INITIAL POSITION PAPER - PROPOSAL TO REVIEW THE TAC FOR THE COROMANDEL SCALLOP FISHERY (SCA CS) FOR 2005

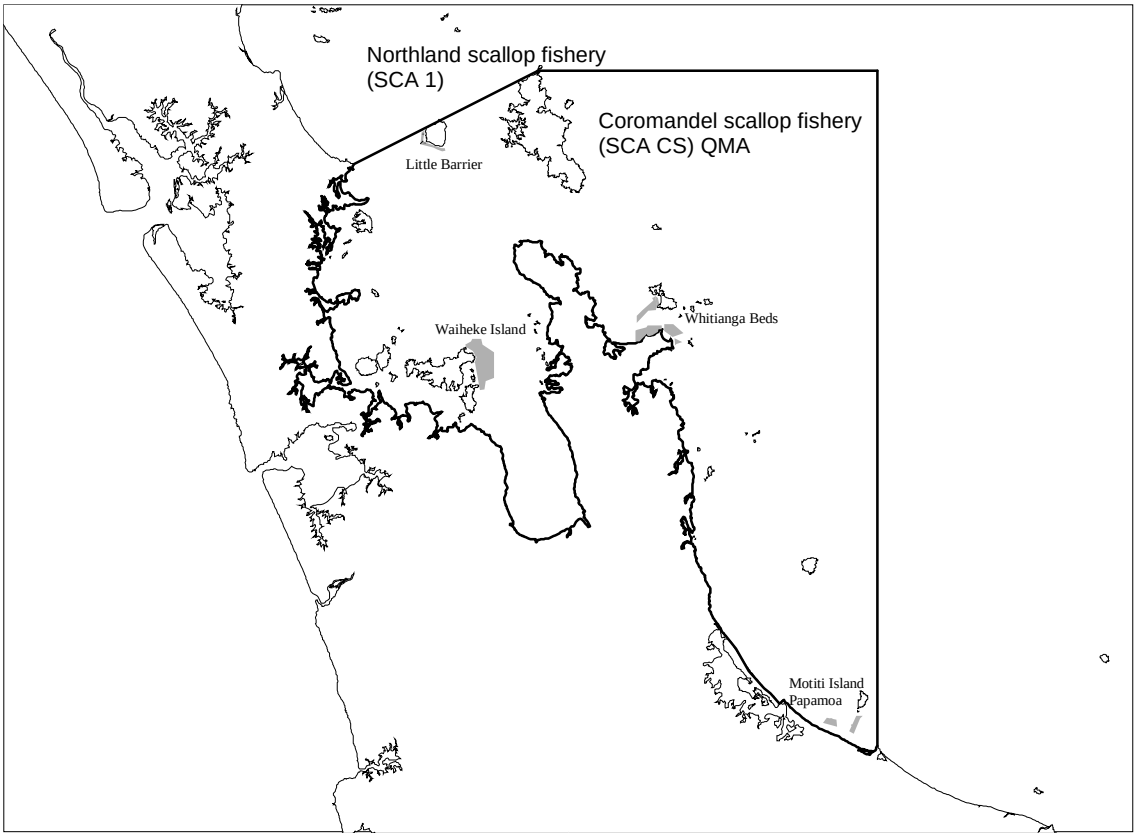

Figure 1: **Boundary of the Coromandel scallop (SCA CS) Quota Management Area and the location of the main scallop beds fished by commercial fishers (shaded areas).**

Proposal

1 The Ministry of Fisheries (MFish) proposes to review the total allowable catch (TAC) of the Coromandel scallop fishstock (SCA CS) for the purpose of providing for an in-season TAC increase for the 2005 fishing season. MFish proposes that the Minister of Fisheries, after taking into account information about scallop abundance in SCA CS during the current fishing year, considers the management measures proposed below.

2 The proposal is to increase the TAC for SCA CS from 48 to 239 tonnes meatweight, and within the TAC:

a) increase the allowance for recreational fishing from of 7.5 tonnes meatweight to 40 tonnes meatweight;

b) increase the allowance for customary Maori fishing from of 7.5 tonnes meatweight to 40 tonnes meatweight;

c) increase the allowance for other sources of fishing-related mortality from 11 tonnes meatweight to 41 tonnes meatweight;

d) increase the Annual Catch Entitlement (ACE) from 22 tonnes meatweight to 118 tonnes meatweight.

3 At the end of the current fishing year for SCA CS, the TAC will revert to 48 tonnes meatweight, the allowance for recreational fishing will revert to 7.5 tonnes meatweight, the allowance for customary fishing will revert to 7.5 tonnes meatweight, the allowance for other sources of fishing-related mortality will revert to 11 tonnes meatweight, and the ACE will revert to 22 tonnes meatweight.

Management Framework

4 During 2001, the Minister of Fisheries agreed to set a TAC (under section 13 of the Fisheries Act 1996 (the Act)) for SCA CS at 48 tonnes meatweight to apply from the start of the fishing year on 1 April 2002. Section 13 requires the TAC to be set at a level that will maintain or move the stock towards or above the level that will produce the maximum sustainable yield (MSY), having regard to the interdependence of stocks.

5 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 threshold level.

6 The Minister also decided in 2001 to include SCA CS on the Second Schedule of the Act. A stock listed on the Second Schedule may have its TAC increased during the season under s 13(7) of the Act after consideration of information about the abundance of the stock. At the start of the next fishing year, the TAC reverts to the level set at the start of the previous fishing year. The TAC can only be increased during the fishing year and not decreased.

7 Since 1978, surveys have been used to estimate the abundance of scallops in the Coromandel scallop fishery. Yield estimates based on these surveys have been used to set limits on catch (including the TAC, TACC, and allowances) for the fishery.

8 In making his decision on required services for 2004-05, the Minister agreed to an optional survey for SCA CS during 2005. Quota holders decided that scallop abundance should be assessed during 2005. A research survey was undertaken in May 2005 to assess SCA CS.

9 Section 13(7) recognises that abundance for some stocks can be highly variable between years. S 13(7) allows for further utilisation in years when the stock is more abundant, so long as the catch is still sustainable. Accordingly, the same considerations (s 13(2), s 13(3)) to achieve the direction and rate of change towards the MSY level must be taken into account in making an in-season adjustment as in setting the original TAC.

10 Section 20(4) of the Act states that the increase of the TAC cannot result in an increase to the total allowable commercial catch (TACC) during the fishing year. However, under s 68(1), if the Minister is satisfied that after considering the matters required for TACC setting (as prescribed under s 21(1)) he would have made an in-season increase to the TACC but for the prohibition against that in s 20(4), then he may create additional ACE for fishers equal to the amount of the increase in the TACC that he would have made.

11 Section 21(1) provide that in setting or varying the TACC the Minister shall make an allowance for Maori customary fishing, recreational fishing, and other sources of fishing-related mortality. It is implicit that the Minister, when increasing the TAC in season, can increase the level of non-commercial allowances. However, there is nothing in the Act that requires these allowances to automatically revert to the original allowances at the end of the fishing year. The TAC only reverts. Therefore, if the Minister decides to increase any of the allowances for the remainder of the current fishing year, then part of his decision will also be that the allowances will reduce to the original level at the start of the next fishing year on 1 April 2006. The process outlined in the preceding paragraphs was followed during the 2002, 2003 and 2004 fishing seasons for SCA CS in providing an in-season ACE increase for commercial scallop fishers.

Steps in the process to review the TAC

12 To progress this review, MFish proposes the following steps:

- consideration of the survey information about the abundance of scallops in SCA CS during the current fishing year;
- consultation with quota holders, tangata whenua, stakeholders and Te Ohu Kai Moana in order to review the TAC, allowances, and ACE for SCA CS (**this paper**);
- the Minister's consideration of MFish's final advice and his decision on the proposal;

- notice of any increased TAC agreed to by the Minister to be notified in the *New Zealand Gazette;*
- generation of ACE.

Fishery information

Species Biology

13 Scallops (*Pecten novaezelandiae)* inhabit waters to about 60 m deep, but are more common in the Coromandel fishery in depths of 10 to 30 m. Growth rates are spatially and temporally variable; growth to 100 mm takes between 1.5 and 3.5 years. The maximum age of scallops in unexploited populations is about 6 or 7 years.

14 *Pecten novaezelandiae* is an hermaphroditic species, each individual carrying both male and female gonads at the same time. Most individuals are sexually mature at about 60 mm, although larger individuals have disproportionately larger gonads. The commercial minimum legal size limit of 90 mm probably mitigates risk of recruitment failure, as scallops mature and spawn before reaching the size limit. They are extremely fecund and can spawn several times each year (although not all of these spawning events lead to successful spat settlement). Larval development lasts for about 3 weeks, depending on water temperature.

15 Scallops grow rapidly (albeit with considerable variation), have high natural mortality, and exhibit highly variable recruitment. Such a life history results in fluctuating biomass, catch, and reliance on relatively few year-classes.

Fishery characteristics

16 The management arrangements for commercial and non-commercial fishers differ. Extensive parts of the Hauraki Gulf and many inshore scallop beds within SCA CS are closed by regulation to commercial scallop fishing. Therefore, the non-commercial and commercial fishing sectors are separated spatially to a large extent. The main beds in the commercial scallop fishery are found north of Whitianga (at the Mercury Islands), east of Waiheke Island, around Little Barrier, Cape Colville, and in the Bay of Plenty principally around Motiti Island and Papamoa Beach (see Figure 1).

17 There are also differences between the sectors in the minimum legal size limit (90mm for commercial fishers, and 100mm for recreational fishers). The duration of the fishing season is controlled by regulation and also differs: 15 July to 20 December (inclusive) in the same year for commercial fishers; and 15 July to 14 February (inclusive) of the following year for recreational fishers. The commercial and recreational fisheries can also be closed under shellfish sanitation requirements.

18 Maori customary fishers are currently able to take scallops for hui and tangi purposes in accordance with regulation 27 of the Fisheries (Amateur Fishing) Regulations 1986. If a kaitiaki has been appointed, then she or he can authorise the taking of scallops under the Fisheries (Kaimoana Customary Fishing) Regulations 1998. Recreational fishers are restricted to a maximum daily bag limit of 20 scallops per fisher per day in SCA CS.

Commercial fishery

19 The reported commercial catch has varied from 6.6 tonnes (meatweight) in 2000 to 384.0 tonnes (meatweight) in 1987 (Table 1). Since 1992, limits on the overall commercial catch have been determined from the results of dredge and dive surveys undertaken before the start of each fishing season. However, the catch limits for SCA CS have often not been caught, notably in 1998, 1999 and 2000 (Table 1).

Table 1: SCA CS reported landings (tonnes meatweight) by commercial fishers from 1986 to 2004 and the sum of permit condition entitlements (tonnes meatweight) for 1995 to 2000, a commercial catch limit (CCL) was set for the 2001 season and a TACC set for 2002 to 2004.

Fishing year	Reported landings (LFRR data)	Sum of permit condition entitlements / CCL / TACC
1986	162.3	
1987	384.0	
1988	181.9	
1989	103.8	
1990	153.3	
1991	203.2	
1992	146.8	
1993	62.3	
1994	49.4	
1995	88.4	85.8
1996	81.0	88.0
1997	93.9	104.9
1998	36.6	110.0
1999	7.7	31.0
2000	6.6	15.4
2001	22.1	22.0
2002	32.3	35.0
2003	57.9	58.0
2004	78.5	79.0

20 The variability of scallop biomass over short timeframes may be partly responsible for why limits on catch have not always been achieved. To reduce this influence as much as possible, surveys are conducted as close to the expected start of the commercial season as possible. Another factor is the difficulty in predicting available yields in a scallop fishery with any precision. The uncertainty due to the variables of dredge efficiency and residual scallop density are discussed in the section on information about abundance during the current fishing year. There is also additional uncertainty when the TACC is allocated in meatweight, because the meatweight to greenweight ratio varies throughout the year. Actual yields will depend on scallop condition, natural mortality and scallop growth.

21 The Coromandel scallop stock fluctuates in biomass from year to year. Recruited biomass in any given year cannot be predicted from historical biomass estimates, nor even from biomass estimates in the previous year adjusted by catch in the intervening season. Nevertheless, the system may not be entirely random. Prior to 1999, there appears to be a relationship between scallop recruitment (as measured by catches two years later) and the Southern Oscillation Index (Figure 2).

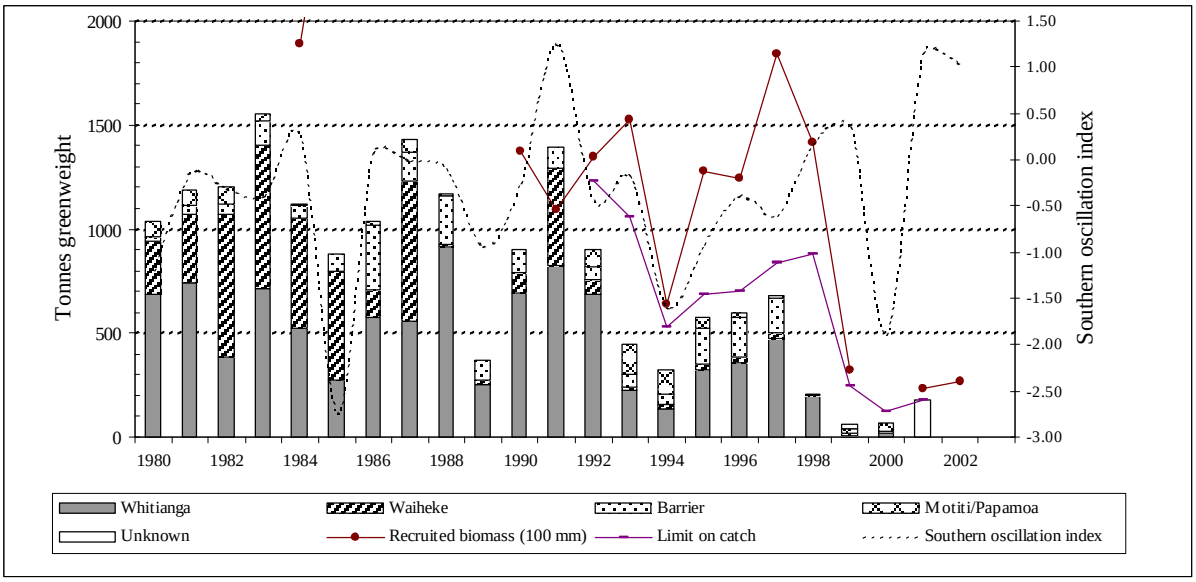

Figure 2: Reported catches by area, catch limit, survey estimates of recruited biomass (100 mm) for the Coromandel scallop fishery and the Southern Oscillation Index.

22 The 1999 season was very poor with periods of the season not fished (voluntarily) because of "black gill" condition in the scallops. Commercial dredging was affected between 1998 and 2000 by the spread of the C*haetopterus* tubeworm into some areas. The tubeworm builds large clumps of parchment-like tubes that make dredging for scallops impossible as the dredge fills with tubes, such that the dredge cannot catch scallops. Tubeworms were very rare during the 2005 dredge survey, and were never a hindrance to surveying by filling the dredge.

Recreational fishery

23 Telephone/diary surveys were undertaken during 1993-1994, 1996 and 1999-2000. The recreational harvest estimate from the 1993-94 survey was 8.8 tonnes meatweight. The 1996 survey estimate of the recreational catch was 7.5 tonnes meatweight. The recreational catch estimate from the survey in 1999-2000 was 3.8 tonnes meatweight. The average of these recreational catch estimates is 6.7 tonnes.

24 The recreational diary surveys include catches reported from areas closed to commercial fishing by regulation. The areas closed to commercial dredging by regulation include popular recreational and customary fishing areas such as Kawau Island, Omaha Bay, parts of Waiheke Island and the Firth of Thames, Great Mercury Island, Otama Beach, Opito Bay, Slipper Island, and Motiti Island. The rationale for these closed areas in this fishery is that the closures protect key non-commercial scallop fishing areas from the effects of commercial scallop dredging. Some of these closed areas were initially agreed under a three-year plan negotiated by the sectors. In general, the closures are utilisation measures, rather than sustainability measures.

Mäori customary fishery

25 In common with many other shellfish, scallops are important to Mäori as a traditional food. However, no quantitative information on the level of customary take of SCA CS is available. The level of customary catch is unknown. The Minister has set the customary allowance at the level of the recreational allowance. MFish has applied a general criterion that, in the absence of information and where the fishery is of known importance to Maori, the recreational allowance is used as a benchmark to set the customary allowance.

Other sources of fishing-related mortality

26 Quantitative information on the level of illegal catch is not available. However, quantitative information on other sources of fishing-related mortality was gathered in the Coromandel scallop fishery as part of MFish project AKSC03 during the 1996-97 fishing year. This work by NIWA assessed the incidental effects on growth and mortality of scallops from encounters with commercial dredges of various designs.

27 Individual-based population modelling and yield per recruit analysis suggested there are incidental effects of dredging on growth and mortality rates that are highly influential on the determination of yield from scallop dredge fisheries. Using NIWA's model, the level of incidental mortality was estimated to be 34.4% of the level of the commercial catch. Based on this model, an allowance for fishing-related mortality is proposed later in this paper.

Fishery assessment

General methodology

28 The biological reference points most commonly used in New Zealand are Maximum Constant Yield (MCY) and Current Annual Yield (CAY). These are derived from two ways of viewing MSY – a static interpretation and a dynamic interpretation. Under a static interpretation, MCY is the largest constant commercial catch that may be taken sustainably even if the number of recruits fluctuates from year to year.

29 Under a dynamic interpretation, CAY is the catch to biomass ratio that maximises the sustainable yield from a fishery over time. It is calculated as a constant proportion of the biomass and increases and decreases in tandem with changes in the stock biomass. It is possible to estimate CAY only when the current stock size is known, as is possible in the case of scallops immediately after a survey. The methodology for calculating CAY is set out in MFish's Stock Assessment Plenary report.

30 The current TAC for SCA CS is based on an estimate of MCY for the fishery. This is the level of constant commercial catch that is estimated to be sustainable, with an accepted level of risk, at all probable levels of biomass. However, because of the annual variation of scallop biomass, the CAY provides the most appropriate estimate of yield on which to base any consideration for an in-season increase in TAC.

31 Since 1978, recruited biomass at the start of the season, for most years, has been estimated by research surveys. Counts of scallops above a critical size at each survey site are converted to numbers per square metre of seabed according to the area swept by the dredge. The absolute density of scallops is estimated by correcting for the efficiency of the dredges. The numbers of scallops are calculated by multiplying the mean scallop density by the area of each survey stratum. Mean recruit weight is estimated and used to calculate biomass.

Information about abundance during the current fishing year

32 A research survey of the main Coromandel scallop beds used for commercial fishing was conducted in May 2005. For the overall survey area, a simple "area-swept" analysis suggests there were 36.8 million scallops (with a Co-efficient of Variation (CV) of 14%) at or above a size of 90 mm at the time of the survey. However, this is an under-estimate, as this assumes that dredges are 100% efficient at catching all the scallops in the path of the dredge.

33 Dredge efficiency was assessed as part of most of the surveys in the 1990s by conducting experiments to compare scallop catch rates between divers and dredges operating in the same area at the same time. The vessel and skipper used for the 2005 survey were the same as used in many of the dredge efficiency experiments in the 1990s. Accordingly, for the 2005 assessment, the historical average dredge efficiency was used, as this most closely relates to the performance of the vessel and skipper used for the 2005 survey. By allowing for average dredge efficiency catch rates, the number of scallops above 90 mm is estimated to be 146.7 million.

34 To allow a comparison of trends over the history of the fishery since 1990, estimates based on scallops 95mm and above are provided (Table 2). These estimates indicate that there has been a substantial improvement in the number of scallops for 2005. The improvement is most pronounced for the Whitianga beds, which have historically been the most important scallop beds for the commercial fishery. The total survey estimate for 2005 (66.6 million (95 mm+ scallops)) is considerably larger than all previous survey estimates which ranged from 3.3 million (1999) to 33.2 million (2004).

Table 2: Millions of scallops (95 mm or greater shell length) estimated at the time of the survey in the main areas of the Coromandel commercial fishery since 1990. Historical average dredge efficiency has been assumed for all years, including 2001–03 when different vessels were used. Totals include data from all surveyed beds and are not directly comparable among years. Dashes (–) indicate no survey in an area or year.

Year	Whitianga / Mercury Is	Waihi Beach	Motiti / Papamoa	Little Barrier	Cape Colville	Waiheke Island	Total
1990	7.4	–	–	–	–	6.4	13.8
1991	11.1	–	–	–	–	2.8	13.9
1992	10.7	–	–	–	–	0.7	11.4
1993	6.6	7.1	–	–	0.3	0.4	14.4
1994	4.8	1.5	–	–	–	0.0	6.3
1995	4.4	0.6	4.5	2.5	0.1	0.3	12.5
1996	6.1	0.2	2.2	3.3	0.1	0.3	12.6
1997	6.1	0.7	1.9	4.0	0.3	5.4	18.4
1998	6.4	0.1	1.2	1.0	0.2	5.3	14.2

1999	1.8	0.2	0.9	0.2	0.0	0.2	3.3
2000	–	–	–	–	–	–	–
2001	1.5	–	0.7	1.6	–	0.2	4.2
2002	2.7	–	0.7	0.8	–	1.0	5.3
2003	4.2	–	2.1	1.4	3.5	1.7	12.9
2004	23.5	1.0	2.4	1.2	0.3	4.7	33.2
2005	53.2	3.7	1.8	2.8	2.5	2.4	66.6

35 For 2005, the total greenweight biomass (90mm+ scallops) can be calculated by multiplying the estimate of the numbers of scallops against the average weight of a scallop (85.01 grams) at the time of the survey. This provides an estimate of 12,474 tonnes allowing for historical average dredge efficiency.

36 To estimate CAY it is necessary to know the biomass of scallops at the start of the season. The numbers of scallops at length at the time of the survey was projected forward using assumptions concerning growth (determined from previous tagging programmes) and natural mortality (assumed to be M=0.5 spread evenly through the year). A non-parametric resampling and projection approach resulted in a median estimate of biomass over 90 mm in length of 14 370 tonnes (greenweight) with a CV of 23%, based on historical average values for dredge efficiency.

37 An additional biomass estimation step that is optional is to make an allowance for only that part of the fishery where scallops occur at a density considered viable for commercial fishing. Critical density will differ for various operators involved in the fishery. MFish considers 0.04 m^{-2} (ie. one recruited scallop for each 25 m^2 of seabed) to be the most appropriate critical density for the Coromandel scallop fishery, as it conforms closest to a catch rate of 50 kg greenweight per hour. This catch rate is considered by the Coromandel Scallop Fishery Management Committee to be about the minimum for an economic return from the fishery. An allowance for critical density at 0.04 m^{-2} would reduce the estimate by around 15%.

Current Annual Yield (CAY) calculation

38 Using the assumptions of historical average dredge efficiency and a reference rate of fishing mortality of $F_{0.1}$ (MFish standard rate), the CAY is estimated to be 4576 tonnes greenweight. It is then necessary to convert the greenweight to meatweight, as meatweight is the standard unit of measurement used in the Coromandel scallop fishery. This conversion results in a meatweight CAY estimate of 573 tonnes by using the average recovery rate from 1995 to 2002 (12.6%) for extracting the scallop meat from the whole scallop shell in the processing sheds. If an allowance is made for areas of low scallop density at a level of 0.04 m^{-2}, then the CAY would be reduced by about 15%.

Environmental Issues

39 The Act prescribes environmental principles that must be taken into account when exercising powers in relation to utilisation of fisheries resources while ensuring sustainability. Associated or dependent species (including non-fish bycatch) should be maintained above a level that ensures their long-term viability. Biological diversity of the aquatic environment (ie, the variability of living organisms, including diversity

within species, between species, and of ecosystems) should be maintained, and habitat of particular significance for fisheries management should be protected.

40 The history of commercial dredging in the Coromandel scallop fishery dates back to 1968, and trawling has occurred in the area since the late nineteenth century. There is no doubt that these fishing methods have an impact on the seabed. There is some information available providing evidence of broad-scale changes in benthic communities that can be directly related to fishing. The seafloor in the area has also been modified by the impact of land-based activities over a much longer period. However, significant areas of habitat in the Firth of Thames and inner Hauraki Gulf are not open to commercial dredging.

41 MFish is not currently aware of any habitat of particular significance for fisheries management that requires additional protection. MFish does not consider that the catch levels proposed below in this paper will put at risk the long term viability of associated species or biological diversity within the area of the fishery.

42 Since 1997, populations of the large tubeworm (*Chaetopterus spp.)* have spread throughout the nearshore marine environment in northeastern New Zealand. The taxonomic identity of the tubeworm is still uncertain. A Uniservices research report maps the distribution of the tubeworm around northeastern New Zealand, and discusses the species taxonomic status and the ecological effect of *Chaetopterus* species in other parts of the world.

43 The tubeworm affects scallop fishing by clogging dredges, and has impacted on dredging mainly at the beds at Little Barrier Island and Whitianga. In addition to the affect on fishing, the presence of vast numbers of the tubeworm, combined with its rapid spread, has raised concerns about the potential ecosystem effects of this organism. However, as indicated earlier, tubeworms appear to have declined over the last three years and were very rare during the 2005 dredge survey. Nonetheless, the increase and decrease in the tubeworm population illustrates how variable associated and dependent species can be in seafloor communities.

Current and potential research

44 The current fisheries services applying to this fishery include optional surveys to estimate yield from the commercial scallop beds.

Proposed TAC, allowances, and ACE

TAC setting

45 Under s 13 of the Act, the TAC must be set at a level that will maintain the stock at or above, or move the stock towards or above, the level that will support the MSY. As SCA CS is on the Second Schedule to the Act, under s 13(7) the Minister can increase the TAC in-season after considering information about the abundance of the stock.

46 MFish notes that there is no current assessment of the entire SCA CS stock on which to base a TAC. The available assessment information on yield is based on a survey of the main commercial scallop fishing beds. The CAY method estimates sustainable yield from areas primarily utilised by commercial fishing. The CAY estimate is a

proxy for MSY, and the proposed TAC increase is likely to move the stock towards the MSY level.

47 The Annual General Meeting of the Coromandel Scallop Fishermen's Association was held in early June. At this meeting, the quota-holders discussed the results of the recent research survey in the draft NIWA report and were aware of the projected improvement in the fishery. Most of the quota-holders considered it appropriate to adopt a cautious approach towards the in-season TAC increase. The consensus recommendation from the meeting was for the increase to be to 4.5 tonne meatweight per license (as would have applied under the previous Coromandel Controlled Scallop Fishery regime). This equates to a proposal to increase the total available ACE to 117.9 tonnes, which would be rounded off to 118 tonnes.

48 The President of the NZ Recreational Fishing Council (RFC) has commented to MFish on the 2005 survey results and the draft NIWA report. The NZRFC is concerned about the environmental effects of dredging and considered a pre-cautionary approach should be adopted. The NZRFC agreed with the catch increase proposed by the quotaholders.

49 MFish did not receive comments on the draft NIWA report from customary Maori, and the environmental sector.

50 MFish proposes that the Coromandel scallop TAC should be increased from 48 to 239 tonnes meatweight. The proposed TAC increase is largely based on the proposal to increase the total available ACE for commercial fishers for the 2005 season from 22 to 118 tonnes meatweight. As explained below, the remainder of the proposed TAC increase is based on the likelihood that the catch by recreational and customary Maori fishers will probably increase due to the increased abundance of scallops.

51 At the end of the current fishing year for SCA CS, the proposed TAC, ACE, and allowances would revert to the initial levels at the start of the fishing year.

Allowances and ACE

52 MFish notes there is no statutory obligation to make an adjustment to Maori customary or recreational interests when the TAC is varied pursuant to s 13(7) of the Act. However, s 68(1) requires the Minister to consider the provisions of s 21, under which he has the discretion to determine allowances.

Recreational interests

53 In considering an in-season TAC increase, and having regard to the matters under s 21, MFish believes that the most relevant consideration is that there has been a significant increase in the biomass of the scallop fishery. MFish notes that the survey results relate primarily to the scallop beds mainly fished by the commercial sector and on this basis no change in the allowance for recreational fishing has been considered during annual TAC reviews. However, trends in scallop abundance in the "non-commercial" beds are likely to be similar to abundance trends for the surveyed beds and MFish now considers that these should be reflected increased annual non-commercial allowances for the fishery.

54 MFish considers it likely that there will be an increase in the catch for the Maori customary and recreational sectors for 2005-06. Due to the increased biomass, an increased non-commercial catch could be attained from a number of factors. It is likely that existing fishers will fish more frequently for scallops. There are also likely to be a greater number of "new" fishers fishing for scallops. In addition, it is likely that fishers will more frequently attain their full legal entitlement of scallops ie. the current daily bag limit of 20 scallops per fisher per day.

55 Given that the recreational catch is likely to increase, it is therefore reasonable to propose an increase in the recreational allowance. Accordingly, MFish proposes to increase the recreational allowance by the same proportion as the increase in ACE to commercial fishers – slightly more than a five-fold increase. Therefore, MFish proposes to increase the allowance to recreational fishing from 7.5 tonnes meatweight to 40 tonnes meatweight for 2005-06. As part of this proposal, the recreational allowance would then decrease to 7.5 tonnes meatweight at the end of the current fishing year for SCA CS (31 March 2006).

Proposed changes to amateur fishing regulations

56 As part of a separate fisheries management process, MFish intends to release six proposals for proposed changes to the amateur fishing regulations. Three of the proposals concern aspects of the management of the recreational scallop fishery: shucking scallops at sea, measuring scallops on the seafloor, and the "primary taker" rule. A fourth proposal is to increase the Coromandel scallop amateur bag limit from 20 to 30 scallops per taker per day.

57 The proposed changes to the amateur fishing regulations have involved discussions with the NZRFC. It is likely that the proposals will be released for consultation with other stakeholder groups in July. Based on the consultation process and advice from MFish, the Minister will then decide whether to approve or decline the proposals. If the Minister agrees with the changes, then the amended regulations could come into effect in December.

Mäori customary interests

58 In common with many other shellfish, scallops are important to Mäori as a traditional food. However, no quantitative information on the level of customary take of SCA CS is available. MFish has applied a general criterion that, in the absence of quantitative catch information and where the fishery is of known importance to Maori, the recreational allowance is used as a benchmark to set the customary allowance. Accordingly, MFish proposes to increase the customary allowance to the level of the proposed recreational allowance – 40 tonnes meatweight.

Other sources of fishing-related mortality

59 The level of incidental mortality expected in the commercial dredge fishery has been calculated by NIWA to be 34.4% of the catch level. Therefore, MFish proposes to increase the allowance for other sources of fishing-related mortality from 11 tonnes meatweight to 41 tonnes meatweight for 2005.

ACE for commercial fishers

60 MFish notes that s 20(4) of the Act does not allow the TACC to be increased if the Minister decides to increase the TAC. However, under s 68(1), if the Minister after taking into account the matters under s 21, is satisfied that he would have increased the TACC but for the s 20(4) prohibition, then he may create an additional amount of ACE equal to the amount he would have increased the TACC. Any increase in ACE will be distributed proportionally amongst the scallop quota owners according to the formula in s 68(2).

61 MFish considers that the Minister can be satisfied that the survey results provides adequate grounds for increasing the TACC, but for the impediment of s 20(4). On that basis, MFish believes that the Minister can consider making available an additional amount of ACE equivalent to the TACC increase he would have considered. Accordingly, MFish proposes that the level of ACE for the SCA CS fishery for the 2005 season be increased from 22 to 118 tonnes meatweight.

62 Based on a port price of $16.00 per kilogram of meatweight ($16,000 per tonne), the proposed increase in ACE of 96 tonnes meatweight equates to an increased gross return to the commercial fishers of $1,536,000 for the 2005 season.

Other legislative considerations

63 Before setting or varying any sustainability measure, s 11(1) of the Act requires the Minister to take into account specified matters. These include:

i) any effects of fishing on any stock and the aquatic environment;

ii) any existing controls that apply to the stock or area concerned;

iii) the natural variation of the stock concerned.

64 Evaluation of the available information on the effects of fishing has led to a number of restrictions that underpin the existing commercial fishery management regime for SCA CS. These restrictions are consistent with the overriding obligation to avoid, remedy or mitigate the adverse effects of fishing. They are implemented through a combination of regulations and voluntary agreement and include:

a) restrictions on dredge size to reduce adverse effects on the seafloor;

b) five day fishing week and daylight only fishing (reduces fishing intensity);

c) daily catch limits to reduce fishing intensity (Coromandel Scallop Fishermen's Association initiative).

65 The proposal recognises that biological systems can be inherently variable, and stocks are prone to fluctuations in abundance. This particularly applies to scallop populations.

66 Section 11(2A) of the Act requires that before varying any sustainability measure the decision-maker must take into account any approved fisheries plan, any conservation or fisheries required services, and any decisions not to require fisheries services. The current fisheries service applying to the fishery is a pre-season survey to estimate CAY for the fishery. The survey estimate has been considered and forms the basis for

the proposals contained in this paper. There are no conservation services applying to the fishery. There is no draft or approved fisheries plan for the Coromandel scallop fishery.

67 In relation to s 11(2) of the Act, there are no provisions applicable to the coastal marine area known to exist in any policy statement or plan under the Resource Management Act 1991, or any other management strategy or plan under the Conservation Act 1987, that are considered relevant to the setting of sustainability measures for the Coromandel scallop fishery.

68 Under s 11(2)(c), the Minister must have regard to sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000 as part of the Coromandel scallop fishery is part of the area defined as the Hauraki Gulf for the purpose of that legislation. In summary, sections 7 and 8 articulate the national significance of the Hauraki Gulf to sustain the life-supporting capacity of the environment and note that management objectives for the Hauraki Gulf are to protect the life supporting capacity of the environment and to maintain the contribution of the natural resources to the social, recreational, and economic well-being of the people and communities of the Hauraki Gulf and New Zealand. Setting a sustainable commercial catch limit on a fishery resource, having taken into account the environmental principles of the Fisheries Act 1996, is consistent with these objectives as it provides for utilisation while ensuring sustainability.

69 Section 11 of the Act also provides for the setting or varying of sustainability measures other than a TAC or catch limits. The Minister may determine that area closures and seasonal constraints required for the annual management of this fishery be set as sustainability measures. As mentioned, a number of commercial closed areas are already in place in the Coromandel scallop fishery, although these are not considered sustainability measures.

70 Stakeholders have indicated their preference for a harvesting strategy that primarily involves in-season adjustment of the TAC. However, they have also identified that an overhaul of current regulatory controls is overdue. Issues identified for review include the commercial minimum legal size, regulatory controls on days of the week fished and the requirement that fishing occur only in daylight. Possible changes to these controls are not proposed in this paper. Instead, stakeholders could undertake a review of the management measures as part of the development of a management plan for the fishery. The Coromandel Scallop Fishermen's Association and the NZRFC have expressed a strong desire for a fishery plan for the Coromandel scallop fishery.

Administrative implications

71 There will not be an opportunity to amend the cost recovery levies prior to the end of the SCA CS fishing season. Consequently, an over recovery will occur because levies are set on a per unit basis (per kilogram or quota share), and the number of units will increase. In setting future levy orders, the Minister must have regard to these over recoveries.

Consultation

72 In early June, MFish asked stakeholder representatives and members of the Shellfish Working Group to review the draft NIWA research report entitled "Dredge survey and stock assessment for the Coromandel scallop fishery, 2005". The report forms the basis of the proposed TAC change. No significant comments of a scientific nature were provided on the draft. Subject to a few minor changes, the document will therefore be accepted as the final report.

73 Prior to the statutory consultation with stakeholders involving this paper as the key document, there has been some preliminary consultation. MFish attended the AGM of the Coromandel Scallop Fishermen's Association where the management implications for the survey results were discussed. MFish also discussed management issues with the President of the NZRFC.

74 As indicated earlier, the main recreational and commercial stakeholder organisations suggested the basis for the proposed ACE increase. However, given the favourable stock assessment information, MFish is interested in hearing alternative views and options from stakeholders for the current fishing year, and for the medium to long-term future of the Coromandel scallop fishery.

75 The 2005 in-season review of the Coromandel scallop TAC is based on the process that operated for SCA CS from 2002 to 2004. Stakeholders are now familiar with this process. Stakeholders will have around three weeks to Friday 22 July 2005 to provide MFish with written submissions commenting on the management proposals. There will also be a consultative meeting with stakeholders at MFish's Auckland office (1–4pm, 11 July 2005). The short time for consultation is necessary because of the relatively short fishing season, which closes on 20 December. Any in-season changes to the management measures for SCA CS need to be implemented as early as possible to be meaningful within that season.

Summary

76 The Fisheries Act 1996 imposes an obligation to provide for the utilisation of fisheries resources as long as sustainability is ensured. The proposed management measures take into account the research survey information showing a biomass increase for the Coromandel scallop fishery.

77 There is a reasonable level of consensus amongst key stakeholder groups for the TAC to be increased, and in particular, the proposal to increase the amount of ACE from 22 tonnes to 118 tonnes meatweight. This would allow additional utilisation and income to commercial fishers who derive part of their livelihood from this fishery. MFish considers that the proposed measures for the SCA CS fishery are consistent with the purpose and principles of the Fisheries Act 1996 and associated obligations.

Preliminary recommendation

78 MFish proposes that:

a) The TAC for SCA CS is increased from 48 to 239 tonnes meatweight, and within the TAC:

i) the allowance for recreational fishing is increased from 7.5 tonnes meatweight to 40 tonnes meatweight;

ii) the allowance for customary fishing is increased from 7.5 tonnes meatweight to 40 tonnes meatweight;

iii) the allowance for other sources of fishing-related mortality is increased from 11 tonnes meatweight to 41 tonnes meatweight;

iv) the ACE for quota owners is increased from 22 tonnes meatweight to 118 tonnes meatweight; and

v) at the end of the current fishing year for SCA CS, the TAC will revert to 48 tonnes meatweight, the allowance for recreational fishing will revert to 7.5 tonnes meatweight, the allowance for customary fishing will revert to 7.5 tonnes meatweight, the allowance for other sources of fishing-related mortality will revert to 11 tonnes meatweight, and the ACE will revert to 22 tonnes meatweight.