

H0416

25 August 2009

Minister of Fisheries

2009 Review of the Coromandel Scallop Fishery TAC

Purpose

1 The purpose of this final advice paper (FAP) is to seek your decision on whether or not to adjust the TAC and ACE for the Coromandel scallop fishery (SCACS) for the 2009–10 fishing season. This final advice paper (FAP) provides the information necessary to inform your decision.

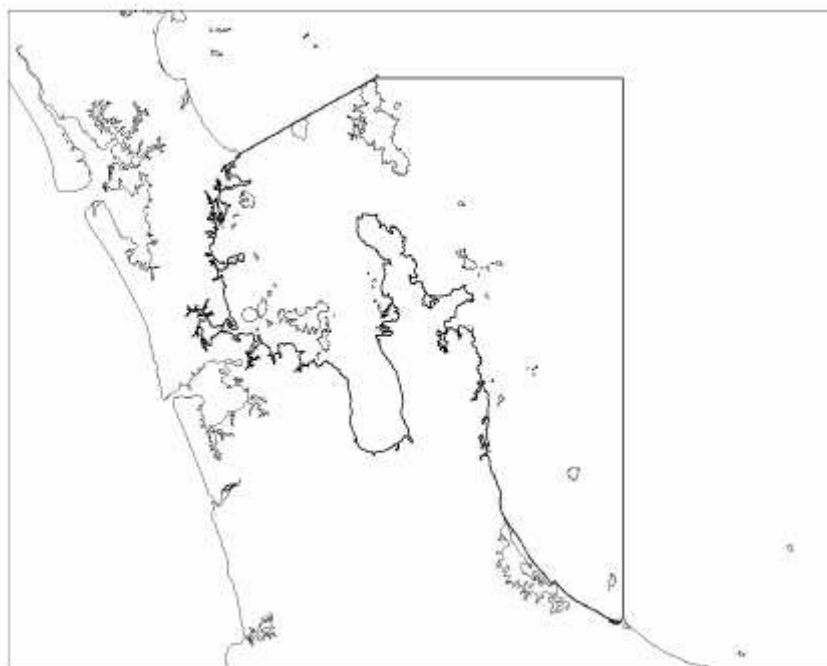
Comment

2 Please note that this FAP is made up of four sections – Section 1 is the final advice section containing submissions, discussion, and final recommendations; Section 2 is the initial position paper (IPP) that formed the basis of consultation and contains the detailed analysis of fishery and scientific information as well as statutory considerations; Section 3 is the report on the scientific survey done by NIWA; and Section 4 contains the full text of submissions received from stakeholders. Your attention is drawn to all four sections.



Section One

2009 Review of the Coromandel scallop fishery TAC - Summary of submissions, MFish discussions and response, conclusions, final recommendations



Map 1: Coromandel Scallop fishery (SCACS) Quota Management Area

Purpose

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Summary

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3 Two draft Gazette notices relevant to each option are attached (Appendix 1) for your consideration and signature. Please sign the notice that pertains to the option you agree to. Should you decide to set alternative management measures, MFish will provide an appropriate notice for your signature. Once aware of your decision, MFish will also provide a draft decision letter for your consideration and signature. This letter will inform stakeholders of your decision and the reasons for it, as required under s 12(2) of the Act.

4 The IPP was released on 3 July 2009 and proposed two options for an in-season TAC and ACE adjustment for SCACS under ss 13(7) and 68(1) of the Fisheries Act 1996 (the Act). The two options were based on the same scientific information about this season's scallops biomass and yield. They propose the same commercial allocation through an ACE adjustment, but contain different levels of allowances for non-commercial interests. Alternative options are also available at your discretion. If adjusted, the TAC would revert to 48 tonnes meatweight¹ at the end of the 2009–10 scallop fishing year (being 31 March 2010) in accordance with s 13(8) of the Act.

5 The SCACS stock occupies the area from Cape Rodney in the Hauraki Gulf to Town Point in the Bay of Plenty. SCACS is included on the Second Schedule of the Act, which allows for an in-season TAC increase, if supported by information about the abundance of scallops during the current fishing year, and after having regard to the matters specified in s 13(2), (2A) if applicable, and (3) of the Act.

6 In making your decision on required services for 2009–10, you agreed to an optional survey for SCACS during 2009. Quota holders decided that scallop abundance should be assessed this year, and a survey was undertaken by NIWA in May. The survey indicates that although scallop biomass has decreased compared with last year, it remains sufficient to support catch well above the baseline TAC for the current fishing year. Details and results from the survey are discussed in the IPP (Section 2).

Reason for Reviewing the Catch Limits

7 The abundance of scallops in the Coromandel fishery area is known to vary considerably from year to year. This variable abundance arises from the relatively short lifespan of scallops, the few age classes that typically make up the population and a high natural mortality. Environmental factors can strongly influence the growth and natural mortality of young scallops, which in turn contribute to variability in abundance. These fluctuations in abundance are largely independent of fishing pressure.

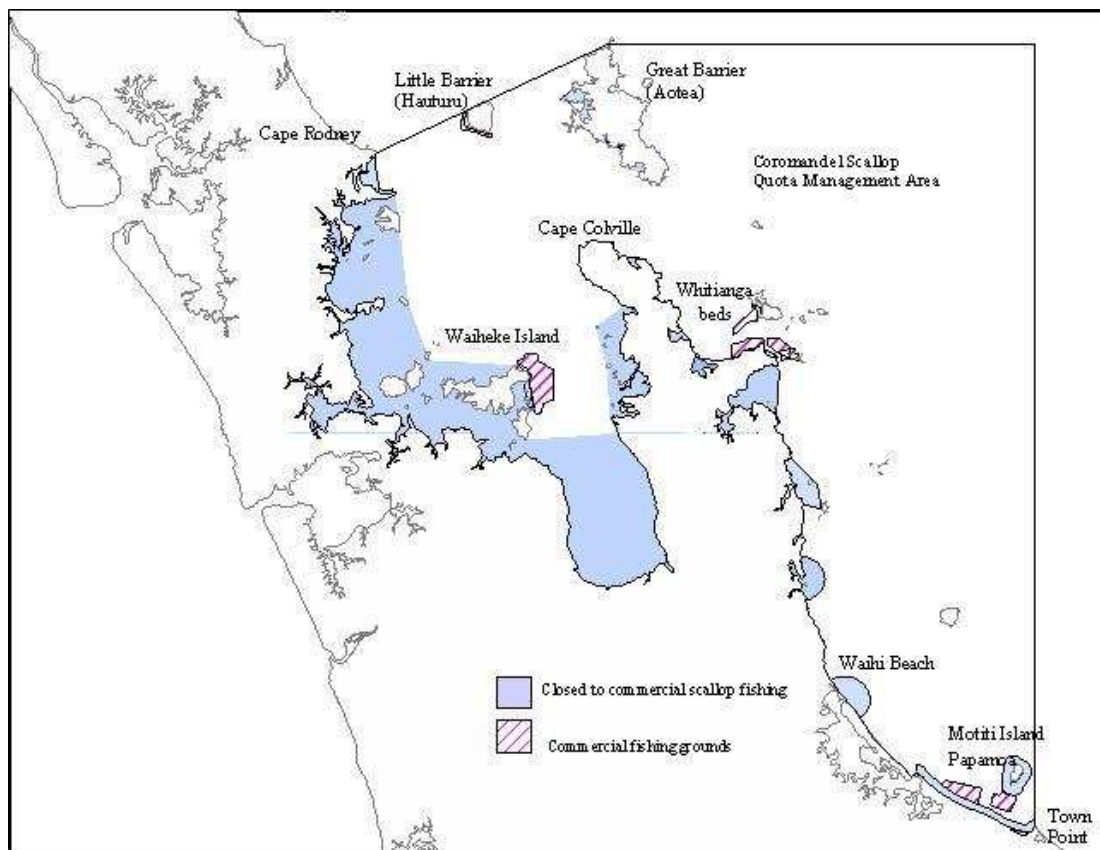
8 The in-season TAC and ACE review enables you to match the catch limit to the biomass and therefore maximise the benefits to be gained from the fishery while ensuring sustainability.

9 The management arrangements for commercial and non-commercial fishers differ. The main beds in the commercial scallop fishery are shown in Map 2 (below). Those beds are open to both commercial and non-commercial fishers. However, extensive parts of the Hauraki Gulf and many of the recreationally-preferred inshore scallop beds within the Coromandel fishery are closed by regulation to commercial scallop fishing. Therefore, there is a degree of spatial separation of the non-commercial and commercial fishing sectors.

¹ Meatweight refers to the edible part of the scallop. All figures quoted in tonnes refer to meatweight tonnes unless otherwise stated.

10 The SCACS fishery is managed using a current annual yield (CAY) strategy under s 13 of the Fisheries Act 1996 (the Act). This approach recognises the highly variable biomass that is characteristic of the stock and provides for the catch limits to be varied in harmony with the changes in biomass as indicated by scientific surveys in most years. A low baseline TAC and allowances apply at the start of the season to provide for sustainable use even in years of low biomass. Following a biomass survey, the appropriate TAC, annual catch entitlements, and non-commercial allowances can be set as informed by the survey results.

11 This year's biomass survey was undertaken in May 2009 and showed a biomass of 595 tonnes meatweight, from which a sustainable CAY estimate of 190 tonnes meatweight was calculated. Section 13(7) of the Act allows you to undertake an in-season review to adjust the TAC and ACE allowances to maximise the benefits from the fishery. At the conclusion of the fishing season the adjusted TAC and ACE allowances revert back to the baseline levels.



Map 2: Boundary of the Coromandel scallop quota management area, areas closed to commercial scallop fishing, and the location of the main beds fished by commercial scallop fishers. Some commercial fishing has also occurred off Cape Colville and off Waihi Beach.

Consultation

12 Your decision whether or not to increase the TAC and ACE for SCACS is a decision under section 13(7) of the Act and therefore the consultation requirements of s 12 of the Act apply. Section 12 requires that you consult with such persons or organisations as the Minister considers are representative of those classes of persons having an interest in the stock or the effects of fishing on the aquatic environment in

the area concerned, including Maori, environmental, commercial, and recreational parties.

13 MFish consulted the standard list of parties known to have an interest in the fishery and with whom we have previously consulted. That list includes all SCACS quota owners, commercial target fishers, processors, tangata whenua, and amateur fishing clubs and organisations. The IPP was also posted on the MFish website.

14 The proposed management options take into account the survey information showing the 2009 estimated CAY representing a level of sustainable catch over eight times higher than the baseline TACC of 22 tonnes (if habitat effects are excluded).

15 MFish undertook pre-consultation with key stakeholders. The commercial sector stated that it sought an ACE increase to 100 tonnes meatweight.

16 In the IPP MFish consulted on the following management options:

	TAC	TACC/ACE	Recreational Allowance	Customary Allowance	Allowance for Other Sources of Fishing-related Mortality
Baseline	48	22/22	7.5	7.5	11
Option 1	155	22/100	10	10	35
Option 2	150	22/100	7.5	7.5	35

17 MFish did not consult on changes to the deemed values for the SCACS fishery. No submissions raised concerns about the current deemed values. MFish recommends that the current deemed value rates be retained.

Submissions Received

18 MFish received submissions on the IPP from:

- a) Coromandel Scallop Fisherman's Association
- b) Te Ohu Kai Moana Trustee Ltd
- c) NZ Recreational Fishing Council
- d) Mount Maunganui Sports Fishing Club
- e) Whangamata Seafoods

Summary of Submissions

19 **Whangamata Seafoods** notes that it has been a quota holder and processor in the fishery for 32 years. It supports option 2 as described in the IPP. Whangamata Seafoods does not support an increase to the non-commercial allowances. It submits

that there is no basis to presume that the stock has increased in the recreational beds as it has in the commercial beds. Whangamata Seafoods also notes concern that there is inadequate monitoring of non-commercial beds and incentives to improve the area would be undermined if the recreational allowance was increased.

20 Whangamata Seafoods suggests that recreational catch has probably increased significantly in response to recent changes to the recreational regulations allowing divers to collect for safety people and the shucking of scallops at sea. The submission predicts recreational take will continue to increase with the change to the recreational season. Whangamata Seafoods feels these changes were made without supporting scientific evidence. The submission contrasts this with the process for setting the commercial catch limits, which are based on (generally) annual biomass surveys and yield estimates.

21 The submission notes that in contrast to the non-commercial sectors, the commercial sector is accountable for all its actions. Whangamata Seafoods also emphasises the cautious approach that commercial fishers have continued to follow this season, citing NIWA's survey report for 2009.

22 Whangamata Seafoods' submission notes that commercial fishing allows the majority of New Zealanders who do not have access to the recreational fishery in SCACS to purchase scallops on the domestic market.

23 Whangamata Seafoods also contends that the commercial and recreational fisheries are largely spatially separated, and claims that the best beds have been closed to commercial fishers. The submission notes that commercial fishers have reduced from fishing seven days to five days per week, as well as ensuring their dredges are tuned to optimise their efficiency. The submission cites a NIWA survey which tested three dredge designs and concluded the box-dredge used by commercial fishers is the most efficient given the bathymetry of the Coromandel fishery.

24 Whangamata Seafoods supports the comments made in the Coromandel Scallop Fishermen's Association submission regarding economic inefficiencies that the current management approach creates. Whangamata Seafoods also supports the initiatives undertaken by the Coromandel Fisherman's Association to explore more efficient management frameworks for the fishery.

25 **Te Ohu Kai Moana Trustee Ltd** notes its support for option 2 as described in the IPP. Te Ohu Kai Moana Trustee Ltd supports the submission made by the Coromandel Scallop Fisherman's Association and therefore noted that it will not repeat the statements made in those submissions.

26 **The Coromandel Scallop Fishermans Association (CSFA)** submission represents all quota owners and ACE holders in the Coromandel scallop fishery.

27 The CSFA supports option 2 as described in the IPP. The CSFA maintains that this increase is justified given the results of the stock assessment survey.

28 The CSFA raised concerns that the current low baseline TACC and in-season increase management approach creates harvest and market inefficiencies. The CSFA

submission discusses the development of an industry advancement plan and research into a management strategy evaluation that compares the current approach with an alternative based on commercial catch rates (catch per unit of effort or CPUE).

29 The CSFA acknowledges that the survey results indicate a declining trend in scallop abundance, but considers that the trends are a result of underlying environmental causes rather than as a result of commercial fishing pressure. The CSFA notes concern that environmental factors have previously removed productive areas from the fishery and that there are no measures being taken to investigate the cause or long-term implications for the fishery.

30 While the CSFA supports the proposed in-season ACE increase to 100 tonnes, it does not support option 1 (specifically, the proposal to increase non-commercial allowances) on the following grounds:

- a) There are no proposed changes to non-commercial management controls;
- b) Monitoring and control of recreational fisheries are still inadequate; and
- c) It cannot be determined if the current non-commercial allowances are caught.

31 The CSFA argues that the 2008-09 port price of \$14.38 in the IPP is not a true reflection of the current port price.

32 **The New Zealand Recreational Fishing Council (NZRFC)** submits that given the commercial fishers only caught an estimated 75% of last year's ACE that this year's ACE should be set at 65 tonnes. However, the NZRFC does state that this limit could increase if a mid-season meeting between MFish and commercial and recreational fishers agrees that extra scallops are available.

33 The NZRFC maintains that there has always been strong recreational participation in the Coromandel scallop fishery; involvement that predates the establishment of a commercial fishery in the late 1960s and early 1970s.

34 The NZRFC notes that both commercial and Maori commercial gain financially from scallop fishing, but are reluctant to contribute to wider research costs and dredge management. The NZRFC places the responsibility of ongoing associated juvenile mortality and dredge damage to the marine environment squarely with commercial fishers.

35 The NZRFC claims that commercial scallop fishers in SCACS have not done sufficient research into improving the efficiency of their dredges nor into reducing the incidental mortality of scallops or environmental damage caused by dredging. The NZRFC asserts that incidental mortality of scallops is as high as two scallops killed for every one scallop captured.

36 The NZRFC argues that commercial fishers have a moral and legal obligation to reduce the incidental mortality and environmental damage associated with the use of dredges. It states that until MFish takes a "hard line conservative approach", there will be no incentive for commercial fishers to improve their dredge design.

37 The NZRFC states that the unavailability of robust data on recreational fishing areas and recreational catch levels is unacceptable, but it believes that the state of commercial beds (as described by the pre-season survey) must be in part of similar biomass.

38 The NZRFC notes it has no option but to rely on the commercial sampling for the wider scallop fishery, and must assume that this is a fair indication of the state of the commercial closed areas which boundary the open fishery.

39 The NZRFC expresses concern that the biomass is showing a further 30% drop on top of a 30% drop in 2008. The NZRFC suggests that the fishery within the amateur-only areas is showing a rebuild in spite of the declining trends in areas commercially fished.

40 The NZRFC supports the current pre-season assessment system and pre-season baseline. It sees no reason to change this management approach. The NZRFC believes that the “conservative baseline” approach avoids a lot of unnecessary costs although it states that the onus is on MFish to be certain that the baseline remains and is indeed conservative. The NZRFC expresses concern that in times of poor information there is the potential for “unrestrained fishing”.

41 The NZRFC argues that local authorities have a responsibility to ensure that our marine environment and the shellfish stocks within are not contaminated or destroyed by urban runoff. The NZRFC notes disappointment with MFish choosing not to submit on the recent dredge dumping proposals in the Hauraki Gulf. The NZRFC believes that it is important that MFish plays an active role in protecting our marine environment, and should be a “constant lobby force” to local authorities and any RMA process effecting the coastal environment.

42 The NZRFC believes that the allocation of 10 tonnes respectively for recreational and customary is “light”. The NZRFC advocates for an increase in the non-commercial allowances to 20 tonnes respectively. However, it notes that such increases are semantic as the sector catches what it catches. It notes that there is a degree of uncertainty in recreational catch in SCACS and that catch is likely to vary from year to year depending on catch per unit effort, climatic conditions during the open season, and the condition of scallops.

43 **The Mount Maunganui Sport Fishing Club’s (the Club)** submission notes that it is located in the Pauanui–Motiti area and represents 1773 members. The club submits that its comments are directed at its local scallop beds only. It does not support the proposed options to increase the TAC as described in the IPP.

44 The Club expresses concern that the scallop beds located off Papamoa and Motiti are depleted due to commercial scallop fishing in the area.

45 The submission also expresses concern about the use of commercial scallop dredges over areas of reef systems in the Papamoa and Motiti area and the mortality rate of 35 tonnes. The submission argues that the dredges are poorly designed and recommends that new dredge technologies should be implemented.

46 The Club's submission suggests that the Coromandel scallop fishery is too large to be managed as a single fishery and recommends the two main fishing areas be managed separately.

47 The Club's submission questions whether starfish were identified as a threat in the surveys. The submission asks whether there is the possibility to eradicate the starfish and recommends that research be undertaken as to the effect of the starfish populations on the shellfish beds.

48 The Club also notes that there should be information available from customary permits issued for the Papamoa area. The submission questioned why there was no information available to MFish of customary take in the Coromandel scallop fishery.

MFish Response to Submissions and Discussion

Determining the TAC

49 MFish notes that there is no current assessment of the entire stock on which to base a TAC. The biomass survey upon which the CAY is estimated relates to those parts of the stock that are open to both commercial and non-commercial fishers², but primarily utilised by commercial fishing. The estimate of CAY is a valid reference for informing the sustainable level of commercial catch under the TAC, which under the provision of s 13(7) of the Act provides for generating additional ACE within the season.

50 The proposed TAC options are composites of the respective stakeholder sector groups' catch allowances, plus any fishing-related mortality that can be assessed for the commercial fishery. The incidental mortality arising from commercial fishing is accounted for in the stock assessment and in determining the CAY estimate, and therefore can be added to the CAY to contribute to the TAC. MFish considers that the allowances for other sources of fishing-related mortality and for non-commercial fishing can be safely added to the baseline TACC, plus any additional ACE that might be allocated in the fishery within the season, to form the basis of the TAC.

51 MFish considers that both proposed TAC options are at cautious levels with respect to the estimate of CAY from the beds open to commercial fishing. NIWA calculates that the level of risk that either of the two options will exceed sustainable levels (the true sustainable yield) is less than 1%. MFish considers that there is effectively no difference in the level of risk between the two options from the perspective of overall stock management.

Level of ACE for commercial fishing

52 MFish notes that stakeholder groups that made submissions were of different opinions regarding the proposals to increase the in-season ACE to 100 tonnes. While

² While there is an on-going research project (SCA2007/03) to establish baseline abundance data from key scallop beds in the Coromandel (and Northland) scallop fishery, these data are not sufficient to estimate total abundance in recreational areas or to infer yield estimates from these areas.

all three commercial stakeholders supported the proposed ACE increase, both recreational submitters felt the level of the proposed ACE increase was too high.

53 MFish provides the following discussion in response to concerns regarding the extent of the proposed in-season ACE increase.

54 MFish notes submissions pointing out that the 2009 biomass estimate was less than the same estimate in 2008, and continues a trend of decreasing biomass. The NZRFC argues that the biomass decrease mandates a similar reduction in the level of in-season ACE made available to commercial fishers.

55 Variability in recruitment is known to be an inherent part of scallop population dynamics and is thought to be strongly linked to environmental conditions, such as the availability of food, sea temperature, prevailing weather patterns etc. However, it is still nearly impossible to predict or definitively explain changes in the abundance of scallops. This is why the Coromandel scallop fishery is managed as a Second Schedule stock.

56 MFish notes that, although the 2009 biomass estimate is lower than the previous year (the biomass has dropped below the long term average for the first time since 2003), several years of declining biomass is by no means abnormal in a scallop stock, and the decline seen in the biomass estimates from 2006 to 2009 in the Coromandel fishery could have occurred even if there had been no fishing. Consistent trends should not be expected in scallops because their recruitment and growth varies so much between years (and areas).

57 The best estimate of the single-year maximum sustainable yield (MSY) for a fishery such as SCACS is provided by the CAY, which is estimated as a constant proportion of the available biomass in any given year. As such, the yield estimate provided by NIWA for 2009 already reflects the decline in biomass from 2008 to 2009. The best estimate of the CAY from beds open to commercial fishing for 2009 is 190 tonnes (using the same assumptions about scallop growth, mortality etc that have formed the basis of management proposals in recent years)³. Given that the equivalent CAY estimate for 2008 was 276 tonnes, the 2009 estimate of 190 tonnes approximates to a reduction of 31 %.

58 MFish reiterates that a highly variable biomass is to be expected in scallop populations, and a decline is not necessarily of itself sufficient reason to restrict fishing to baseline levels. As the pre-season biomass survey estimates that a harvest level of up to 190 tonnes would be sustainable, MFish is satisfied that an ACE level of 100 tonnes is an inherently cautious and appropriate commercial catch limit.

³ NIWA actually provides MFish with two CAY estimates; one which accounts for the direct effects of dredging on scallops encountered by the dredge *and* the putative effects of dredging on scallop habitat and the consequent effects this might have on juvenile survival, growth and recruitment and one which only includes the direct effects. MFish uses the latter estimate, but provides the estimate *including* putative habitat effects for your reference.

The need for caution in setting the TAC and ACE increase

59 The surveyed biomass and estimated yields for 2009 were derived not from the entire productive area of the SCACS fishery, but from only the beds primarily used by commercial fishers, (although these beds are also open to non-commercial fishers). It seems reasonable, therefore, to conclude that additional biomass and yield will be available from the non-commercial areas of the fishery not included in the survey. A point of note, however, is that the estimates are for recruited biomass of scallops greater than 90 mm, which is the size limit applying to the commercial fishery. The recreational minimum size is 100 mm. Although this will have some effect on the yield available to non-commercial fishers in the surveyed areas, MFish considers that the survey estimates of biomass and yield are inherently cautious if considered as estimates for the overall stock, in the absence of estimates for the non-commercial beds.

60 MFish considers that the TAC for Coromandel scallops could be increased to the level of the CAY estimate while satisfying the sustainability obligations under s 13. Under this scenario, the TAC would be set at a level that by definition will move the stock towards or above the level that will produce the MSY over the longer term. Setting the TAC at a level substantially less than the CAY represents a more cautious approach, and constitutes a decision under s 13(2)(a) that would be likely to maintain stock size above that which can produce the MSY, consistent with some submitters' views that the fishery should be managed above the B_{MSY} level.

61 MFish notes the submissions from the two recreational parties suggesting that the proposed increase in ACE is too high. While those submitters noted the need for cautious management as the rationale for their views, they did not provide any analysis of how their proposals related to the research-based information on yield for 2009. MFish considers that the proposed ACE increase to 100 tonnes is already a cautious approach as it involves the harvest of only 52.6% of the CAY estimate.

62 The NZRFC argues that ACE should be increased to only 65 tonnes, with the potential for an increase if a mid-season meeting of MFish, recreational and commercial fishers agrees that further yield is available. MFish believes that the necessary information to support a commercial catch limit of 100 tonnes is present in the 2009 biomass survey report. MFish considers that a further mid-season review would introduce undue uncertainty and delay, and notes that this option has been investigated in the past.

63 MFish notes the commercial fishers' proposal to 'shelve' 35 tonnes of the available ACE (should you agree to increase the TAC as per options 1 and 2) pending a mid-season evaluation of fishery performance. Their proposal hinges on CPUE as a primary indicator of performance and an indicator of whether or not fishers would agree to make additional ACE available. Fishery Assessment Report 2001/8 describes that data available mid-season (commercial catch per unit effort data) was not a reliable indicator of biomass, even after grooming and extensive analysis. While MFish considers that some of the fishers' proposals for improving the catch and effort information reporting will enhance the value of CPUE, the information already available from the pre-season survey indicates that the level of risk of exceeding the

sustainable limit when harvesting up to 100 tonnes is less than 1% and the primary option to increase ACE to 100 tonnes is appropriate.

64 Similarly, MFish disagrees with the NZRFC's assertion that the commercial under-catch in 2008 is a reason to limit commercial fishers to 65 tonnes of ACE. Commercial fishers have explained to MFish that several factors can result in the catch limit not being fully caught in any year. Weather can prevent vessels from fishing for extended periods and this has happened in recent years. In a relatively short fishing season, any lost fishing time is difficult to catch up, particularly with the limited number of vessels operating in the fishery in recent years. Also, easterly storms can adversely affect scallop condition and fishers note that they will regularly stop fishing until scallop condition improves as it is often not worthwhile to fish while scallop condition is poor. Commercial fishers have also voluntarily stopped fishing through concerns at the high number of juvenile scallops being brought up in dredges at some stages in the season. Those decisions protect cohorts of juvenile scallops from being damaged by dredges in order that they might be harvested the following year.⁴ Fishers stress that while they could have caught up to or near the level of available ACE (even though they had fewer fishing days available due to bad weather) they deliberately chose not to in order to safeguard the following season. MFish congratulates commercial fishers on this responsible management action, and notes that reducing the TAC because of last year's under-catch could dissuade fishers from taking such responsible action in the future.

Basis for the proposed in-season ACE increase

65 MFish notes that the consensus recommendation from the 2009 Annual General Meeting of the Coromandel Scallop Fishermen's Association (CSFA) was to increase the ACE to 100 tonnes. The CSFA has stressed that the commercial quota-holders are again taking a cautious and responsible attitude towards increasing ACE. Quota holders have stated their preference to take a conservative management approach due to the high natural variability of the scallop population and a desire to improve the stability of catches over the long term. MFish recognises the cautious management approach again adopted by the CSFA. MFish reiterates that the proposal to increase ACE to 100 tonnes represents a cautious approach at only 51 % of the 190 tonne CAY for the 2008–09 fishing year.

Implementation of ACE increase

66 As in previous years, stakeholders from the commercial sector have commented to MFish that the in-season review process introduces considerable uncertainty into business planning processes. They state that as additional ACE is not guaranteed until it is Gazetted as late as the end of August, it is difficult for processors to guarantee retail orders will be met, and difficult for fishers to budget for income and boat maintenance. Moreover, they note that as the 22 tonnes of baseline ACE can be fished very quickly, commercial fishers are either required to stop fishing, or to fish against deemed values, without any guarantee that the level of ACE they have sought (or indeed, any extra ACE) will be granted.

⁴ MFish notes that the biomass survey clearly shows a large cohort of scallops present throughout much of the fishery.

67 MFish is aware of the time constraints in this fishery, and endeavour each year to undertake the process without unnecessary delay, while observing all statutory obligations to consult.

Port price information

68 The CSFA stated in its submission that it did not consider that the \$14.38 port price quoted in the IPP was a true reflection of the current port price. MFish contacted the CSFA for up-to-date port price information and was provided with a port price figure of \$14.50 (in the hand to a fisher). MFish notes that the difference in price would add approximately a further 1% to the revenue return from the fishery.

Recreational allowance

69 There are several areas of the fishery (largely inshore embayments) that have been set aside by regulation exclusively for non-commercial fishing. The remaining areas of the fishery are not exclusive to commercial fishers, but are open to all sectors. These are the areas surveyed to determine biomass and yield. MFish considers that it is reasonable to provide for non-commercial allowances under the CAY estimated from these areas that are open to all. MFish recognises, however, that available information suggests that there is relatively little fishing by non-commercial fishers in the areas open to all, possibly because of easier access to scallops in the areas closed to commercial fishers.

70 MFish notes that the Act does not expressly state the manner in which you must allow for interests in the fishery, or the factors to be taken into account when making these allowances and apportioning the TAC between different stakeholder groups. The allocation of the TAC is a matter for you to assess, taking into account relevant considerations. MFish believes that a relevant consideration is that the fishing sectors are spatially separate to a relatively large extent. Therefore, any yield assessed from the scallop beds primarily utilised by commercial fishing may be allocated largely to that sector. From a legal perspective there is no obligation to undertake a proportional adjustment to Maori customary, recreational or commercial interests when the TAC is varied for the purpose of ensuring sustainability.

71 Some submitters expressed concern about the lack of surveying of scallop abundance on recreational beds. They consider that there is little basis for assuming biomass changes on non-commercial beds are necessarily in the same proportion as the surveyed beds.

72 MFish acknowledges that there is considerable uncertainty regarding the relationship between surveyed areas and non-commercial beds, but notes that a research programme began in 2006 to survey scallop abundance on the beds open only to non-commercial fishers. As the results of that programme become available, we will be better informed about the relationship between abundance in the different areas, and better able to inform management decisions. At this stage, however, the

relationship remains undetermined and the extent of yield from those areas is unknown.

73 Whangamata Seafoods noted that recent changes to the recreational fishing rules for scallops (i.e., the season change and the safety person bag limit and “shuck-at-sea” rules) which have provided for an increase in scallops available to recreational fishers, and suggested that the effects of those changes should be monitored before contemplating further changes. Some submitters also note that changes to the allowances should not be made without better estimates of catches by the non-commercial sectors. MFish notes that research into recreational scallop catch estimation is underway and will be available to inform future reviews. MFish notes also that you are required to make allowances for recreational and customary Maori non-commercial interests in the fishery, using all the relevant information that is available. MFish considers that, in determining allowances, you should consider information about the interests of non-commercial fishers in the scallop fishery more broadly, rather than simply basing allowances on uncertain estimates of use.

74 MFish agrees it is likely that catches for 2009–10 could exceed the baseline allowances of 7.5 tonnes. The available biomass estimate is close to the historical average, and higher than when the baselines were estimated. An increased recreational catch could be attained due to a number of factors. Existing fishers might fish more frequently. If catch rates are good, there are likely to be more “new” and “occasional” fishers fishing for scallops. In addition, fishers might more frequently attain their full legal entitlement of scallops ie. the current daily bag limit of 20 scallops per fisher per day.

75 The NZRFC submission questions the accuracy of the 7.5 tonne baseline and asks what MFish is doing to improve its understanding of recreational harvest in SCACS. At present, the results from the research surveys in 1996 and 2000 remain the best information available to MFish for estimating recreational catch in SCACS, and form the basis of the 7.5 tonne allowance. However, MFish notes that surveys of recreational beds are currently underway, and a pilot study (REC2007/11) estimating recreational scallop harvest from Cape Colville to Hot Water Beach began on 1 October 2007. These projects are expected to provide information with which MFish can set a more appropriate recreational allowance and better allow for changes in harvest between seasons. These results should be available for consideration in any review of the fishery for 2010-11.

76 The NRFC submission also proposes increases to the recreational allowance that are far greater than the MFish proposal of 10 tonnes. However, the NZRFC does not provide any detailed rationale or analysis of how it derived its proposed numbers. In the absence of such explanation, it is difficult to evaluate the proposals and provide advice on their relevance. MFish notes that it is open to you to consider the increases to the recreational allowance as proposed by the NZRFC and decide on different allowances to those consulted on via the IPP. However, should you wish to set markedly different allowances, it might be necessary to consult again, and that would risk delays and compromise the operation of the commercial fishery.

77 Given the possibility that the recreational catch could be higher than the estimated 7.5 tonnes, MFish considers it reasonable to increase the recreational

allowance to some extent. However, MFish does not have reliable information from which to gauge the extent of any potential increase. Last year, with a slightly higher estimate of abundance from the survey of commercially-fished beds, MFish proposed a likely realistic scenario of recreational catch increasing from 7.5 to 10 tonnes. Although the biomass estimate this year is reduced from last year, it is well above the level when the baseline estimates were determined. The relatively greater abundance this year suggests a comparable increase could be likely.

78 Should you consider that there is sufficient evidence to support an increase in the recreational allowance, MFish proposes that it be increased from 7.5 to 10 tonnes meatweight. The recreational allowance would then revert to 7.5 tonnes meatweight at the end of the current fishing year, 31 March 2008. However, should you feel there is insufficient information to increase the allowances this year, or that you would prefer to wait for the results of REC2007/1 and SCA2007/3 to inform any future changes, MFish proposes that you retain the recreational allowance at its current level of 7.5 tonnes.

Maori customary non-commercial allowance

79 The NZRFC submitted that the customary allowance should be raised (in conjunction with the recreational allowance) from 7.5 to 20 tonnes. MFish currently has no better information to inform the setting of the customary allowance than was used to set the original level. Using similar assumptions as for the recreational allowance, MFish proposes that you could increase the customary allowance from 7.5 to 10 tonnes if you agree that catch is likely to increase with the relatively high abundance of scallops in SCACS this year.

80 The Mount Maunganui Sport Fishing Club asked why there is no information about customary catch. Two systems are available for iwi to obtain authority to take fish for customary purposes – Regulation 27 of the Fisheries (Amateur Fishing) Regulations 1986 and the Fisheries (Kaimoana Customary Fishing) Regulations 1998 set up via the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992. MFish notes that some information is available from the customary permits issued under Regulation 27, although that information only details the maximum catch quantity allowed under the permit. It is not helpful for estimating actual catch, as that quantity is not reported. In addition, the required reporting of catches to MFish under the Kaimoana Regulations only becomes available once iwi have established rohe moana, appointed kaitiaki, and are using the permit system. Few iwi within the Coromandel scallop fishery boundaries have yet done so.

Environmental issues

81 Both of the submissions from the recreational sector raised the issue of the negative effects of dredging on the environment. Concerns included the incidental effects on localised scallop populations and effects to wider health and productivity of the benthic environment where dredging occurs. The NZRFC stated its understanding that two scallops are killed for every one scallop captured by the commercial dredges used in SCACS. Both submitters expressed disappointment at the lack of research into reducing the impacts of dredging.

82 The Mount Maunganui Sport Fishing Club submission refers specifically to concerns that commercial scallop fishing is damaging fragile reef systems off Papamoa beach. MFish notes there has been almost no commercial scallop fishing in this region in recent time. Catch records reveal that only one or two vessels have fished the area in the past few years, and have recorded negligible catch. Fishers report that they avoid the areas because the catch rates are not economically viable. The low scallop densities shown from the NIWA survey support that.

83 MFish has raised concerns with the local councils about storm water and associated effluent outflows into the coastal environment near Papamoa. Those concerns arise from the potential for effluent to adversely affect scallops, and the aquatic environment generally, in the area. MFish will be raising the profile of such concerns within the scope of recognising the impacts of land-based effects on coastal fisheries and achieving better integration between the Resource Management Act and Fisheries Act.

84 MFish recognises that commercial dredging can affect the growth and mortality rates of scallops, and might make scallops more vulnerable to predation. However, MFish notes that the incidental effects of dredging on scallops encountered by dredges are expressly allowed for in the stock assessment model and other sources of mortality (OSM) allowance within the TAC. This allowance represents the extent to which dredging for scallops decreases the growth rate and increases mortality of those scallops either passing through the dredge or undersized scallops collected by the dredge, but subsequently returned to the sea. The allowance for OSM was calculated to be 34.4% of the level of commercial fishing when harvesting at the level of the CAY⁵, and will be less if harvesting below the CAY as proposed by commercial fishers this season.

85 In broad terms, an allowance of 34.4% of ACE means that over the whole of the SCACS fishery, for every three scallops taken by commercial dredge, the equivalent⁶ of approximately one additional scallop is killed, when fishing to the level of the CAY. Actual incidental mortality varies with fishing pressure, such that if a large proportion of the CAY is removed from one bed, incidental mortality in that area would be higher than 34.4%, due to the increased fishing pressure applied to that bed. However, incidental mortality in all other beds in the fishery would be reduced, due to the lower fishing pressure in these areas. When catch rates are particularly low and fishing pressure is high, incidental mortality can be as high as 100%, i.e. for every one scallop taken, another is killed. This situation is rare, and only occurs when scallops are rare (such as during the period 1999-2000). MFish has no evidence to suggest that incidental mortality has ever approached the level of “two scallops killed for every one taken” (equating to an OSM allowance of 200%) as alleged by the NZRFC. Therefore, MFish uses the figure of 34.4% as the best estimate of incidental

⁵ Calculated by NIWA in 1997; recreational dredges were found to have a negligible effect on scallop mortality and growth rates (see Cryer, M., Morrison, M. (1997). Yield per recruit in northern commercial scallop fisheries: inferences from an individual-based population model and experimental estimates of incidental impacts on growth and survival. Final Research Report for Ministry of Fisheries project AKSC03. 32 p.

⁶ Scallops are not only killed by dredges, but can suffer non-lethal effects whereby their growth or reproductive capacity might be reduced for a period of time. The allowance for other sources of fishing-related mortality considers all these effects, and reference to scallops “killed” allows for all lethal and non-lethal effects to scallops as a result of dredging.

mortality across the whole of the SCACS fishery, although it will overestimate incidental mortality when harvesting at about 50% of the CAY as proposed this year.

86 The use of commercial dredges is also thought to modify the benthic environment in which scallops are found. Two potential effects of this habitat modification are a reduction in the availability of surfaces upon which scallop spat can settle, and an increase in juvenile mortality. In recognition of this, NIWA provides an alternative CAY estimate from the beds open to commercial fishing that allows for the indirect “feedback” effects of habitat modification on juveniles. While this CAY estimate is not currently used to manage SCACS, you may wish to note that at 129 tonnes, it is still larger than the proposed in-season ACE increase for the 2009-10 fishing year.

87 Both recreational submissions refer to the desirability of further research into dredge design, with a view to increasing efficiency and decreasing incidental mortality and environmental effects in SCACS. Dredge efficiency trials (contracted by MFish) carried out in the Coromandel fishery in the mid 1990s indicated that the box dredge used in SCACS is thought to cause more environmental damage and higher incidental mortality for a single tow than other available dredges (such as the ‘ring-bag’ or the “keti ami” dredge types). However, the considerably higher efficiency of the box dredge on the harder, sandy surfaces typically fished in SCACS means that fewer tows are needed to catch the same quantity of scallops, and thus the overall area subject to dredging is reduced. Modelling suggests that the higher efficiency of the box dredge should more than compensate for the rate of damage from each tow, making its use preferable to other dredge types.

88 MFish acknowledges that dredging has an effect on the benthic environment in parts of the Coromandel scallop fishery that are fished frequently. However, research has indicated that within the fishery boundaries, dredging affects only a modest proportion of most habitat types and large proportions remain un-dredged. The implications of dredging affecting a larger proportion of a few habitat types will be considered with reference to the development of a benthic impact standard.

89 MFish is uncertain whether or not further research into the box dredge would result in modifications that might improve its efficiency and/or reduce its impact on the benthic environment, although a watching brief is being kept on novel designs being tested overseas. MFish believes that at the current cautious utilisation levels, and with the incidental effects of dredging on scallops explicitly included in the TAC, the effects of commercial dredging on scallops and on the benthic environment are likely to be sustainable.

90 MFish has taken steps previously as information became available to indicate dredging was having an adverse effect on an area of special or significant biodiversity. MFish took steps to avoid, remedy, or mitigate the adverse effect identified at Spirits Bay in the Northland scallop fishery in the late 1990s. Research information indicated that dredging and trawling were likely to be having a significant adverse effect on the rare and endemic benthic biota only occurring in that area. Consequently, a large area at Spirits Bay and Tom Bowling Bay was closed by fisheries regulation to dredging and trawling. MFish notes that a benthic impact

standard is being developed and will provide a reference for the determination of acceptable levels of impact in the near future.

91 The Mount Maunganui Sport Fishing Club submitted concerns about the prevalence of starfish in the area and the views that starfish are a threat to scallops. MFish notes that it is known that starfish prey upon shellfish species like scallops, but that is a normal feature of the ecosystem if the starfish species is indigenous. MFish is aware of reports from the wider Bay of Plenty about perceived greater than usual starfish abundance, but no scientific survey information is available. Cycles in the abundance of species is common and a natural feature of ecosystems in response to changing environmental conditions.

Commercial exclusion areas

92 The Mount Maunganui Sport fishing club submission proposes that commercial dredges stay away from the Papamoa/Motiti area until surveys reveal that the beds there have recovered, and also that the area be separated from the SCACS management area.

93 MFish notes that the decline in scallop density in the area cannot be ascribed to fishing alone and might well be related to environmental effects. Without an understanding of the causes, there is little evidence to use in support of excluding commercial fishing from the area. Continuing to look for environmental reasons for the poor state of the fishery in the area could be more informative.

94 In contrast, several of the commercial submissions contend that most of the best areas for scallop fishing have already been closed to commercial fishing. MFish is not currently intending to close any further areas within SCACS to commercial fishing. Such proposals are more appropriately addressed through the fisheries dispute resolution process under Part VII of the Act.

Conclusions

95 After consideration of submissions, MFish's initial view (as stated in the IPP) to increase the TAC to 155 tonnes (option 1) is still its preferred option. As noted previously, the pre-season biomass survey estimates that a harvest level of up to 190 tonnes would be sustainable, this suggests that both options represents a cautious approach to the fishery and that the fishery can support the proposed TAC and allowance increases under option 1.

96 MFish is aware that commercial fishers plan to 'shelve' 35 tonnes of ACE until a mid-season commercially-led review is conducted. Under this cautious approach to the fishery, it is possible that the level of exploitation would be reduced if ACE is not released following the mid-season review.

97 MFish considers that proposals to set a lower TAC now with provisions to do another review later in the season would not be practical nor cost-effective given the short fishing season for scallops.

98 MFish acknowledges concerns raised regarding the Papamoa-Motiti beds and is working collaboratively with the local council to investigate the environmental concerns raised.

Recommendations

99 MFish recommends that, for SCACS for the fishing year which commenced on 1 April 2009, you:

- a) **Note** the contents of the IPP and FAP;
- b) **Note** the contents of the submissions in full;
- c) **Note** the NIWA survey report by JR Williams and DM Parkinson, dated June 2009;
- d) **Agree** to either:

Option 1 (MFish preferred option): Temporarily adjust the TAC, ACE and the non-commercial allowances as follows:

The TAC for SCACS is temporarily adjusted from 48 to 155 tonnes meatweight, and within the TAC:

- i) adjust the allowance for recreational fishing from 7.5 tonnes meatweight to 10 tonnes meatweight;
- ii) adjust the allowance for customary fishing from 7.5 tonnes meatweight to 10 tonnes meatweight;
- iii) adjust the allowance for other sources of fishing-related mortality from 11 tonnes meatweight to 35 tonnes meatweight;
- iv) adjust the ACE for quota owners from 22 tonnes meatweight to 100 tonnes meatweight; and

NOTE that at the end of the current fishing year for SCACS on 31 March 2010, 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.

OR –

Option 2: Temporarily adjust the TAC, ACE and retain the current non-commercial allowances as follows:

Increase the TAC for SCACS from 48 to 150 tonnes meatweight, and within the TAC:

- i) retain the recreational fishing allowance at 7.5 tonnes meatweight;
- ii) retain the customary fishing allowance at 7.5 tonnes meatweight;

- iii) adjust the allowance for other sources of fishing-related mortality from 11 tonnes meatweight to 35 tonnes meatweight;
- iv) adjust the ACE for quota owners from 22 tonnes meatweight to 100 tonnes meatweight; and

NOTE that at the end of the current fishing year for SCACS on 31 March 2010, the TAC will revert to 48 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.

- e) **Sign** one of the two *Gazette* Notices (in the Appendix attached) that corresponds with the TAC option that you select; and
- f) **Note** that the existing Deemed Value rates will be retained.

Russell Burnard
Manager Information and Regulatory

AGREED / AGREED AS AMENDED / NOT AGREED

Hon Phil Heatley
Minister of Fisheries

/ / 2009

Appendix 1: Draft *Gazette* Notices