, remedy, or mitigate any adverse effects of fishing on the aquatic environment.
- 115 The environmental principles under s 9 of the Act require decision makers to take into account the following:
- Associated or dependent species should be maintained above a level that ensures their long-term viability;
 - Biological diversity of the aquatic environment should be maintained; and
 - Habitat of particular significance for fisheries management should be protected.
- 116 The Fisheries Act and obligations imposed on decision makers under the Act are consistent with international obligations to which New Zealand is a signatory.

- 117 Consideration of the impacts of fishing is a legal obligation when reviewing management of a fishery. MFish specifically assesses the impact of fishing on associated and dependent species and interdependent stocks by considering whether catch levels of those species in the fishery under review pose a risk to sustainability obligations. Biodiversity obligations are largely addressed by the setting of sustainability measures for individual species. However, where areas of high biodiversity have been identified as at risk from the cumulative impacts of fishing, then management tools have been imposed to avoid the impact (i.e seamount closures).
- 118 Stock strategies (which will combine stocks around fishery complexes) will provide a better opportunity to consider and monitor species interaction issues. By developing stock harvesting strategies around appropriate stock areas and complexes, MFish expects to be able to move further towards the objective of an ecosystem-based approach to fishery management. As more information becomes available, the consideration of interactions between fisheries and the aquatic environment will be improved.
- 119 Specific working groups and research planning forums have also been established to consider environmental issues associated with fishing and develop research and monitoring proposals to address them.

Caution in decision making

- 120 The information principles under s 10 of the Act create mandatory relevant considerations, including taking a cautious approach to fisheries management decisions where information is uncertain, unreliable, or inadequate. Because of the nature of the data and assumptions used to generate fisheries assessments, the results contain inherent variation and uncertainty. Decision makers must take into account the best information that, in the particular circumstances, is available without unreasonable cost, effort, or time. Decision makers must consider any uncertainty in the available information in any case, and be cautious when information is uncertain, unreliable, or inadequate. 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.
- 121 Section 10 provides recognition that when making decisions there is always going to be some level of uncertainty. That uncertainty could be in relation to the information on which the decision is being made, the existence of a risk and/or threat, or, as in many cases, uncertainty in both those areas. Uncertainty in information does not entitle the decision maker to err unreasonably on the side of sustainability or utilisation. Decision makers are required to find a balance between not taking appropriate management measures and sustainability not being achieved, and restrictions being placed on fishing activities leading to the utilisation objectives of the Act not being achieved.
- 122 MFish notes that the information principles have been taken into account in preparing this advice. Where information is uncertain or unreliable this has been drawn to the attention of the decision maker and discussed in the context of the specific decision.

Public participation

- 123 Section 12 of the Fisheries Act 1996 provides for consultation with stakeholders, input and participation of tangata whenua and having regard for kaitiakitanga. The importance of quality participation by all stakeholders is recognised in the three strategies to achieve the MFish goal and vision, which are outlined in the Statement of Intent 2004–05.
- 124 In stock harvesting strategies non-commercial stakeholders will be given opportunities to be involved in management processes in much the same manner as currently occurs. For fishery plans, the Minister of Fisheries will need to satisfy him or herself that interested parties have been consulted and that their views have been given appropriate consideration before the plan is approved. That will provide a clear incentive to encourage interested parties to participate in the development of the plan from an early stage.
- 125 MFish has already established two groups to provide stakeholder input to fisheries management - the Aquatic Environment Research Planning Group and the Aquatic Environment Working Group. MFish is currently establishing regional iwi forums as part of its Treaty Strategy. These forums will be open to representatives of all iwi in the area covered by the forum and will focus on fisheries issues of interest to forum members.
- 126 Currently, MFish is not funded to provide financial support for stakeholder participation in regular consultation processes. In the past two years, MFish has submitted New Initiative Bids to provide for capacity building and funding to enable non-commercial groups to engage in specific MFish management processes. On each occasion the project was deferred in order to resource other more urgent policy matters.
- 127 In the meantime, MFish makes information on fisheries management available to stakeholders (on website, in the 'Bite', press releases) and provides opportunities for members of the public not affiliated with a particular stakeholder group to provide input into management processes.

Rights-based management

- 128 MFish notes that the RFBPS and ECO list the dominance of a private property rights approach as a key issue. MFish notes that the rights-based approach under the QMS is the fundamental cornerstone of fishery management in New Zealand. MFish acknowledges that externalities exist, however, the management system will continue to be improved to provide incentives for fishers to manage and face the true costs of fishing.

Non-extractive use

- 129 MFish's view is that the 'utilisation' referred to in the Fisheries Act relates to extractive uses rather than non-extractive uses. Although MFish does not manage specifically for non-extractive uses, the sustainability measures set to limit take (eg TACs) and manage the adverse effects of fishing on the environment (eg method restrictions and area closures), provide incidentally for a range of non-extractive uses

and values. In addition, other legislation, such as the Marine Reserves Act, provides a means of recognising non-extractive use.

- 130 In the 2003/04 Statement of Intent, MFish included a project to consider further the issue of non-extractive use in the context of managing fisheries resources. Unfortunately, this project was deferred in order to resource other more urgent policy matters.

Compliance information

Submissions

- 131 TOKM submitted concerns regarding the proposed high deemed values for scampi, noting that the high values would serve to encourage discarding or consumption of scampi at sea.

MFish discussion

- 132 MFish addresses TOKM's concerns regarding deemed value levels in the section below dealing with "*Other management issues*".
- 133 MFish also has further evaluated the compliance implications of the proposed regulatory amendment to allow the use of small mesh size for scampi trawling. The conclusion is that a small change is required to the proposed regulation in order to improve the compliance and enforcement regime. MFish proposes that a requirement be included whereby fishers must advise MFish in advance of their intention to use small mesh to fish for scampi.
- 134 The benefits are that MFish will have an ability to monitor the use of small mesh for scampi fishing, and be in a position to take remedial action if concerns regarding the use of small mesh arise in the future. The ability to enforce the use of small mesh is also improved, and only fishers who have advised MFish that they intend to use small mesh would be authorised to do so.

Statutory considerations

Submissions

- 135 **The Mayor** raised issues regarding statutory considerations under the purpose of the Act and the s 19 provisions.

MFish discussion

- 136 Responses to the Mayor's views have been provided earlier in this document when addressing the broader issues he raised.

Other management issues

Submissions

- 137 **Barine** requests (pursuant to the Official Information Act 1982) any information held by MFish relating to how scampi quota in SCI 5, 7, 8, and 9 will be made available to commercial fishers.
- 138 Barine' submission notes its view that, for scampi, 'port price' is a nominal figure set by agreement between permit holders for the purpose of paying crews. For that reason, Barine does not accept that 'port price' is a useful indicator of the value of scampi to commercial fishers.
- 139 Barine submits that the most useful indicator of scampi value to commercial fishers is the export price, and notes export price examples (see page 3 of Barine's submission) that are less than the indicative port price proposed by MFish as a basis for deemed values. Barine suggests that it has probably the highest export price of all scampi fishers, and hence that the deemed values proposed in the IPP are far too high. Barine stresses that the port prices provided in its submission are confidential.
- 140 Barine submits, with reference to SCI 2, that the fishers might need relief from the extraordinarily high levies that apply for scampi should the TACC not be caught in any year.
- 141 **Sanford** submits support for the proposal to regulate mesh sizes to allow for scampi trawling, and remove the current non-QMS fishing permit authorisation.
- 142 Sanford supports the proposal to not include any scampi stock on Schedule 5A of the Act.
- 143 Regarding deemed values, Sanford supports using the proposed high value framework for scampi, and the proposal to not set overfishing thresholds. However, Sanford suggests that, to remove the total economic incentive to take fish without ACE, both interim and annual deemed values should be set higher than the port price, with 200 % of the port price being a minimum. Sanford justifies that view by explaining that scampi is a high value target fishery, being caught, packaged, and frozen at sea to be ready for sale when landed.
- 144 Sanford suggests that the level of scampi catch taken as inevitable bycatch in other target trawl fisheries might exceed the 1 % level noted in the IPP. Sanford proposes that the inevitable bycatch of scampi enhances the need for the Crown to make available the scampi quota or ACE it holds at the commencement of each fishing year. That would ensure fishers have access to ACE and can balance any inevitable bycatch rather than pay deemed values in stocks where the Crown holdings might be as much as 80 % (SCI 6B and SCI 7).
- 145 Sanford submits that access to stocks where the Crown is the major quota holder will be dependant on either purchasing Crown quota or ACE. For that reason, Sanford suggests that there needs to be a process assuring annual access to Crown quota or ACE, via an open and transparent annual tender round prior to 1 October each year.

- 146 Sanford expresses disappointment that the matter of aggregation limits was not addressed in the IPP, and suggests that scampi stocks be placed on Schedule 5 to allow aggregation up to 45 % for every stock.
- 147 **TOKM** submits its support for moving the existing scampi trawl net mesh conditions (the authority to use 80 mm mesh in the net body and 55 mm mesh in the cod-end) that are currently stated on fishing permits into Regulations.
- 148 TOKM also supports the other regulatory amendments that are necessary to implement QMS introduction, including those relating to reporting.
- 149 TOKM submits its dissatisfaction with the deemed value regime generally, and its view that the regime is an encouragement to discard or consume catch of QMS species, particularly bycatch species, at sea and not to report such discards or consumption. TOKM notes its view that those practices are likely to escalate under the deemed value regime proposed for scampi, and that little attempt will be made by most bycatch fishers to obtain ACE because of its likely cost and unavailability. However, that said, TOKM acknowledges that scampi falls into the high value single species category for deemed value purposes, and should be subject to the differential deemed value regime, with the setting of overfishing thresholds being unnecessary at this time. Accordingly, TOKM somewhat reluctantly supports the proposals for annual, interim and differential deemed values.
- 150 TOKM sees no reason to include scampi on Schedule 5A of the Act, and hence agrees with MFish's proposal.

MFish discussion

- 151 MFish notes the general support submitted for all IPP proposals, including deemed values, by AMALTAL, Sanford, Simunovich, and TOKM.
- 152 MFish has responded directly to the OIA request by Barine. However, for your information, the options available for divestment of Crown-held quota include an open public tender, a reserve price mechanism set sufficiently high to ensure sales realise current average market prices, privately negotiated sale by an exclusive broker if reserve tender prices are not achieved, an open process for selection of any quota broker required.
- 153 A range of values, including export price as submitted by Barine, can represent the market value of a stock and provide a basis for setting deemed values. MFish generally has relied on port price for determining deemed values for all stocks because port prices, or an estimated nominal port price, can be determined for all species. Under QMS management, port prices are considered to provide a useful indication of the commercial value of a stock to fishers. Once under QMS management, the access and catch balancing situation for scampi will be the same as for other QMS stocks. Future port price surveys should provide useful indicators of value to commercial fishers and provide a basis for updating the deemed values for scampi.

- 154 TOKM expressed its dissatisfaction with the deemed value regime generally, and also commented that high deemed values encourage fishers to discard or consume catch (particularly bycatch) on board, and not report the catch. TOKM's concern is that such encouragement would escalate under the high deemed values for scampi, and that little attempt would be made by bycatch fishers to obtain ACE because of its likely high cost and unavailability.
- 155 MFish acknowledges the matters raised by Barine and TOKM, and notes that a review of the regime is being undertaken to improve its operation and to align it with the MFish outcomes described in the Statement of Intent.
- 156 MFish refers you to the IPP sections that describe the deemed value regime and its purpose. MFish notes that most submitters support the use of the 'High Value Single Species' guidelines for setting deemed values for scampi, although there are some different views regarding the level of deemed values to apply within those guidelines.
- 157 MFish notes that of the two submissions received commenting on the proposed deemed value level, one suggests the MFish proposal is too high and the other too low. Other submitters do not offer specific comment on the proposed level of the deemed values. MFish considers that the IPP proposals and final recommendations for deemed values are based on the appropriate framework and guidelines for setting deemed values, make use of the best available information, and are within the range of acceptable levels that will achieve the purpose of the deemed value regime. That purpose is to encourage fishers to acquire ACE to cover catch. In the case of high value species, the intention is to remove any profit that might be obtained by scampi catch in excess of the TACCs. In addition, should ACE not be available to cover bycatch of scampi, high deemed values are an incentive to avoid scampi bycatch. MFish notes that the initial recommended deemed values serve as the starting point to support QMS management. Once scampi stocks enter the QMS, and the deemed value framework itself has been reviewed, ongoing updates of deemed values will ensure that the framework is tuned to achieve its purpose.
- 158 Barine also suggested that fishers might need relief from high scampi levies (with reference to SCI 2) should the TACC not be fully caught in a given year. MFish notes that cost recovery in scampi fisheries is on the basis of "beneficiaries pay", and the cost recovery rules determine the costs to be recovered and reflected in the levies to be paid by commercial fishers. For QMS species, costs are determined per quota share, regardless of whether or not the TACC is fully caught. MFish is satisfied that it is operating cost recovery in accordance with the law, and that it would not be appropriate to make changes through this consultation.
- 159 Sanford notes the importance of the Crown making its scampi quota available, particularly in QMAs where the Crown is likely to be the sole quota holder. MFish notes that current policy is that the Crown should not be a quota holder, and refers you to the agreed mechanisms for disposing of Crown quota as discussed in paragraph 152 above.
- 160 Aggregation limits are addressed by s 59(7) of the Act, which provides for you to recommend that the Governor-General adds new species to Schedule 5 following consultation with interested persons. MFish notes Sanford's submission that aggregation limits and the possible use of Schedule 5 for scampi were not matters

consulted on in the IPP. Because there has been no general consultation, it would not be appropriate for MFish to make recommendations regarding aggregation limits in this final advice. MFish notes, however, that aggregation limits and the use of Schedule 5 can be considered by the Minister at any time. Stakeholders in the scampi fishery can make proposals to MFish for the Minister's consideration at any stage. Further, s 60 of the Act provides for individual persons to obtain your consent to hold quota in excess of aggregation limits, subject to conditions and considerations set out in that section.

- 161 MFish notes the general support submitted for the proposals to regulate the trawl net mesh sizes to be used for scampi. MFish has examined the original proposals further to explore opportunities for improving the compliance and enforcement aspects of the regulation. MFish's recommendation that fishers must advise MFish in advance of their intention to use small mesh to fish for scampi is discussed further above in the section on compliance issues.

Conclusion

- 162 A number of issues have been raised in submissions and addressed in this final advice. MFish concludes that those issues do not require changes to be made to the initial recommendations.
- 163 Submissions from Barine, Petromont, The Mayor, the Trust, and Vautier all include issues relating to the rationale for introduction, previous access, catch histories and allocations. MFish considers that those are all matters that have been dealt with via other processes (including the scampi inquiries and passage of the legislation), and are not relevant to your consideration of sustainability measures and other controls as recommended in this final advice.
- 164 AMALTAL, Sanford, Simunovich, and TOKM all support the general IPP proposals for sustainability measures and other management controls for scampi, including those recommending consequential changes to reporting regulations and regulating the mesh sizes required for effective scampi trawling.
- 165 For SCI 2, Sanford, Simunovich, and TOKM support a reduction of the TAC as recommended under Option 2 of the IPP. Vautier suggests that option is too narrow, and proposes closing the current fishing grounds in SCI 2, and allowing the existing catch limit to be taken from grounds elsewhere within the QMA. MFish considers that encouraging fishing on new grounds would create new adverse effects on the aquatic environment beyond the currently fished areas within the QMA 2 boundaries. Barine supports the higher of the TAC options for SCI 2. Barine suggests that a TAC reduction alone will not ensure that the stock rebuilds (if depletion has occurred), and proposes that other measures such as protection of scampi nursery grounds are necessary.
- 166 MFish considers that area-based 'rotational' fishing and protection of nursery areas would be best managed by stakeholders once scampi stocks are managed under the QMS, perhaps within a stakeholder-driven fishery plan. The critical management measures for MFish are to ensure that sustainable output controls are set at the level of stocks, as recommended in this final advice.

- 167 Some submissions noted the socio-economic effects that could be associated with the level of the TACs and TACCs. MFish has discussed the effect that different TAC/TACC levels might have on the utilisation potential of scampi stocks generally. However, MFish considers that, on the basis of the best available information, the recommended TACs and TACCs provide for a reasonable balance between utilisation potential and sustainability risks. MFish notes that increased TACs and TACCs are recommended where the information supports the potential for increased sustainable catch.
- 168 Barine and Sanford suggest that the proposed deemed values are too high and too low respectively. MFish concludes that the recommended deemed values are consistent with the deemed value policy and within the range of values that will achieve the objective of the deemed value framework.

Final recommendations

169 MFish recommends that you:

- a) **Note** the contents of this final advice, including the IPP section.
- b) **Note** the submissions from stakeholders and the MFish discussion.
- c) **Agree** to set a TAC of 126 tonnes for SCI 1 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 6 tonnes; and
 - iv) A TACC of 120 tonnes.

EITHER

- d) **Agree** to Option 1 of the IPP and set a TAC of 258 tonnes for SCI 2 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 12 tonnes; and
 - iv) A TACC of 246 tonnes.

OR (the MFish preferred option)

- e) **Agree** to Option 2 of the IPP and set a TAC of 210 tonnes for SCI 2 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 10 tonnes; and
 - iv) A TACC of 200 tonnes.
- f) **Agree** to set a TAC of 357 tonnes for SCI 3 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 17 tonnes; and

- iv) A TACC of 340 tonnes.
- g) **Agree** to set a TAC of 126 tonnes for SCI 4A 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 6 tonnes; and
 - iv) A TACC of 120 tonnes.
- h) **Agree** to set a TAC of 42 tonnes for SCI 5 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 2 tonnes; and
 - iv) A TACC of 40 tonnes.
- i) **Agree** to set a TAC of 321 tonnes for SCI 6A 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 15 tonnes; and
 - iv) A TACC of 306 tonnes.
- j) **Agree** to set a TAC of 53 tonnes for SCI 6B 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 3 tonnes; and
 - iv) A TACC of 50 tonnes.
- k) **Agree** to set a TAC of 79 tonnes for SCI 7 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 4 tonnes; and
 - iv) A TACC of 75 tonnes.
- l) **Agree** to set a TAC of 5 tonnes for SCI 8 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 5 tonnes.
- m) **Agree** to set a TAC of 37 tonnes for SCI 9 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 2 tonnes; and
 - iv) A TACC of 35 tonnes.
- n) **Agree** to set a TAC of 0 tonnes for SCI 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.
- o) **Agree** to set deemed values for scampi as follows:
 - i) an annual deemed value of \$ 51.30/kg; and
 - ii) an interim deemed value of \$ 25.65/kg.
 - p) **Agree** that differential deemed values apply.
 - q) **Agree** to amend the Fisheries (Reporting) Regulations 2001 to specify the Fishstock codes and QMAs that apply and are to be used by fishers when completing their statutory catch returns.
 - r) **Agree** that once scampi becomes subject to the QMS, the existing non-QMS catch limits and commercial catch limits for scampi will be redundant and should be revoked.
 - s) **Note** that once scampi becomes subject to the QMS, fishing permit conditions applying trawl net mesh size limits for taking scampi (and bycatch) will no longer be appropriate, and will be revoked.
 - t) **Agree** to amend the Fisheries (Commercial Fishing) Regulations 2001 to authorise the use and possession on board of 80 mm mesh in the body and 55 mm mesh in the cod-ends of trawl nets if fishing for, or intending to fish for, scampi and bycatch if fishers first notify the chief executive of MFish in writing of their intention to fish for scampi in a fishing year.
 - u) **Agree** to amend the Fisheries (Commercial Fishing) Regulations 2001 to make it an offence to use or possess on board a vessel trawl nets with 80 mm mesh in the body and 55 mm mesh in the cod-end unless the chief executive of MFish has been notified in writing in advance of a fisher's intention to fish for scampi.

Jim Cornelius
 For Chief Executive
 Ministry of Fisheries

APPROVED/NOT APPROVED/APPROVED AS AMENDED

Hon David Benson-Pope
 Minister of Fisheries

/ /2004

ANNEX ONE

Ref SCI/A26/1

23 August 2004

Dear Stakeholder

QMS INTRODUCTION OF SCAMPI - REDUNDANT CATCH LIMITS

You will have received the MFish Initial Position Paper (IPP) detailing the total allowable catches (TACs), total allowable commercial catches (TACCs), and other management controls proposed for scampi stocks, should they enter the Quota Management System (QMS) on 1 October 2004.

The IPP describes various amendments to management controls that will be required as a consequence of scampi stocks entering the QMS. One consequential change that the IPP does not discuss is that the existing catch limits and commercial catch limits for scampi stocks will become redundant once they are replaced by TACs and TACCs at the time of QMS entry.

MFish advises, therefore, that it will be recommending to the Minister that he revoke the existing catch limits and commercial catch limits for scampi as from the date of scampi stocks entering the QMS.

Should you wish to make a submission on this proposal, please provide your views in writing to John Taunton-Clark, Ministry of Fisheries, PO Box 19747, Auckland (email tauntonj@fish.govt.nz) no later than 21 July 2004.

Yours faithfully

Jim Cornelius
Senior Fishery Management Advisor