

SNAPPER (SNA 8) – FINAL ADVICE

Initial Proposal

1 The Ministry of Fisheries (MFish) proposed the following management measures for SNA 8:

- a) Decrease the current total allowable catch (TAC) of 2 060 tonnes to allow the SNA 8 stock to rebuild according to one of the options proposed in Table 1.

Table 1. Options for TACs, allowances and TACCs for SNA 8

	Allowance Approach	Total Allowable Catch (tonnes)	Customary Allowance (tonnes)	Recreational Allowance (tonnes)	Other fishing mortality (tonnes)	Total Allowable Commercial Catch (tonnes)
Option 1. TAC reduction of 138 tonnes	Proportional	1 922	50	335	139	1 398
	Non-proportional	1 922	50	360	137	1 375
Option 2. TAC reduction of 275 tonnes	Proportional	1 785	50	311	129	1 295
	Non-proportional	1 785	50	360	125	1 250
Option 3. TAC reduction of 550 tonnes	Proportional	1 510	50	261	109	1 090
	Non-proportional	1 510	50	360	100	1 000

AND

- b) Reduce the amateur daily bag limit in the northern part of the stock from 15 to 10, in line with current bag limits for the southern part of the stock.

OR

- c) Review the effect of increasing recreational catches on rebuild rates of the stock when better recreational catch estimates are available.

AND

- d) Increase the annual deemed value of SNA 8 to \$8.68 (GST excl.), 200% of the 2004 port price, to minimise the current over catch of the TACC and to provide an incentive for fishers to land SNA 8 against annual catch entitlement (ACE).

Key Issues

2 The key issues to consider for SNA 8 are as follows:

- a) The TAC for SNA 8 is set under s 13 of the Fisheries Act 1996. There is a requirement to maintain the biomass of any fishstock managed under

s 13 (2) (a) at a target stock level, being at, or above, a level that can produce the maximum sustainable yield (B_{MSY}). If below B_{MSY} , s 13 (2) (b) requires you to take measures to restore the biomass to, or above, this level.

- b) In 1998 the Minister of Fisheries set a TAC for SNA 8 that was expected to allow the fishery to exceed B_{MSY} by 2008. However, the 2005 SNA 8 stock assessment estimates that the current biomass of the stock is approximately 50% of B_{MSY} (range between 39% and 60%) and 8-12% of unfished biomass.
- c) Current stock modelling predicts that under the current TAC, biomass is expected to increase slowly, but will not reach B_{MSY} within the next twenty years. There is a 64% chance that biomass will increase in the next five years.
- d) SNA 8 is an important fishery to both recreational and commercial fishers. Accordingly there will be benefit in rebuilding the stock at a faster rate or with a greater probability than is likely under the current TAC. The paper proposes four options: maintain the *status quo*, and three alternative TAC options. Each alternative option will result in greater certainty of rebuild at a faster rate than maintaining the *status quo*.
- e) The key issue in considering the different TAC reductions is the benefits associated with the various rates of rebuild, relative to the socio-economic impacts of reduced catch limits.
- f) Two approaches are proposed to set allowances and the total allowable commercial catch (TACC) under each TAC option. The first approach is a proportional approach, where allowances between sectors are made according to current proportions of the TAC. The second approach is a non-proportional approach based on past management action in the fishery and the perceived importance of the fishery to different sectors.
- g) For SNA 8 the proportional approach results in a proportional reduction to the recreational allowance and the TACC. Under the non-proportional approach for SNA 8 only the TACC is reduced. The recreational allowance remains unchanged. The customary allowance remains unchanged for all options.
- h) If the recreational allowance is reduced, a decrease in the daily bag limit will be required in order to ensure that recreational catch does not exceed the allowance. If this option is preferred, MFish proposes to decrease the daily bag limit in the northern part of the stock¹ from 15 to 10. This is in line with the current bag limit of 10 for the southern part of the stock².
- i) No reduction in recreational allowance is proposed under the non-proportional approach. However, as there is uncertainty in the recreational catch estimates, MFish will review recreational catch information when new survey results are available, to ensure recreational catch is within the allowance set.
- j) The SNA 8 TACC is generally over caught by approximately 10%. To discourage fishers from fishing beyond their ACE, the IPP proposed to increase the deemed value to \$8.68 (GST excl.). However, snapper is caught as bycatch in other fisheries and in the current market, ACE can be extremely difficult to acquire. An alternative deemed value of \$4.25 (GST excl.) may be

¹ The “northern part” refers to the area within SNA 8 north of Tirau Point to North Cape, where the current daily limit is 15.

² The “southern part” refers to the area within SNA 8 south of Tirau Point, where the daily limit is already 10.

more appropriate, set marginally higher than the current port price and ACE transactions. Differential deemed values will still apply.

Submissions

3 Submissions on the management proposals for SNA 8 were received from:

- **Aotearoa Fisheries Limited (AFL)**
- **Egmont Seafoods Limited** (Egmont Seafoods)
- **Environment and Conservation Organisations of New Zealand (ECO)**
- **John Forrest**
- **Kaipara Harbour Study Group** (The Kaipara study group)
- **Kayla Fishing Co Ltd** (Kayla)
- **Keith Armstrong**
- **Lady Marcella Fishing Ltd** (Lady Marcella)
- **Michael Healy**
- **Muriwai Sport Fishing Club** (Muriwai SFC)
- **Murray Watson**
- **Murray Wells**
- **New Plymouth Sportfishing & Underwater Club Inc**
- **New Zealand Federation of Commercial Fishermen Inc (NZFCF)**
- **New Zealand Recreational Fishing Council (NZRFC)**
- **option4**
- **Pete Saunders**
- **Royal Forest and Bird Protection Society** (Forest & Bird)
- **Sanford Limited** (Sanford)
- **Seafood Industry Council** (SeaFIC)
- **Sealord Group Limited** (Sealord)
- **Snapper 8 Company Ltd** (Snapper 8)
- **Taranaki Fisheries Liaison Committee** (Taranaki FLC)
- **Taranaki Recreational Fishers Association** (Taranaki RFA)
- **Te Ohu Kai Moana Trustee Limited** (Te Ohu)
- **Te Runanga o Ngati Ruanui** (Ngati Ruanui)
- **The Pagrus Auratus Company Ltd** (Pagrus Auratus)
- **Urenui Boating Club Inc.**
- **Wanderers Surfcasting Club**

Rationale for Management Options

Stock status

2005 stock assessment

Submissions

- 4 **Kayla** questions whether the scientific tests have been carried out correctly and professionally, given that the quantity of snapper caught as bycatch by the company has increased.
- 5 **Pete Saunders** would like to see more physical proof that has resulted in the situation of the biomass being only 10 % of unfished biomass.
- 6 **Ngati Ruanui** submits that not enough information on all forms of take is known for the stock assessment.
- 7 **Snapper 8, Sanford and Pagrus Auratus** have questions about the merits of the scientific tagging programme that contributed to the biomass estimation model. They submit the tagging estimate is an under estimate of biomass because of what they claim are two incorrect assumptions made in the project:
 - a) That the tagged fish mix evenly through the snapper population;
 - b) That tag release and recover did not occur in deep water, excluding an unknown portion of the population from the biomass estimation.
- 8 SeaFIC and Pagrus Auratus are also concerned with what they regard as the lack of information on catches from non-commercial sectors. Pagrus Auratus notes that actual recreational catch is unknown and that basing customary catch on an extrapolation of such bad information cannot be a foundation of credible fisheries management. They say that controversy and lack of accepted empirical evidence surrounding non-commercial catch clearly results in conflict and confusion. They say that this in turn means that there can be no acceptable level of certainty as to the true state of the stock.
- 9 Pagrus Auratus notes that the research that underpins the current review of the SNA 8 fishery will have a cost in excess of \$8 million dollars. However, for all the state of the art modelling capacity, the quality of an output is fundamentally related to the quality of the input data. Pagrus Auratus firmly believes there are so many uncertainties and inherent problems with this data that the Crown cannot justify the cost benefit of using such an approach to assess snapper stocks. Pagrus Auratus believes that the \$8 million would have been better spent by the Crown to accurately monitor the actual non-commercial catch, while using less costly monitoring methods for the snapper stock in the face of such uncertainty.

MFish discussion

- 10 The majority of issues raised by Industry have been previously dealt with in the Snapper Working Group and Plenary process. This process is used to deliver the best available scientific information and is underpinned by an extensive research program

for SNA 8. Industry has fully participated in this process. However, a brief response to the main concerns are provided below.

- 11 Snapper 8, Sanford and Pagrus Auratus question the merits of scientific tagging programme that contributed to the biomass estimation model. MFish's response to this is:
- a) The IPP acknowledged that the results of the stock assessment should be treated with caution;
 - b) The stock assessment, in part based on information from the tagging programme, was agreed to in the Snapper Working Group and reported in the 2005 Snapper Plenary;
 - c) The tagging study is only one part of a large set of data used in the stock assessment. The assessment also includes catch-at-age information, year class strength information and CPUE analyses;
 - d) The Snapper Working Group recognised there were some concerns with the tagging study. To account for this uncertainty, and to give the other model inputs (e.g. commercial catch-at-age and standardized CPUE) greater relative weighting, the coefficient of variation for the 2000 biomass estimate was increased to 20% and tag-based numbers at age were fitted as proportions rather than absolute numbers; and
 - e) All parameters including the tagging estimates fit the stock assessment model very well.
- 12 Pagrus Auratus, Sanford and Snapper 8 also noted that “tag, release and recover” did not occur in deep water, which excluded an unknown portion of the population from the biomass estimation. As discussed in the Snapper Working Group, the proportion of the stock occurring in offshore strata is thought to be low. While some fish tagged inshore did move offshore, a possible offshore resident sub-population is likely to be small. This is supported by the distribution of commercial catch and effort, as boats travel up and down the coast to target snapper, but do not move offshore. In 2004, the Snapper Working Group agreed to the assumption that 10% of the snapper population occurs offshore for the purpose of deriving a biomass estimate for the stock from the tagging programme.
- 13 Pagrus Auratus are concerned at cost of monitoring methods used to input into the stock assessment. MFish considers the benefits of the tagging study outweigh the cost involved. The cost of the tagging programme is estimated to be approximately \$2.6 million. The experiment was very successful and provided a good estimate of the snapper biomass in 2002.
- 14 In addition to these tagging programme-related issues, the Snapper Working Group considered there were a number of other factors that should be considered in relation to the stock assessment results for SNA 8. The current assessment produces very precise results, which are the product of the available data and various model assumptions. However, the precision of the model assumptions may be affected by considerations that include:
- a) the tagging estimates may be biased;

- b) natural mortality is not known exactly; and
 - c) the catch history is uncertain with regard to Japanese longline catch and commercial catch overruns in addition to recreational catch.
- 15 MFish recognises there will always be some uncertainty in stock assessments due to the data inputs as well as the model construction. MFish is confident that SNA 8 stock assessment is the best available information and provided the results are treated with caution, as recommended in the IPP, MFish considers they are appropriate to use to guide management decisions.
- 16 MFish agrees with SeaFIC and Pagrus Auratus about there being uncertainty in the estimations of non-commercial catches. However, MFish does not believe that there are so many uncertainties and inherent problems with these estimates that the stock assessment cannot be used as the basis for management decisions. As mentioned previously, the Snapper Working Group has been aware of the uncertainties, but nonetheless accepted the assessment that has been finalised in the 2005 Snapper Plenary. It should be noted that stock status was fairly insensitive to differences in recreational catch (300 tonnes vs. 600 tonnes) over the range tested, which indicates that the uncertain recreational catch does not greatly affect the accuracy of the stock assessment.
- 17 MFish does not agree with Pagrus Auratus' more general comments about what it refers to as the Ministry's failure to both monitor and manage recreational catch. MFish has had an ongoing programme of recreational catch monitoring using a variety of survey techniques in recent years. While there have been questions over the accuracy of some survey findings, this kind of work is subject to ongoing refinement, and has provided information that has been useful for management decisions. These decisions have included reductions in amateur daily bag limits for snapper in both SNA 1 and the southern portion of SNA 8. These reductions have been made for management purposes.

Model projections

Submissions

- 18 **Snapper 8** and **Sanford** reject the use of the 300 tonnes and 600 tonnes recreational catch projections and submit that any recreational catches used above 360 tonnes are overestimates and incorrect. They submit that MFish should have modelled and presented the model run results in the IPP which included only 360 tonnes. They submit that any use of uncapped recreational catch estimates above 360 tonnes should not be presented.
- 19 **SeaFIC** submits the scientific basis for decision-making (in the form of projections from the current stock status under various future catch scenarios) is flawed because the range of options considered is not wide enough to cover all reasonable potential decisions. Further, recreational catch estimates are of concern because some are higher than the current allowance. In their view such estimates imply a lack of intent to manage the recreational fishery. SeaFIC says that further projection runs should be done to provide a sounder basis for the options.

- 20 SeaFIC accepts that undertaking such projections is not *per se* problematic. SeaFIC notes that it is aware that the modelled scenarios where the recreational catches are allowed to rise to very high levels are simulations, with the recreational harvest rate fixed, and recreational catch allowed to rise unchecked as the biomass increases. However, they are gravely concerned about what they see as undue weight afforded to the results from these projections in the construction of the TACC options in the IPP.
- 21 SeaFIC requested additional stochastic projections to be carried out in the same way as those presented in the IPP but with recreational catch capped at the current allocation of 360 tonnes per year (Tables 2 and 3). SeaFIC considers the first point to note is that with a TACC of 1 500 tonnes, regardless of assumed current recreational catch, the stock is projected to rebuild over the next five years, and continue to do so in the long-term. Of particular note for SeaFIC is comparing the results above with those in Table 2 on page 224 of the IPP, the benefits of managing the recreational catch to the existing allowance far outweigh those of reducing the TACC. If the current recreational catch is 300 tonnes, the projections shown in the text table suggest continued rebuilding at any of the TACC options (including 1500 tonnes). For projections with an assumed current recreational catch of 300 tonnes, the projections included in the Assessment Plenary are perhaps more instructive, suggesting a 2:1 chance of increasing over the next five years.

Table 2. 300 tonne recreational catch assumed in assessment then 360 tonne future average recreational catch

TACC (t)	$E(B_{05})$	$E(B_{10})$	B_{10}/B_{05}			$P(B_{10} > B_0)$ s)	$E(CR_{2010})$ (t)	Year when $E(B_y) = B_{MSY}$
	(t)	(t)	Expected	5%	95%			
1 250	10 934	13 434	1.21	0.80	1.64	0.80	358	2019
1 375	10 896	12 551	1.14	0.72	1.56	0.69	356	2023
1 500	10 897	11 761	1.06	0.68	1.47	0.58	352	>2025

Table 3. 600 tonne recreational catch assumed in assessment then 360 tonne future average recreational catch

TACC (t)	$E(B_{05})$	$E(B_{10})$	B_{10}/B_{05}			$P(B_{10} > B_0)$ s)	$E(CR_{2010})$ (t)	Year when $E(B_y) = B_{MSY}$
	(t)	(t)	Expected	5%	95%			
1 250	11 692	15 334	1.30	0.87	1.74	0.86	357	2016
1 375	11 701	14 415	1.22	0.78	1.65	0.79	358	2018
1 500	11 686	13 636	1.15	0.73	1.58	0.71	357	2021

- 22 SeaFIC submits that none of the three alternative options provide any greater certainty of rebuild than “under the current option.” They point out that while uncertainties in assessment and projection are mentioned in the IPP, the Ministry nonetheless says that the projections are a good basis for presenting management options. SeaFIC says that

it concurs with this in principle, but notes the uncertainties are great and are unlikely to be fixed any time soon. SeaFIC's view is that past poor performance on data gathering is a long-term problem.

MFish discussion

- 23 Industry is concerned the IPP reported two different recreational catch estimates – 300 tonnes and 600 tonnes. However, this was done in the IPP as a reflection of a Snapper Working Group decision. Snapper Working Group members agreed to use the two estimates in the modelling projections because industry and recreational fishing representatives were unable to agree on an acceptable estimate of recreational catch. The group used these two quantities for recreational catch scenarios that they considered would represent the upper and lower bounds of plausible recreational catch.
- 24 As mentioned in the IPP, MFish considers that 360 tonnes is the best estimate of average annual recreational catch. MFish acknowledges the 300 tonne and 600 tonne projections were reported in the 2005 Snapper Plenary as representing the plausible bounds of recreational catch. Reference to the 600 tonne projection in the IPP however, was not intended to show an acceptable management alternative to managing the recreational allowance at 360 tonnes. MFish agrees the reasons for presenting the projection were not clearly articulated in the IPP. While 600 tonnes has been discussed as a plausible upper bound of recreational catch through the Working Group and Plenary process, MFish considers that it best be used as a sensitivity analysis. The projection describes the risk to the rebuild rate should recreational catches actually be higher than anticipated.
- 25 MFish agree the probabilities and rebuild timeframes presented in the formulation of the TAC options should not have given equal weight to the capped and uncapped recreational catch runs. MFish does not agree with Industry's assertion that referring to uncapped runs shows a lack of intention to manage recreational catches. Instead, it was simply a modelled scenario to indicate what could happen if recreational catches increase over time. MFish has subsequently removed reference to the uncapped recreational catch scenario.
- 26 As a result of submissions on the use of the 600 tonne recreational catch estimate, as well as the uncapped catch scenario, the discussion of TAC options has been revised. The summary table of rebuild rates and probabilities has also been revised (Table 4).
- 27 MFish acknowledges that SeaFIC has provided additional projection runs. MFish notes that the Snapper Working Group has not yet seen these results. Of importance when you consider the results is that the projection run assuming a 600 tonne average historical catch, dropping to 360 tonnes in the future is highly unrealistic. Equally important, as noted by SeaFIC in their submission, the projection run assuming a 300 tonne average historical catch increasing directly to 360 tonnes in the future leads to less optimistic outcomes than would actually be the case.

Recreational catch estimates

Submissions

- 28 **NZRFC** submits it was agreed in the Snapper Working Group meetings that although the latest recreational survey could be flawed, 600 tonnes was likely to be close to the recreational take in the fishery. The NZRFC agrees that catch history for the recreational sector is uncertain, but they believe that higher projections of recreational data should be used until such time as reliable information comes to hand.
- 29 **Sanford** submits that recent research results have shown the 1999–2000 recreational results are implausibly high in the SNA 1 fishery. Sanford submits that estimates for SNA 8 are equally likely to be implausibly high, and that on the basis of extrapolations for the SNA 1 fishery, are likely to be closer to 400 tonnes.
- 30 **SeaFIC** notes that repeated attempts to determine recreational catch in SNA 8 have yielded estimates that are known to be inaccurate and biased. They note that MFish states in the IPP that the recreational allowance of 360 tonnes is likely to be the best estimate of current recreational catch. SeaFIC is of the view that the use of assessments/projections using a 600 t estimate of recreational catch and, worse, with future recreational catches allowed to increase without limit is untenable and seriously compromises the advice to you.
- 31 SeaFIC notes that the Snapper Fishery Assessment Working Group clearly indicated that the 300 tonne estimate of recreational catch was considered the most likely and that the 600 tonne recreational catch estimate was run only as a sensitivity test.
- 32 SeaFIC refers to Figure 7 in the Assessment Plenary report that shows estimates of biomass through time in relation to the 1990 and 2002 biomass estimates - both derived from the tagging experiments. In SeaFIC's view, the biomass trajectory from the assessment assuming a 600 tonne recreational catch since 1990 is clearly inconsistent with the two tag-based biomass estimates. SeaFIC says that based on this figure, even the 300 tonne recreational catch is likely too high.
- 33 Te Ohu considers that the lack of reliable catch information is the main problem associated with setting allowances for recreational catch. It notes that in 2005 the Recreational Technical Working Group considered the recreational allowance. At that time, although this group did not make any recommendation about what the allowance should be set at, it did say that the harvest estimates from the diary surveys should be used only with the following qualifications:
- a) they are very inaccurate;
 - b) the 1996 and earlier surveys contain a methodological error; and
 - c) the 2000 and 2001 estimates are implausibly high for many important fisheries. The 2000 estimates put the recreational catch for snapper as high as 661 tonnes and in 2001, 1133 tonnes.

MFish discussion

- 34 There is disagreement among Snapper Working Group members about the 300 tonne and 600 tonne recreational estimates. As mentioned, two recreational catch scenarios

were used that were considered to represent the upper and lower bounds of plausible recreational catch. The purpose of using both projections in the IPP was to identify a range of possible risks in the analysis of options. Also mentioned previously, MFish agrees the purpose of presenting the projections was not articulated clearly and the discussion of TAC options has subsequently been revised.

- 35 MFish agrees that better estimates of SNA 8 recreational catches are required. A new recreational catch research programme to provide better estimates has been contracted and will begin this year. The project will be based on aerial and boat ramp surveys, like those that have been used successfully in SNA 1. It is expected the results of these surveys will be available in time to inform the next stock assessment.

Anecdotal information on stock status

Submissions

- 36 **Wanderers Surfcasting Club, John Forrest, Pete Saunders**, the NZRFC and **option4** agree with MFish's assessment of SNA 8 stock status. They say that there has been a significant reduction in numbers and sizes of snapper caught on the west coast of the North Island. The Kaipara study group considers that there has been a decline in snapper stocks in Kaipara Harbour.
- 37 The NZRFC and option4 note the stock status assessment indicates that SNA 8 is well below the target stock level required in the Fisheries Act 1996, and consider this to be unacceptable.
- 38 The **Urenui Boating Club**, the **Taranaki FLC**, the **Taranaki RFA**, **Michael Healy**, **Murray Wells**, **Murray Watson** and **Ngati Ruanui** disagree with the status of the stock reported in the IPP and consider that snapper stocks in the Taranaki and New Plymouth regions have never been better.
- 39 Commercial fishers in the Taranaki region report an increase in the quantity of snapper caught. **Kayla** notes the quantity of SNA 8 caught as bycatch in the WAR 8 fishery has increased dramatically. **Lady Marcella** considers that snapper stocks are the best they have been in years and they have had to change fishing patterns to avoid catching them. **Egmont Seafoods** considers historical and current catch levels indicate the stock is increasing, with one skipper of a company vessel completely changing fishing areas to avoid catching snapper.
- 40 The Taranaki FLC, Murray Wells, Urenui Boating Club, Kayla and **NZFCF** consider the SNA 8 area is too large to assess the fish stock and should be split into several smaller areas. The Taranaki FLC considers this would overcome the problem that presently exists where the northern sector is currently being depleted while the Taranaki area appears to be very healthy.

MFish discussion

- 41 Submitters have different views about the accuracy of the MFish's assessment of the current status of the SNA 8 stock that was presented in the IPP.

- 42 MFish acknowledges that both non-commercial and commercial fishers are reporting good catches in the Taranaki region. Commercial catch history in the region has shown high catches in recent years, although no areas are showing a consistent trend upward.
- 43 The SNA 8 management area is large, incorporating the whole west coast of the North Island. Localised differences in catches are expected in an area this size, and could be attributable to biological factors such as spawning patterns and habitat preferences. There are also differences in fishing activity that could be responsible for the observed differences in catches.
- 44 Most of the snapper currently caught commercially in SNA 8 is taken from the northern part of the stock; fishing pressure is lower in the southern part of the stock. In recent years there has also been a reduction in the amount of trawling and in the number of participants in the commercial fishery in the Taranaki region. This reduced commercial fishing pressure in the region is likely to result in the higher localised abundance of snapper that submitters refer to.
- 45 Not all fishers in the Taranaki region consider that catches are improving. Surfcasters, or shore-based fishers have submitted they are not experiencing the same improved catches as boat based fishers.
- 46 MFish recognises there are likely to be localised differences in the abundance of snapper in different parts of the SNA 8 management area. The Taranaki FLC, Murray Wells, Urenui Boating Club, Kayla and NZFCF have suggested subdividing the SNA 8 quota management area as a response to this situation.
- 47 However, an important principle used to define quota management areas for stocks is the extent of these areas should generally correspond to the biological range of the stock species. For snapper, factors such as growth rates, genetic characteristics and tagging information have been used to determine stock boundaries around New Zealand. Although the SNA 8 management area is large, it is considered to encompass a relatively independent stock that should be managed as a single unit. No new information exists to suggest the stock boundary for SNA 8 should be changed.
- 48 MFish recommends that you note the concerns raised about the status of the SNA 8 stock, but support the results of the stock assessment as the best information available.

Restoring the stock to B_{MSY}

Submissions

- 49 NZRFC says it is heartened to read in the IPP that if a stock is assessed as being below B_{MSY} , you must take measures to restore the biomass to, or above, this level. NZRFC consider the current biomass is unacceptably low. It agrees with statements in the IPP that there are substantial benefits for all involved in this fishery if the stock is managed above B_{MSY} . In its view, a most important benefit is that such management should satisfy recreational fishers' expectations that they should have a reasonable chance of catching a reasonable daily bag.

- 50 NZRFC notes the SNA 8 stock is still reliant on successful recruitment, which makes the fishery very fragile and that given the present biomass, decisions that will achieve rebuilding have to be made.
- 51 **Wanderers Surfcasting Club** and **John Forrest** consider that MFish has a social and economic duty to ensure the stock is managed above B_{MSY} . John Forrest believes that allowing the stock to drop below B_{MSY} has resulted in snapper being unavailable, or at best in very limited supply for the majority of SNA8 recreational fishers, the surfcasters in particular.
- 52 **Snapper 8** and **Sanford** support the management of SNA 8 at a level that supports MSY.
- 53 AFL submit they have no reason to believe that moving to B_{MSY} will either significantly reduce risk or increase annual yield.

Rebuild timeframes

- 54 The **NZRFC** and **option4** submit that the previous Minister of Fisheries set a ten-year rebuild for the SNA 8 fishery in 1998 and this rebuild has not happened. As a result, they consider that recreational catch has been artificially suppressed by the low stock size. In their view this has resulted in smaller fish, less fish or both for a generation of recreational fishers. The NZRFC considers the proposed rebuild timeframe is unacceptably slow; SNA 8 is an important recreational fishery and should be rebuilt faster.
- 55 **Snapper 8** and **Sanford** are opposed to the rebuild strategy in the IPP. They submit there is no mandate, management plan or developed strategy for a rebuild timeframe to be proposed. They also submit the current TAC levels are allowing for the SNA 8 fishery to rebuild to MSY.
- 56 **Te Ohu** notes the upward trend in stock biomass and submits this is consistent with your responsibility to move the stock towards B_{MSY} . Te Ohu does not support a rapid rebuild if it involves a reduction in the TAC or TACC.
- 57 **SeaFIC** and Te Ohu consider the rebuild time of 20 years is unjustified, does not take account of balancing factors (e.g. economic impact), and is technically unsound.
- 58 SeaFIC does not believe the IPP contains any substantive justification or reasoning for the 20-year timeframe, particularly as it is used as the basis for dismissing the *status quo* option and cautioning you. They note the Court of Appeal criticized a similar lack of analysis in the Minister's decision to make a 39% TACC reduction in SNA 1.
- 59 SeaFIC submits there is no strong requirement to implement fast rebuilding at this point. This is because of what they regard as the clearly sustainable nature of the fishery over the last 25 years and the prediction that the stock will continue to rebuild under the present allowances and management arrangements.
- 60 **Egmont Seafoods** considers the rate of rebuild is uncertain and that to attempt to rebuild the stocks within 20 years would have huge economic impacts for commercial fishers and operators in Taranaki.

- 61 **Te Ohu**, Egmont Seafoods and SeaFIC note that the Snapper Working Group was not comfortable with putting a large amount of weight on highly uncertain long-term (20-year) projections and consider that five-year probabilities are far more meaningful.
- 62 **Pagrus Auratus** submits that, in the absence of a sustainability concern combined with evidence of stock rebuild, your focus would be better directed to removing the barriers to credible fisheries management for SNA 8.

MFish discussion

- 63 As noted previously, the current biomass of the SNA 8 stock is approximately 50% of B_{MSY} . In setting a TAC, s 13 (2) (a) requires you to achieve over time a stock that is at, or above, a level that can produce the maximum sustainable yield for the stock, after having regard for the interdependence of stocks. When stocks are below the level that can support the target of at, or above, B_{MSY} , s 13 (2) (b) requires you to rebuild the stock. The generic section of this paper outlines MFish policy on rebuilding stocks to B_{MSY} .
- 64 Based on stock assessment information that has been accepted by the Snapper Working Group, MFish considers the current status of the SNA 8 stock is at a level where s 13 requires you to rebuild the stock. There is no clear direction on rebuild timeframes provided in the Act. In setting a rebuild rate, s 13 (2)(b) states the period should be appropriate to the stock with regard to its biological characteristics and any environmental conditions affecting it. In addition, s 13 (3) states that in setting a rebuild rate you shall have regard to such social, cultural and economic factors as you consider relevant.
- 65 Snapper is an important commercial species, and a highly valued recreational species (possibly the most important recreational species on the west coast of the North Island). In the IPP, MFish said there is benefit in rebuilding the stock with a higher degree of certainty and over a shorter timeframe than is likely under the current TAC.
- 66 As discussed in the generic section of this FAP, you are required to consider the reasonable foreseeable needs of current and future generations in determining the appropriate timeframe. MFish considers a reasonable consideration would mean that stocks should reach B_{MSY} within 20-25 years, based on the concept of inter-generational equity, unless their biological characteristics and environmental factors would prevent such a rebuild timeframe.
- 67 MFish considers the generation span of 25 years is the maximum reasonable rebuild timeframe for the SNA 8 fishery. Although SNA 8 may be slowly rebuilding and 25 years is the maximum timeframe that is reasonable for intergenerational equity reasons, there are several issues to consider that suggests a more rapid rebuild is appropriate:
- a) SNA 8 is an important shared fishery, valued highly by commercial, customary and recreational fishers;
 - b) There is likely to be benefits to all users in rebuilding the stock to B_{MSY} , including increases in catch rates and fish size, improved non-commercial satisfaction, and a reduced risk of sustainability concerns;

- c) The stock is significantly below B_{MSY} ; and
 - d) SNA 8 has been below B_{MSY} for a long time and a previous Minister of Fisheries originally set a rebuild strategy that began in 1998.
- 68 Based on these factors, MFish consider that a rebuild rate of 20 years may be more appropriate. However, your discretion is wide and different rebuild rates will influence the TAC accordingly. The socio-economic impacts of different TAC options are outlined in the TAC section below.
- 69 With respect to alternative rebuild rates, you must assess the socio-economic effects on all fishing sectors, and consider how value from the fishery can be maximized given the alternative views. Industry claims that long-term rebuild rates are a preferred option. This is because of the short-term losses that Industry says they will experience as a consequence of the TACC reductions that are associated with shorter rebuild timeframes. On the other hand, the recreational sector generally prefers a shorter rebuild timeframe, because of what they see as the immediate benefits that they will gain from a larger stock size.
- 70 Te Ohu, Egmont Seafoods and SeaFIC note that the Snapper Working Group was not comfortable with putting much weight on highly uncertain long-term projections. MFish agrees the Snapper Working Group felt long-term projections could be uncertain. In the IPP, MFish acknowledged the Working Group's position in stating that "*Although the projections were run out until 2025 they are not likely to be very reliable over such a long time period*". However, the Snapper Working Group did agree to run the projections and they were accepted in the final 2005 Snapper Plenary. The IPP presented both the short-term and long-term projections, and considered the results of both equally. The confidence levels of all rebuild options are important and the probability of achieving a rebuild in both the short and long-term need to be considered.
- 71 MFish did recognise in the IPP that you could decide to maintain the current TAC, as the indications that the stock is rebuilding slowly could be seen as meeting the obligation to rebuild stocks that are below B_{MSY} . However, the IPP stated the rate of rebuild was slow and there was benefit in rebuilding the stock at a faster rate with a higher probability of success. MFish maintains this view, but has provided you with the '*status quo*' option for consideration. As highlighted in Table 2, there is a 64% chance that the biomass of SNA 8 will be higher in 2010 under the current TAC.

Total Allowable Catch Options

Submissions

- 72 **NZRFC**, the **Kaipara study group, option 4, Forest & Bird** and **ECO** support a reduction of the TAC from 2 060 tonnes to 1 510 tonnes.
- 73 **Pete Saunders** supports a reduction in the TAC from 2 060 tonnes to 1 922 tonnes.
- 74 **Sealord** prefers a reduction in the TACC from 2 060 tonnes to 1 922 tonnes, or would support a *status quo* option if it were to become an option.

- 75 **SeaFIC, NZFCF, Te Ohu, Pagrus Auratus, Ngati Ruanui, New Plymouth Sportfishing & Underwater Club, the Taranaki FLC, the Taranaki RFA, Michael Healy, Kayla, Egmont Seafoods, Snapper 8 and Sanford** reject all options included in the IPP and object to a decrease in the TAC. It was submitted that catches are high and there is no need to reduce the TAC, and also that more information is required before changes are made.
- 76 SeaFIC submits the *status quo* TAC and allowances should be maintained but effectively monitored and managed for all sectors. They consider that current scientific advice has arisen from the science assessment process with no explicit management input. They note the SNA 8 fishery is complex, and of immense commercial value and non-commercial interest. SeaFIC is of the opinion that there should not be a hasty, and potentially commercially catastrophic, decision.
- 77 SeaFIC submits the presentation of the projections in the IPP is misleading and provides flawed, biased and leading advice to you. They believe there is a trade-off between the level of reduction chosen for the commercial fishery and the degree of regulation required for the recreational fishery to achieve the rebuilding target. Larger reductions to the commercial fishery require substantially less regulation of the recreational fishery and *vice-versa*. It is SeaFIC's opinion that this trade-off has not been adequately explored by the IPP, including any associated economic implications.
- 78 SeaFIC also believes that inadequate attention has been paid to exploring alternative approaches to rebuilding. There are possibilities that an opportunistic management approach could be adopted, especially given the lack of immediate sustainability concerns provided by the evidence of the previous 25 years and reinforced by the projections which in all cases suggest at least slow rebuilding under the current TAC / TACC.
- 79 Pagrus Auratus, **Lady Marcella**, Egmont Seafoods, Snapper 8 and Sanford are concerned the *status quo* option was not presented in the IPP. SeaFIC submits that given the *status quo* option satisfies s13 (2)(b) (moving a stock below B_{MSY} towards B_{MSY}), and that the *status quo* option has the least economic impact on the commercial sector, you should consider the *status quo* option. At the very least, providing the *status quo* as an option would give you a reference point on the continuum of options, which would meet the statutory imperative of rebuilding the stock.
- 80 Pagrus Auratus considers that the absence of a management plan or fisheries plan (and agreed management objective for SNA 8) is reason to maintain the *status quo* for SNA 8.

MFish discussion

- 81 MFish notes that most non-commercial fishers and environment groups support TAC Option 3; most commercial fishers and some non-commercial fishers reject all options and request that you maintain the *status quo*.
- 82 MFish disagrees with SeaFIC's view that the presentation of the projections in the IPP were flawed or biased; MFish did not provide you with leading advice.

MFish reported the short-term and long-term probabilities of the SNA 8 stock rebuilding, and was very clear about the expected outcomes of the different options.

- 83 MFish also disagrees with SeaFIC's claim that there is a trade-off between larger reductions to the commercial fishery and less regulation of the recreational fishery and vice versa. MFish highlighted that a detailed analysis of the effect of bag limit reductions is required, supported by improved estimates of recreational catches. When the analysis and improved estimates become available, it will be necessary to review the recreational allowance and bag limits for the stock.
- 84 The IPP noted that under the current TAC there is a 48-64% (subsequently revised in this FAP) probability that biomass of the stock will increase over the next five years; the biomass will not increase to B_{MSY} within the next 20 years. The IPP also noted that you could decide to maintain the current TAC, as the stock is rebuilding slowly which meets the obligation to rebuild of stocks that are below B_{MSY} . However, the *status quo* was not presented as an option in the IPP because MFish considers that SNA 8 is an important fishery to both recreational and commercial fishers. Accordingly, there is benefit in rebuilding the stock at a faster rate and with greater certainty than is likely under the current TAC.
- 85 MFish acknowledge there is a cost associated with reducing the TAC and that your discretion is wide in setting a rebuild rate. Given the concern that stakeholders have over the absence of a *status quo* option, MFish has included the *status quo*. The discussion of the TAC options has also been revised following changes to the stock assessment projections used. You should note however, that the previous concerns about the *status quo* raised in the IPP are still relevant.

Alternatives to the TAC options proposed

- 86 SeaFIC believes alternative approaches to rebuilding should be explored. One alternative would be to phase a TAC reduction over time. The benefit of a phased reduction option is that it spreads the socio-economic impact of the total reduction over a period that allows stakeholders opportunity to adjust and plan to mitigate impacts as best as they can.
- 87 Other alternative approaches to rebuilding the stock could include a range of measures under s 11, such as changes in the methods used to take snapper, to the area or seasons snapper are fished in, or to the size of snapper taken. You could choose an acceptable rebuild rate and then investigate possible sustainability measures that could enhance this rate.
- 88 Further, as the *status quo* does meet your obligations to rebuild the stock, you could accept the current rebuild timeframe but look to other management measures in the near future to increase that rebuild rate. However, none of these alternative approaches has been explored and MFish does not know how any approach could affect the rate of rebuild.
- 89 Nevertheless, the TAC is set under s 13(1) and is the primary measure ensuring sustainability of stocks. Under s 13 (2) you are required to establish a TAC that meets the obligations to rebuild, rather than relying on some other sustainability measure

authorised under the Act. Alternative approaches can be explored following the commitment to meet the obligations of the Act.

Revised total allowable catch options

90 MFish has revised the total allowable catch options presented in the IPP by adding a *status quo* option for your consideration. Submitters also expressed concern about the stock assessment projections used as the basis for discussion of the options. As a result, MFish has provided only the 300 tonne projection for you to consider (Table 4) and has revised the discussion of the options accordingly. The 600 tonne projection has been provided for your consideration in a separate section on “Alternative Projections”.

Table 4. Short-term and long-term projections for the SNA 8 stock under different catch reduction options. The projections are based on the model runs using a recreational catch estimate of 300 tonnes, and are based on a reduction in TACC and other sources of mortality only.

TAC Option	Probability that biomass in 2010 is greater than biomass in 2005 (%)	Estimated year to reach B_{MSY}	Probability that biomass at 2025 is greater than B_{MSY} (%)
Option 1 – 2 060 tonnes <i>Status Quo</i>	64	>2 025	47
Option 2 – 1 922 tonnes	74	2 021	65
Option 3 – 1 785 tonnes	84	2 018	81
Option 4 – 1 510 tonnes	94	2 014	97

TAC Option One

91 This option involves retaining the *status quo* with the TAC left at the current 2 060 tonnes.

92 Under this option, the probability of an increase in biomass in the short-term is 64%. The stock is not estimated to reach B_{MSY} before 2025 and the probability of the biomass exceeding B_{MSY} by 2025 is 47%.

93 The benefit of this option is that the stock will slowly rebuild and it will have no economic impact.

94 However, there are risks to rebuilding the stock with this option. While Industry submit there are no immediate sustainability concerns for the SNA 8, the short-term and long-term projections do not show that the stock is moving towards B_{MSY} with any certainty.

95 There may also be significant social costs involved in this option for some sectors. Non-commercial fishers have indicated that the SNA 8 fishery is of considerable social and cultural value. Snapper are probably the most highly sought after recreational species on the west coast of the North Island. Recreational representative

groups have expressed concern at reduced catch rates in the fishery and have expressed a desire that catch rates and opportunities for catching snapper are improved as rapidly as possible. They believe they have been disadvantaged by the low stock biomass of the fishery.

- 96 A more detailed description of the social and economic impacts of this and the following three TAC reduction options are contained in the allowances section below.

TAC Option Two

- 97 This option involves a reduction of the TAC from 2 060 to 1 922 tonnes, which is a reduction of 138 tonnes.
- 98 Under this option, the probability of an increase in biomass in the short-term is 74%. It is projected that the TAC reduction should result in the stock rebuilding to B_{MSY} by 2021, although the probability of the biomass in 2025 exceeding B_{MSY} is 65%.
- 99 As stated in the IPP, the intent of this option is to move the stock towards the target level at a faster rate and with greater certainty than under the current TAC. The benefit of this approach is that it minimises any adverse social and economic impacts in the short-term while still allowing the stock to rebuild.
- 100 The risks of this option is that the TAC reduction will be slow to achieve the social and economic benefits of managing a stock at B_{MSY} ; and a reduction in commercial catches are likely to have significant direct and indirect costs.

TAC Option Three

- 101 This option involves a reduction from 2 060 to 1 785 tonnes, which is a reduction of 275 tonnes.
- 102 Under this option, the probability of an increase in the short-term is 84%. It is projected that a TAC reduction should result in the stock rebuilding to B_{MSY} by 2018, and the probability of the biomass in 2025 exceeding B_{MSY} is 81%.
- 103 The benefits of this option is that the stock is likely to rebuild more quickly and with more certainty than under Options One and Two; and a faster and more certain rebuild will allow the benefits of managing at B_{MSY} to be obtained more quickly.
- 104 However, the economic costs of this option will be much higher than in the lower TAC reduction in Option Two and the resulting downstream effects on associated industries is likely to be significant.

TAC Option Four

- 105 This option involves a reduction from 2 060 to 1 510 tonnes, which is a reduction of 550 tonnes.
- 106 Under this option, the probability of an increase in the short-term is 94%. It is projected that a TAC reduction should result in the stock rebuilding to B_{MSY} by 2014, and the probability of the biomass in 2025 exceeding B_{MSY} is 97%.

- 107 The benefit of this option is that it is the most likely to achieve a rebuild to B_{MSY} , and in the shortest timeframe. The associated benefits of managing the stock at B_{MSY} will be achieved relatively quickly.
- 108 There are significant social and economic risks associated with this option. It will have immediate multi-million dollar impacts on the fishing industry. There will also be significant downstream impacts on associated industries. Fishers that catch SNA 8 as bycatch in some regions may not be able to continue fishing.

Alternative projections

- 109 The Snapper Working Group undertook a suite of projections. These projections were presented in the IPP and included both a higher recreational catch estimate of 600 tonnes, and two different recreational catch scenarios –capped and uncapped catches. The IPP discussed all of these projections together. Some submitters took this to mean that MFish accepted these alternative scenarios (such as a recreational catch higher than the current allowance, and an unconstrained recreational catch). MFish incorporated these projections as they had been reported in the 2005 Snapper Plenary. They were used to highlight risks associated with the rebuild rate. The response from submitters indicates that this was not clear in the IPP discussion.
- 110 As a result, the alternative projections are not included in the revised discussion of the rate and speed of rebuild for each of the TAC options. The Snapper Working Group considered that 600 tonnes was a plausible upper bound recreational catch estimate and agreed to the results being presented in the 2005 Snapper Plenary. However, as discussed previously, MFish considers that the projection is best used as a sensitivity analysis describing the risk to the rebuild rate should recreational catches actually be higher than anticipated. MFish considers that the 600 tonne projection is still relevant in the context of risks to the projected rebuild rate and has provided the results for your consideration below (Table 5). Any reference to the ‘uncapped’ recreational catch scenario has been removed, as MFish does not recommend the recreational catch increase without constraint.
- 111 Table 5 shows that if average recreational catches are as high as 600 tonnes, far higher than expected, slower rebuild timeframes would result for all options. In general, the probability of SNA 8 biomass increasing by 2010 is reduced by up to 10% for all options. The probability of biomass exceeding B_{MSY} by 2025 is similarly reduced, although the difference is less pronounced for Option Four, the highest TAC decrease proposed.

Table 5. Short-term and long-term projections for the SNA 8 stock under different catch reduction options. The projections are based on the model runs using a recreational catch estimate of 600 tonnes, and are based on a reduction in TACC and other sources of mortality only.

TAC Option	Probability that biomass in 2010 is greater than biomass in 2005 (%)	Estimated year to reach B _{MSY}	Probability that biomass at 2025 is greater than B _{MSY} (%)
Option 1 – 2060 tonnes <i>Status quo</i>	53	>2025	33
Option 2 – 1922 tonnes	64	>2025	43
Option 3 – 1785 tonnes	73	2020	68
Option 4 – 1510 tonnes	88	2016	92

Setting Allowances

Proportional vs. non-proportional approach

Submissions

- 112 NZRFC, the **Kaipara study group, option 4**, Forest & Bird and ECO reject the proportional catch reduction approach in setting catch allowances.
- 113 The NZRFC supports the non-proportional approach, based on past management action in the fishery and the importance of the fishery to recreational fishers. Recreational fishers consider that they have “shared in the pain” of the fishery with a number of regulatory controls being put in place over the years. In these fishers’ view, while the controls served to reduce recreational catches, commercial fishers continued to exceed their quota allocation, thus negating any positive effect associated with the recreational reductions.
- 114 The NZRFC considers any discussion on a proposition that it may be reasonable for recreational fishers to share some of the “pain” from a reduction, is not acceptable. They note that commercial fishers have not been constrained within the TACC. The Councils’ position is that until MFish sets appropriate measures on the commercial sector and apply appropriate enforcement, recreational fishers refuse to accept or offer any further concessions to rebuild SNA 8.
- 115 The NZRFC notes that recreational fishers were not given the opportunity to establish an accurately measured share in the fishery before commercial fishers reduced the stocks to around 12% of virgin biomass.
- 116 **option4** has grave concerns regarding all of the proportional options as, in its view, these options are based on unfair initial allocations of the proportions of the TAC. option4 says that such allocations place the recreational allowance at risk of erosion by commercial interests who have not been constrained to their TACC. option4

considers that excessive commercial fishing has been allowed both to deplete the SNA8 fishery, and maintain this depletion for so long that it is highly likely that a whole generation of recreational fishers will have been denied access to a healthy fishery.

- 117 option4 submits that the excessive commercial fishing in this important shared fishery has reduced recreational catch and continues to impact on the availability of snapper to recreational and customary fishers. In its view, you need to take into account how long recreational fishers have suffered due to the low stock size. It wants you to act decisively to rebuild this fishery in the shortest timeframe proposed, while properly “allowing for” recreational interests and without further adversely affecting recreational catch or interests in this fishery.
- 118 option4 notes that recreational fishers have had several management controls placed on the SNA 8 recreational fishery in the last twenty years. These controls have had immediate and long-term impacts on recreational fishers. option4 presents information that suggests the total tonnage of snapper conserved by recreational fishers as a result of these controls are in the order of 800-1 600 tonnes. This does not include benefits gained through things like additional spawning biomass. It says that these conservation actions were rendered futile by commercial deeming, dumping and Quota Appeal Authority issued commercial quota.
- 119 **Muriwai SFC** notes the concept of recreational fishers participating in a proportional allocation management regime was rejected in the “Soundings” process of recent years. The club considers that the first impact of proportional allocations is through the fall in biomass resulting in recreation fishers having fewer fish to catch; and the second when the already reduced recreational catch is further reduced in proportion to the cut applied to the commercial fishers.
- 120 Muriwai SFC notes there has been no effort by commercial fishers to fish within the rules. The club sees this as a demonstration of ineffective management of the commercial take. They submit that unlike the commercial sector, the recreational sector has regularly contributed to the rebuild and conservation of this fishery. The increased size limit has impacted significantly on the catches of recreational fishers fishing within the North Island west coast harbours.
- 121 Forest & Bird and ECO do not support a proportional cut in other allowances for recreational and customary fishing, or other sources of mortality. This is due to a number of factors. In their view:
- a) The decline in the stock size can be attributed to the high level of commercial catches over the last 40-50 years;
 - b) The fishery has an important customary, subsistence and recreational component that is likely to be more valuable than the commercial fishery; and
 - c) The non-commercial fishery is small when compared to the commercial fishery.
- 122 **Egmont Seafoods** considers that to propose 3 options that include a non-proportional reduction for recreational fishers in the TAC is unfair & unjust. To reduce or restrain the commercial catch without accurate assessment or management of the recreational catch is not consistent with good fisheries management.

- 123 **Snapper 8** and **Sanford** strongly oppose use of any management strategy in SNA 8 that includes non-proportional reductions. They submit that recreational catches have been unconstrained and management tools ineffective. Snapper 8 and Sanford submit that the commercial catch has been effectively restrained within the TACC allocation. In their view, any non-proportional reduction amounts to reallocation from the commercial to the recreational sector.
- 124 **NZFCF** submit that at no time should the commercial sector be required to endure reductions to TACCs in the face of confirmed uncertainty about recreational catch. They note the IPP refers to the SNA8 being a “shared fishery” and that with this comes “shared responsibility”.
- 125 **Pagrus Auratus** does not endorse the utility-based approach to allocation. The company considers that the Ministry does not have credible information on which to base an assessment of the relative impacts and value of changes in the SNA 8 allocations to the recreational and the commercial sectors. It says that the numbers provided are biased and misleading. Pagrus Auratus recommends that all references to a utility-based approach to utilisation be removed from the final advice to you. Alternatively, if the references are retained, MFish must inform you of the consequences and risks to economic efficiency, and Crown liability for compensation arising from preferential allocation.
- 126 **SeaFIC** does not support the utility-based approach to allocation. It considers that such an approach undermines commercial property rights and incentives for resource stewardship that the QMS was designed to provide. Like Pagrus Auratus, SeaFIC does not think that the Ministry has credible information on which to base an assessment of the relative impacts and value of changes in the SNA8 allocations to the recreational and commercial sectors. It also believes that the numbers provided are biased and misleading.
- 127 SeaFIC refers to a review of the SACES valuation of recreational catch that it says identifies a number of serious flaws in the SACES study. In its view, these flaws undermine the credibility of the study findings. Furthermore, SeaFIC considers that the study is becoming increasingly outdated.
- 128 SeaFIC submits that they do not understand how, on the one hand, it is possible to argue that recreational catches are 600 tonnes (against an allowance of 360 tonnes) and, on the other, that recreational fishers are doing their bit/contributing to rebuild. SeaFIC also considers that it is also clear from the projections that if the recreational catch is indeed 600 tonnes, then this is the likely major contributor to the lack of rebuild.
- 129 SeaFIC does not think that either approach can be regarded as very “fair”. There is no way of knowing if “past management action[s]” in the recreational fishery have been effective. It regards this as one of the problems – that non-commercial fisheries are indirectly managed, unmonitored and thus there is no accountability of the effects of any management actions. SeaFIC says that increasing the proportion of poorly managed and unknown catch immediately by adopting a “non-proportional” approach or alternatively gradually, but to a very large degree, under the proportional approach, cannot be considered an effective management approach that meets your obligations under the Fisheries Act.

- 130 SeaFIC notes that if a non-proportional approach were taken, the recreational proportion of the catch would in fact grow dramatically over the next five years unless it is capped by active management. SeaFIC does not think that MFish makes this clear to you. It also notes that the modelling did not include a “shared pain” option, except to the extent that the “Frec” projections assume a reduced initial recreational allowance and catches.
- 131 SeaFIC would like to see proportional options considered, but with detailed and credible options for managing and monitoring the recreational catch.

MFish discussion

- 132 In their submissions, stakeholders indicate there is no consensus on whether you should use a proportional (claims-based) or non-proportional (utility-based) approach in setting catch limits and allowances. All non-commercial fishers and environmental groups that commented on the issue rejected a proportional approach. All commercial fishers that commented on the issue rejected a non-proportional approach. Both approaches are alternately labelled ‘unfair’ and ‘unjust’.
- 133 As mentioned in the general issues section of this FAP, MFish acknowledge that the Fisheries Act gives you discretion to determine the nature and extent of any priority between recreational and commercial interests on a case-by-case basis. MFish notes that the Fisheries Act assigns no priority between commercial and recreational interests. Accordingly, the Act permits preference to be shown to one sector to the disadvantage of another; for example by providing for higher allowance for recreational interests in proportion to the commercial allocation
- 134 MFish has a policy preference for a proportional approach to altering allowances up or down when a TAC is adjusted. That preference is founded on factors such as:
- a) Improved certainty for stakeholders about how increases and decreases to the TAC will be addressed;
 - b) Providing a qualification of competing demands as the ability to accurately quantify the relative value of a resource to each sector is problematic;
 - c) It would turn the focus of sectors away from lobbying Government to improve their share of the TAC, and instead look towards collective action that they could take to provide for the outcomes they wish to achieve; and
 - d) A degree of equity between sectors is established and all sectors are legitimate users of the resource.
- 135 However, a proportional approach does not fetter your discretion to explicitly recognise the competing demands on a resource. The proportional approach is the starting point, against which MFish provides you with relevant social, cultural and economic information to inform your decision on whether a deviation from this position is warranted or preferable. This consideration of individual circumstances may lead you to decide to depart from a proportional approach. In doing so, those decisions can be made transparently.

- 136 These factors, and others supporting proportional allocation, are described in more detail in the generic section of this FAP. All are particularly relevant to the SNA 8 fishery.
- 137 However, stakeholders have expressed the following concerns regarding proportional allocation:
- a) Rigidity: the “share” allocated to a sector becomes fixed with limited ability to respond to new information or change in demand between sectors. An important consideration is the time at which the proportions are fixed. MFish recognises the merits of the point raised by the recreational sector that if the proportion is determined when the stock is depleted, the recreational catch may be lower than when the biomass is at the optimal level.
 - b) Information: A proportional approach is based on an assumption that there is accurate information on the level of catch taken by each sector. As identified in the SNA 1 case, there is not a sufficient degree of precision in this information as to yet to operate a strict proportionality framework. The determining factor in respect of implementing such an approach is likely to be the practical ability to monitor and enforce the arrangement. For a proportional arrangement to work, ideally there needs to be agreement amongst all stakeholders about the approach used to monitor catch, and the steps to be adopted to restrain catch within the allocated share.
 - c) Compensation: In principle, as a matter of equity, all fishing sectors should have the right to seek compensation for any departure from a proportional approach. A reallocation of catch between sectors does affect the availability of the resource to the respective sectors and raises issues of compensation for the sectors whose catch proportion is reduced from the *status quo*.
- 138 Other factors that affect the proportional approach are discussed in the generic section of this FAP and include:
- a) Overfishing: “Shared pain” may create a perverse incentive for a sector to over fish beyond the share of the stock allocated to that sector.
 - b) Optimise use: proportional allocation may not optimise use of a resource or provide for the most efficient use of the resource.
 - c) Conservation: each sector is able to make an explicit choice of how they wish to utilise the portion of the fishery allocated to that sector.
 - d) Commercial right: a proportional approach in effect means that the individual transferable quota right is converted from a share in the ownership of the TACC into a share of the TAC.
- 139 MFish acknowledges that no explicit process has been undertaken to set the proportions of the SNA 8 TAC allocated to each sector. The allowances allocated to date reflect current catch levels. To translate the current allowances into a proportional share would create the proportions by default rather than as a result of an explicit process. MFish has not formally consulted on the adoption of a proportional approach. MFish accepts that a formal process should be established were proportional shares to be fixed in the SNA 8 stock.

- 140 It is evident from the submissions received on the IPP that recreational fishers do not consider the current recreational allowance of SNA 8 to be fair or reasonable. MFish accepts that they have not been given an opportunity to establish an agreed share in the fishery. Further, they consider that their share has been established in a depleted fishery and that they would have been catching significantly more had the stock not been so depleted.
- 141 Conversely, commercial fishers have a preference for a proportional allocation approach. They consider that recreational catches are not constrained and management tools have been ineffective. Because of this, in their view, apportioning the whole TAC reduction to the TACC would be penalising the commercial sector and rewarding the recreational sector for “bad management.” Commercial fishers are also concerned about the effect of a non-proportional allocation on their property right.
- 142 MFish does not agree with the commercial sector comments that the recreational sector has been unconstrained, that management tools have been ineffective and that this has been compounded by poor recreational catch estimates. With regard to management, there have been a variety of bag limit reductions, size limit increases, method restrictions and area closures imposed on the recreational sector since the stock was introduced into the QMS.
- 143 While MFish agrees that more certain recreational catch estimates are required for SNA 8, MFish does not consider that the uncertain recreational estimates that have been used to date have led to “bad management” of the SNA 8 fishery.
- 144 MFish also disagrees with the claims from recreational interests that there has been no restraint placed on commercial fishers to fish within the rules, and that such lack of restraint demonstrates ineffective management of commercial take. There is ongoing compliance monitoring of all aspects of commercial take to constrain commercial catches within both the TACC and within individual fishers’ entitlements.
- 145 In addition, for every kilogram of fish taken above an annual catch entitlement, a deemed value must be paid. Differential deemed values also apply to SNA 8. That is, the higher catches are above a fisher’s ACE, the higher the deemed value rate that applies. For example, if a fisher catches twice as much as their ACE, the deemed value rate is also doubled.
- 146 MFish recognises that the TACC in SNA 8 has been overcaught in recent years and that the cumulative effect of this overcatch is significant. The incentive to land fish against annual catch entitlement is obviously not working and as a result, MFish is reviewing the deemed value in this paper.
- 147 SeaFIC notes that if a non-proportional approach were taken, the recreational proportion of the catch could grow dramatically unless capped. MFish notes that this would be equally true should a proportional approach be taken. MFish does not intend to allow the recreational catch to increase ‘dramatically’ and advises that the purpose of reporting the ‘uncapped’ scenario was to highlight management risks, not management intentions.

148 MFish provided you with information to support both proportional and non-proportional approaches to allocating a revised TAC in the IPP. Stakeholders provided no clear direction on the most reasonable approach to take during consultation. Both approaches have their own set of benefits and risks that MFish has outlined for your consideration.

Compensation

Submissions

149 **Lady Marcella** submits that quota holdings are required to make their operations viable. They say that a decrease in quota taken from owners without compensation is unjust and seems like theft.

150 **Murray Watson** submits he has made a substantial investment in the industry and that the current proposals are unfair. Mr Watson submits that monetary compensation be paid out for the reduction in his most valued species.

151 **Te Ohu** is concerned about the prospect of there being a reallocation of the TACC in the future to accommodate increases in non-commercial catches. In the event that this occurs, Te Ohu has an expectation that there will be full compensation.

152 **Snapper 8** and **Sanford** consider that no protection is provided against a compensation claim under s308 of the FA96, other than at the time when a species is initially introduced into the QMS. They note that any compensation claim would still need to be made out to the satisfaction of the Courts if legal action ensued.

153 Snapper 8 and Sanford submit that should you make a non-proportional reduction decision, both companies will expect compensation for the removal of their shareholders' property rights. In their view, a non-proportional reduction will result in the expropriation of their property by having these property rights being transferred to the Crown. The companies point to the absence of any clear legislative requirement within the FA96 not to compensate for actions like these.

154 Sanford notes they hold 98.85% of the 28N rights for the SNA 8 stock (922.8 tonnes). Sanford submits they took the 28N rights, and not compensation with the absolute understanding that any rebuild in the SNA 8 fishery as a result of commercial cuts would be allocated to Sanford as a SNA 8 28N rights holder. Sanford did not forego compensation on the expectation that all or any rebuild in the fishery would be allocated to the non-commercial fishers. Sanford submits that because the 28N rights are protected by statute, these rights should have first priority (over non-commercial) for allocation under any fishery rebuild.

MFish discussion

155 The Fisheries Act provides no explicit protection for claims of compensation, should you decide on a non-proportional approach to allocating SNA 8 allowances. This is because s 21 (setting allowances) is not covered by s 308 (protection for the Crown from compensation following a variation in the TAC for sustainability reasons). Therefore, compensation may be warranted for the portion of the reduction applied to the commercial sector that would have, under a proportional scenario, been applied to

the recreational sector. Compensation would not be warranted for the whole reduction in the non-proportional scenario, as the overall purpose of the TAC reduction is to ensure the sustainability of the SNA 8 stock.

156 There is no simple method to assess what compensation might be payable. The amount would represent the diminished value of the quota asset. To give an order of magnitude indicative figure, quota value based on recorded trades could be used (\$42,550 per tonne, which is the 90th percentile for transactions from 1 October 2001, although this is higher than recent transactions). MFish notes that SeaFIC considers that this quota price will undervalue SNA 8 after any of the options involving decreases in the TACC. MFish further notes that these figures do not necessarily represent the value of the asset loss.

Table 6. Quota value reduction for different TAC options under different allowance approaches.

	Allowance Approach	TACC (tonnes)	Quota Value (\$ millions)
Option 1. No TAC reduction	N/A	1 500	0
Option 2. TAC reduction of 138 tonnes	Proportional	1 398	0
	Non-proportional	1 375	1.1
Option 3. TAC reduction of 275 tonnes	Proportional	1 295	0
	Non-proportional	1 250	2.2
Option 4. TAC reduction of 550 tonnes	Proportional	1 090	0
	Non-proportional	1 000	5.3

157 MFish recognises Sanford's 28N rights. However, the rights apply to a TACC increase. Only TACC decreases have been proposed in this instance.

Economic factors

Submissions

158 **Ngati Ruanui** submits the economic effect of the TAC reductions is uncertain and request more information.

159 **Murray Watson** notes that since SNA 8 was introduced into the QMS, several cuts have been made to the quota. Mr Watson submits that MFish is slowly removing his financial asset, which was granted in perpetuity, and that regulation 28N needs to be reviewed before he has no workable equity left.

160 **Snapper 8** and **Sanford** reject MFish's IPP statement that economic effects are not fully known and that relative quota changes are unknown.

161 **Pagrus Auratus** believes there is significant room for improvement in the economic analysis presented by the Ministry of Fisheries in the Snapper 8 IPP. It notes that the Court of Appeal has stated that a careful cost-benefit analysis needs to be undertaken to support a decision to reduce the TACC, as well as in relation to the range of options available to you in moving a fishery towards B_{MSY} . Further, where a major economic

impact is considered necessary, the rationale for that decision should be clearly transparent, and that those affected ought to be able to establish that all other reasonable possibilities were analysed and that the decision adopted was the preferable option.

- 162 **SeaFIC** is of the strong opinion with respect to proposed changes in the TACC, the requirements to perform a careful cost-benefit analysis of options has not been fulfilled. It considers that there has been no careful cost-benefit analysis of the different policy options, and no reasonable range of options presented. The Council says that analysis of potential losses in earnings to the commercial sector is insufficient and underestimates and misrepresents potential losses to the commercial sector for a variety of reasons. The council considers that because of these failings, the basis for a decision on TACC changes is not transparent.
- 163 **Te Ohu** considers the economic analysis is grossly understated and misleading. No attempt has been made to value the impact on both related services such as processing and transport, and on coastal communities that are dependant on the inshore fishing industry. There has been no analysis of the economic impacts on related fisheries in SNA 8 that take snapper as a bycatch. Te Ohu says that a reduction in the availability of SNA 8 ACE will result in significant financial implications on these associated fisheries, including forcing operators out of the fishery.

Information provided by submitters

- 164 **Kayla, Lady Marcella and Egmont Seafoods** submit that fishers in the Taranaki region do not target snapper, but catch them as bycatch. At times fishers are forced to shift their fishing ranges and areas because there is too much snapper and they are unable to source ACE to cover the catch. As a result they either pay deemed values, or stop fishing. They consider that decreasing the ACE availability as well as increasing the deemed value for SNA 8 will severely impact on their ability to fish.
- 165 **Egmont Seafoods** submits that one company holds the majority of quota shares and available ACE (60.8%) with the 4 largest quota holders owning (89.4%). The largest quota owner is vertically integrated and targets SNA 8, with the majority of their fishing activity for SNA 8 and trevally (TRE 7) concentrated north of the Manukau Harbour. The available ACE is therefore not spread throughout the participants in the fishery. Likewise the exploitation of SNA 8 as a target species does not extend over the full area of SNA 8 fishery.
- 166 Egmont Seafoods notes that, in the Taranaki fishery, the current catch by local vessels of approx 60,000kg (2005) of snapper is not targeted. A TACC reduction and or deemed value increase will drive up the price of ACE, when most of the fishers are reliant on leasing ACE in on an annual basis. Local (Taranaki region) fishers hold approximately 20,000kg of SNA 8 quota, of the approximate total of 60,000kg of SNA 8 landed. If the ACE rental were to increase by \$1.00 then this would add an additional cost of \$40,000 to the local fishers, providing ACE can be obtained to cover catch. If ACE is not available, which is likely to happen if the TACC is reduced, then fishers will be forced to deem the catch they cannot cover with ACE.

- 167 Egmont Seafoods consider that if the deemed value is increased, then fishers in the Taranaki region may face increased costs by way of deemed values of approximately \$400 000 in excess of the current port price paid for the fish. The fishers could not cover this increased cost in the current economic environment with increasing fuel costs, increasing compliance and other operating costs. This would drive most of the fisherman in the Taranaki region out of the industry and severely affect the viability of Egmont Seafoods Ltd. Egmont Seafoods Ltd is a smaller operator that is reliant on local fishers and losing even 2 vessels out of the industry would affect its ability to continue to operate.
- 168 **Snapper 8** and **Sanford** consider there is very good evidence to support the fact that a TACC reduction will result in a reduction in the quota share price and that the economic recovery for the share price will be slow. They reject the use of port price to determine annual earnings, as they believe that such prices are not a true reflection of the annual earnings from snapper.
- 169 Snapper 8 and Sanford submit the IPP calculations fail to consider the cost of reducing the SNA 8 TACC in terms of effects on catches of bycatch species and the associated economic effects. The SNA 8 trawl fishery is a mixed fishery and every one of these species has an economic value and contributes to the value of the SNA 8 catch.
- 170 Snapper 8 and Sanford provide a table that assesses the potential loss of economic return for the options proposed in the IPP (Table 7). Table 5 incorporates an actual sale price for both snapper and the associated by catch species caught. This differs from the table provided in the IPP as it uses actual sales prices from their integrated business and more accurately reflects the foregone catch earnings, which includes valuable bycatch species. Snapper 8 and Sanford submit that the foregone earnings of a tonne of snapper, including the mixed by-catch associated with each tonne equates to \$7,622.39 per tonne. These foregone earnings are significantly higher than those outlined in the IPP.

Table 7. Foregone earnings of TACC reductions, provided by Sanford and Snapper 8

TACC Reduction (t)	Foregone annual catch earning (\$) SNA 8 only	Associated bycatch (\$)	Total Catch Foregone earnings (\$)	SNA 8 company 87% of fishery – total annual foregone earnings	Sanford 60.8% of fishery – total annual foregone earnings
102	561 000.00	216 483.00	777 483.98	676 411.07	466 490.39
125	687 500.00	265 299.00	952 799.00	828 935.13	571 679.40
205	1 127 500.00	435 090.36	1 562 590.36	1 359 453.61	937 554.22
250	1 375 000.00	530 598.00	1 905 598.00	1 657 870.26	1 143 358.80
410	2 255 000.00	870 180.72	3 125 180.72	2 718 907.23	1 875 108.43
500	2 750 000.00	1 061 196.00	3 811 196.00	3 315 740.52	2 286 717.60

- 171 Snapper 8 and Sanford note the IPP provides a snapper quota trade price of \$42 550 per tonne. They believe this is an underestimate, as MFish did not take into account the value of the mixed fishery. Snapper 8 and Sanford also reject the statement that assessment of value is difficult. For every one tonne of snapper caught, associated

catches are also reduced and the reduced value is known. MFish has failed to take into account this known value.

- 172 **Sanford** notes they are a vertically integrated business and that the use of port prices to calculate value is therefore redundant. They submit that ACE value and port price used to estimate foregone catch earning, be replaced by Sanford's average sale price for snapper of \$5.50 per kilogram.
- 173 **SeaFIC** considers MFish's valuation of the commercial value of quota is flawed. It says that if the TACC is reduced, the value of quota per tonne can be expected to increase for two reasons. First, reductions in TAC/TACC now are intended to allow for enhanced rebuilding of the stock. This should decrease per unit harvest costs over time and could eventually lead to an increase in the TACC. This should increase quota value. Second, a reduction in the availability of ACE to balance by-catch will put upward pressure on ACE prices and quota value (particularly if it is reinforced with a substantial increase in deemed value).
- 174 **SeaFIC** says that modelling work on deemed values done for MFish under contract SEC2004-03 suggests that even small changes in the TACC of by-catch species can have dramatic impacts on ACE value, if they constrain other fisheries. The combination of these two factors suggests that the Ministry's valuation of commercial quota at \$42,550 may grossly under-estimate the true value of quota after a reduction in the TACC.
- 175 SeaFIC notes that port prices and ACE prices may not be a good indicator of the landed value of SNA 8 or the rents associated with it. The fishery is dominated by one vertically integrated company that holds approximately 60% of the total quota and landed around 46% of total catches in 2003-04. Much of the remainder of landings transactions are similar (e.g., the processor buys fish and sells ACE simultaneously). With limited ordinary arms length transactions, port price and ACE prices may not be a good indicator of value since fishery rents may have been shifted into post-processing profits where they may appear to be added value.
- 176 SeaFIC notes the IPP suggests that estimates of foregone earnings based on port price are higher than in reality because they do not account for handling costs. SeaFIC's view is that while it would be appropriate to consider harvest and handling costs in valuing the overall SNA 8 fishery, it may not be when valuing a change in the TACC.
- 177 The highest value use of SNA 8 ACE is likely to be for balancing by-catch. Thus the true value of an extra tonne of ACE is the sum of the landed value plus the value of the constraint on landings of the other species. For example, if a fisher catches one tonne of snapper for every two tonnes of trevally and cannot avoid catching the snapper without foregoing use of the trevally ACE, the loss of a tonne of SNA 8 ACE is the landed value of the snapper plus the value of two tonnes of trevally ACE. This is an extreme case, but demonstrates why port price may in fact underestimate the total value of a tonne.
- 178 SeaFIC submits that this kind of "shadow value" of SNA 8 ACE that acts as a constraint on other fisheries, would likely increase dramatically if the SNA 8 TACC were reduced. This is because it can become increasingly difficult and costly to

reduce by-catch rates the more they are reduced. Furthermore, if the SNA 8 biomass increases, this will increase the difficulty of avoiding it as a by-catch.

- 179 SeaFIC notes the IPP mentions by-catch effects, but has no analysis of these impacts on the value of other fisheries. There is definitely SNA 8 by-catch in the target TRE 7 fishery and other fisheries (gurnard, warehou, rig etc.). SeaFIC considers that a much fuller analysis of constraints (due to ACE availability and the proposed deemed value increases) on by-catch fisheries is needed to accurately establish the economic effect of any TACC reduction.
- 180 SeaFIC notes the proposed changes in the SNA 8 TACC will reduce commercial catches for a number of years. The Council disagrees with the statement made in paragraph 69 of the IPP that future benefits will accrue, as yields will be increased and catch rates will improve. The reality is that MSY is little different (a few per cent) from the current TACC and that the implicit reallocation in the proposals towards recreational use implies that even the very long-term commercial yields are likely to be less than the current TACC.
- 181 SeaFIC considers the IPP economic assessment of potential losses only calculates foregone revenues on landings and ACE for a single year. In its view the valuation of economic losses should estimate the present value of a stream of losses. For example, it says that assuming a discount rate of 5% and a twenty year period, the Net Present Values associated with the annual foregone catch earnings in Table 3, range from \$5.5 million to \$27 million.

Downstream effects

- 182 **Egmont Seafoods** submits that if they were not able to continue operating, the balance of the fishers in the Taranaki area would be forced either to shut their operations down or to move to a different port as they would not have a factory or Licensed Fish Receiver to service them. This has a flow on affect to the wider Taranaki community and to supporting industries such as marine engineering etc, as well as supermarkets, restaurants and takeaway businesses that rely on the company for their supply of fish.
- 183 **Sanford** agrees with the IPP that a decreased TACC will cause indirect, downstream economic impacts. Sanford points out that because snapper and their associated bycatch species are an attraction at the Auckland Fish Market, any reduction in the TACC will affect the product volume and species sold at the market. Consequently, the attraction of the market will be reduced.

MFish discussion

- 184 MFish have limited economic information and data to do a full economic assessment of the impacts that changes to the TACC and deemed values have on firms, fishers, and the fishery as a whole. MFish supports the sharing of economic information such that more accurate and timely economic information be provided to you.
- 185 The economic data that is available to the Ministry includes port price, ACE and quota trades and the associated prices for such trades, deemed value payments and cost recovery levies. This information has been included in the IPP. However, MFish

acknowledges that individual transferable quota owners and ACE fishers themselves are generally better placed to assess the economic impacts from TACC and deemed value changes. Until such time as better information is available, it is appropriate to include all available information in the IPPs that would help commercial, recreational and customary fishers make best and informed submissions.

- 186 Assessing the impacts on quota value as a result of changes to the TAC and/or TACC is not an easy process as suggested by Snapper 8, Sanford and others. There can be significant changes to the quota value as a result of TAC and/or TACC adjustments, which can have significant and detrimental affects on individual transferable quota owners and ACE fishers. Without a full analysis, effects will be difficult to ascertain. Not including this information in the IPP does not suggest that MFish is down-playing such effects. To fully explore these impacts both industry and MFish will need to direct funds to socio-economic research to help answer these questions better.
- 187 MFish agrees the “shadow value” of SNA8 will increase if the TACC is decreased due to constraints placed on other fisheries. If TACCs are reduced, MFish acknowledges that it will become increasingly difficult and costly to reduce by-catch rates. Consideration needs to be given to the constraints forced upon SNA 8 commercial fishers as a result of managing the sustainability concerns for the stock.
- 188 MFish accepts the information on economic impacts that commercial interests have provided in their submissions is likely to be an accurate assessment of the potential effects of TACC reductions on their operations. It is therefore information that you will have to weigh up in relation to potential socio-economic benefits for non-commercial fishers, and impacts on them if no TAC changes are made. This additional economic information has been incorporated into a revised discussion of the TACC options below.

TACC and allowances

Submissions

TACC

- 189 **Forest & Bird and ECO, the Wanderers Surfcasting Club, the NZRFC, and the Muriwai SFC** support a reduction in the TACC from 1 500 tonnes to 1 000 tonnes.
- 190 The Wanderers Surfcasting Club and John Forrest believe the commercial sector has had few restrictions in the past and has consistently over fished SNA 8, contributing significantly to the current low biomass.
- 191 **option 4** consider that commercial catches have exceeded sustainable harvest levels, firstly because the TACC has been exceeded in 14 of the past 17 years, and secondly because of illegal dumping and high grading. They also note that the TACC was originally set at 1 330 tonnes as a scientifically assessed safe level of harvest, but that the Quota Appeals Authority then issued what option4 regards as excessive quantities of quota. option4 submits that the original TACC should have been the upper limit on commercial catches. They think it is illogical to set a TACC for sustainability reasons and then allow the Quota Appeal Authority to issue quotas that exceed it.

- 192 **Lady Marcella and Te Ohu** oppose any reduction in the TACC.
- 193 **SeaFIC** submits the key “analysis” of the effects of reducing TACCs to certain levels are flawed because they do not properly distinguish between the differential effects of proportional (i.e. increasing through time) or non-proportional (i.e. constant/capped) recreational catches. The council considers that the IPP also gives equal weight to 600 tonne and 300 tonne recreational catch scenarios, thus providing unbalanced advice that is inconsistent with the scientific advice.

Recreational allowance

- 194 **Forest & Bird and ECO, Te Ohu and NZRFC** support retaining the recreational allowance of 360 tonnes.
- 195 **option4** requests the recreational allowance be set at a level sufficient to cover current recreational catch. They consider that the recreational catch in SNA8 has been under estimated and that the current allowance is based on poor science. option4 considers that you need to bear in mind that allocations based on these under estimates are, in its view, unreliable and need to be reviewed when better estimates are available.
- 196 The NZRFC is disappointed that MFish has not increased recreational allowances for some time. NZRFC recommends that MFish obtain better information about recreational catch, both current and historical, before consulting on any management proposals that could alter these allowances.
- 197 **Muriwai SFC** says that you should set the recreational allowance at a level capable of covering the current level of recreational catch, while also allowing a margin sufficient to accommodate the expected and anticipated increase in recreational activity in this fishery.

Customary allowance

- 198 **Forest & Bird and ECO, Te Ohu and NZRFC** support retaining the current customary allowance of 50 tonnes.
- 199 Te Ohu submits that MFish needs to do much more to improve customary estimates. It says that working through the relevant Iwi forums that have been established under the MFish Treaty Strategy, and/or going directly to each of the Iwi having interests in the SNA 8 area, are good places to start.

Allowance for other sources of fishing related mortality

- 200 **Forest & Bird and ECO** support an allowance for other sources of mortality of 90 tonnes.
- 201 **NZRFC** supports an allowance for other sources of mortality of 90 tonnes.
- 202 **Snapper 8 and Sanford** consider that an allowance of 10% of the TACC is unrealistically high and that they believe that additional mortality in the fishery is significantly lower than this.

- 203 **Te Ohu** submits it is astounded that the other sources of mortality are estimated to be as high as 150 tonnes, or 10% of the TACC. It regards this as a serious allegation and says that industry and MFish needs to take action to clarify and if necessary deal with this problem now.

MFish discussion

Total Allowable Commercial Catch

- 204 MFish notes the comments by recreational interests about what they regard as over fishing by the commercial sector in the past. However, decisions on catch limits need to be made now, that are based on the current state of the fishery. There is no guidance in the Act, past judicial decisions, or in MFish policy about whether you should take past practices into account in determining these limits. MFish is making you aware of these comments, so you can consider them if you wish in your decision-making.
- 205 Further, commercial overfishing occurs under the existing framework and is legal provided that catches are reported and a deemed value is paid. The constant exceeding of the TACC is likely to be due to an insufficient disincentive at the deemed value level. As a result, a proposal to increase this deemed value has been provided for you to consider in this paper.
- 206 MFish does not agree with SeaFIC's view that the analysis of the effects of decreasing the TACC is flawed because it does not distinguish between capped and increasing recreational catches. As discussed previously, the scenario where recreational catches increase through time was presented to highlight management risks, not management intentions. MFish accepts the inclusion of the scenario in the IPP may have been confusing. A revised discussion of the TACC options is provided below.

Recreational and customary allowances

- 207 MFish considers 360 tonnes to be the best available estimate of average recreational catches at this time. Results from the 2005–06 SNA 8 recreational catch survey will be available for the next stock assessment and should provide a revised best estimate of recreational catch. If the results are significantly different from the current 360 tonne allowance, a further review of the TAC may be required.
- 208 MFish agrees that better estimates of customary catch are required. The implementation of the Kaimoana Regulations, changes to reporting requirements of Regulation 27 and the appointment of kaitiaki are expected to improve estimates over time. Such improvements will also provide a basis for reviewing catch limits, if the quantity of snapper being caught for customary purposes is shown to be substantially different from the current proposed allowance.

Other sources of fishing related mortality

- 209 MFish does not consider the current estimate of other sources of fishing related mortality to be too high. Other sources of fishing related mortality include illegal catch, non-reported catch, dumping and high grading. An assumption was made that prior to 1986, the allowance made for other sources of mortality was 20% of reported

domestic commercial catch. Since introduction to the QMS, this allowance has been assumed at 10% of reported domestic commercial catch. These levels have been the subject of much discussion in previous years by the Snapper Working Group, and the Working Group agreed to these levels. No new information is available to suggest this estimate should be revised.

Revised Allowance Options

210 The revised table of options is provided at Table 9. Note that the only difference to the options provided in the IPP is the addition of the *status quo* option.

Table 9. Revised Options for TACs, allowances and TACCs for SNA 8

	Allowance Approach	TAC (tonnes)	Customary Allowance (tonnes)	Recreational Allowance (tonnes)	Other fishing mortality (tonnes)	TACC (tonnes)
Option 1. <i>Status quo</i>	N/A	2 060	50	360	150	1 500
Option 2. TAC reduction of 138 tonnes	Proportional	1 922	50	335	139	1 398
	Non-proportional	1 922	50	360	137	1 375
Option 3. TAC reduction of 275 tonnes	Proportional	1 785	50	311	129	1 295
	Non-proportional	1 785	50	360	125	1 250
Option 4. TAC reduction of 550 tonnes	Proportional	1 510	50	261	109	1 090
	Non-proportional	1 510	50	360	100	1 000

Total allowable commercial catch

211 Additional information has been provided by Industry to show the economic effect (opportunity costs) on commercial interests of decreasing the TACC.

212 The IPP proposed that direct opportunity costs consisted of foregone annual earnings provided by the port price, and foregone ACE value. Snapper 8 and Sanford have provided an alternative measure of direct opportunity cost, based on Sanford's average sale price of snapper of \$5.50 per kilogram. The opportunity cost assessment that Sanford has provided also includes associated bycatch costs. This reflects the commercial sectors' claim that every tonne of snapper quota reduced will reduce associated returns from by catch species. The additional information is provided at Table 9.

Table 10. Assessment of potential loss of economic return for all TACC options

	Allowance Option	TACC (tonnes)	TACC reduction (tonnes)	Foregone catch earning (\$) SNA 8 only	Foregone catch earnings (\$) Incl. bycatch
Option 1 <i>Status Quo</i>	N/A	2060	0	0	0
Option 2	Proportional	1398	102	561 000.00	777 483.98
	Non-proportional	1375	125	687 500.00	952 799.00
Option 3	Proportional	1295	205	1 127 500.00	1 562 590.36
	Non-proportional	1250	250	1 375 000.00	1 905 598.00
Option 4	Proportional	1090	410	2 255 000.00	3 125 180.72
	Non-proportional	1000	500	2 750 000.00	3 811 196.00

- 213 SeaFIC has noted that if the TACC is reduced, the value of quota can be expected to increase. However, MFish considers that the marginal effects on quota are difficult to ascertain.
- 214 Any reduction in the TACC may have a significant impact on associated fisheries that catch snapper as a bycatch. Currently many fishers catching snapper as a bycatch are unable to cover their catches with ACE, as ACE is difficult to source. This forces them to either deem their catch, or just stop fishing. By further decreasing the available ACE there may be significant repercussions for these fishers. According to submissions, this would be significant financial loss (as ACE becomes more expensive to source) or a decision to exit the industry,
- 215 Other downstream impacts of any of the TACC reductions in SNA 8 proposed in Options Two, Three and Four will impact on related industries such as processing and transport services, engineering services, supermarkets and restaurants. Coastal communities that are dependant on the inshore fishing industry will also be affected. Sanford notes that snapper and their associated bycatch are attractions at the Auckland Fish Market; any reduction has the potential to reduce the market's attraction. Naturally, the degree of downstream impact increases with the size of any TACC reductions.
- 216 MFish stated in the IPP that there are likely to be longer-term gains under any TACC decrease. Should the stock rebuild to B_{MSY} , the TACC could be increased above the existing quantity. SeaFIC considers that the maximum sustainable yield is little different from the current TACC and as such, longer-term gains from any TACC reductions are not significant.
- 217 MFish does not agree with the SeaFIC - in fact, rebuilding the stock to B_{MSY} is likely to increase the available yield by up to 15% above the current TAC. MFish considers that this is a significant gain to be made. There will also be further gains for all sectors such as an improvement in catch rates and an increase in the size of fish caught.

Option One

- 218 This option proposes to retain the existing TACC. This option will have no impact on the commercial sector.

Option Two

- 219 This option will have the least impact of all TAC reduction options on the commercial sector as it proposes the smallest TACC reduction. Any reductions, however, will have social and economic impacts on this sector. There will be direct financial loss and associated fisheries will also be impacted. It is reported that fishers catching snapper as bycatch in SNA 8 already find it difficult to source ACE to cover their catches. This option will make balancing catches even harder for these fishers. As the expected timeframe to rebuild to B_{MSY} is long in this option (projected to be 2021) benefits will not be gained for a long period of time.
- 220 Applying a proportional approach in Option two, the TACC would be reduced from 1 500 to 1398 tonnes, a reduction of 102 tonnes. As shown in Table 9, Sanford and Snapper 8 estimate that this approach will result in a foregone catch earning of \$561 000 for snapper only, and \$777 483 including snapper and associated bycatch species. This represents the least impact on earnings of all TACC reduction options.
- 221 Applying a non-proportional approach in Option two, the TACC would be reduced from 1500 to 1375 tonnes, a reduction of 125 tonnes. This reduction is only marginally higher (23 tonnes) than the proportional allowance approach under Option two and as a result, impacts will be similar. Sanford and Snapper 8 estimate that this approach will result in a foregone catch earning of \$687,500 for snapper only, and \$952,799 including snapper and associated bycatch species (Table 9).

Option Three

- 222 The TACC reductions proposed in this option are larger than those proposed in Option two. Immediate impacts of this option are expected to be substantial, both on the SNA 8 fishery and fisheries that take SNA 8 as a bycatch. Less ACE will be available to cover SNA 8 catches in associated fisheries than in Option one and two. In addition, downstream impacts will be greater in this option.
- 223 Longer-term economic gains under this option will be achieved faster than under Option one. It is expected that the stock will rebuild to B_{MSY} in a shorter period of time, which means that the TACC could be increased sooner and that catch rates will increase at a faster rate.
- 224 Applying a proportional approach in Option two, the TACC would be reduced from 1 500 to 1 295 tonnes, a reduction of 205 tonnes. As shown in Table 9, Sanford and Snapper 8 estimate that this approach will result in a foregone catch earning of \$1 127 500 for snapper only, and \$1 562 590 including snapper and associated bycatch species.
- 225 Applying a non-proportional approach in Option two, the TACC would be reduced from 1 500 to 1 250 tonnes, a reduction of 250 tonnes. This is only marginally higher (45 tonnes) than the proportional allowance under Option three and as a result, impacts of this allowance will be similar. Sanford and Snapper 8 estimate that this

approach will result in a foregone catch earning of \$1 375 000 for snapper only and \$1 905 598 including snapper and associated bycatch species (Table 9).

Option Four

- 226 The TACC reductions proposed in Option four are the most substantial proposed and will have the most severe socio-economic impact on the commercial fishing sector. Indirect costs will also be substantial and it is likely that many associated businesses will be affected by a decrease of this size.
- 227 Estimated economic gains that can be made under this option will be achieved over shorter period than those under Options two and three. Should the stock rebuild to B_{MSY} by 2014 as projected, the TACC could be increased beyond the current level of 1 500 tonnes. Further, catch rates are likely to increase relatively quickly and this may in turn reduce fishing costs.
- 228 This option will have the most severe effect on associated fisheries. Egmont Seafoods notes that in the Taranaki area, local fishers only hold quota for 20 tonnes of the 60 tonnes of SNA 8 landed there. Should the TACC be decreased by 33% as proposed in this option, Taranaki fishers will be forced to source further ACE, deem their excess fish or cease fishing. As ACE is already hard for these fishers to source, and it is proposed in this paper to increase the deemed value, it is possible that some fishers in the area will have to cease fishing. Impacts such as these will significantly affect local communities that depend on the fishing industry.
- 229 Applying a proportional approach in Option two, the TACC would be reduced from 1 500 to 1 090 tonnes, a reduction of 410 tonnes. As shown in Table 9, Sanford and Snapper 8 estimate that this approach will result in a foregone catch earning of \$2 255 000 for snapper only, and \$3 125 180 including snapper and associated bycatch species.
- 230 Applying a non-proportional approach in Option two, the TACC would be reduced from 1 500 to 1 000 tonnes, a reduction of 500 tonnes. This reduction is 90 tonnes higher than the proportional allowance and as a result, impacts are likely to be more severe. Sanford and Snapper 8 estimate that this approach will result in a foregone catch earning of \$2 750 000 for snapper only and \$3 811 196 including snapper and associated bycatch species (Table 9).

Recreational allowance

- 231 Option One - maintaining the *status quo*, has been provided in this FAP. While the *status quo* will result in no changes to the current management regime, it is likely that this option will have impacts for recreational fishers. Given the stock may not increase in the next five years, and is unlikely to rebuild to B_{MSY} in the next twenty years, recreational fishers will not benefit from any improvements to the stock under this scenario in the short term. Given the importance of snapper to recreational fishers, this option will maintain the ongoing social impacts.
- 232 Applying a proportional approach for allocating a reduced TAC would require a reduction in the recreational allowance of 25 tonnes (Option Two), 49 tonnes (Option Three) or 99 tonnes (Option Three). As discussed in the IPP, the economic cost to the

recreational sector of decreasing the allowance by any amount is uncertain and difficult to measure.

- 233 Equally difficult to measure will be the social impact of a reduction in the recreational allowance. Recreational fishers currently report that they are very unhappy with the size and availability of snapper on the west coast, which they say are being adversely affected by the low stock biomass. They have noted that excessive levels of pair trawling in the 1970s impacted heavily on SNA 8 and the stock has not recovered, leading to reduced recreational access. They also note that the recreational sector has contributed to the attempted rebuild of the fishery, accepting three bag limit reductions since 1985 as well as an increase in size limits from 25 to 27cm, which was increased for non-commercial fishers only.
- 234 Applying a non-proportional approach for allocating a reduced TAC would not require any change to the current recreational allowance. The benefit of this approach to the recreational sector is that recreational fishers will retain their existing allowance. They will also gain from any increased rebuild with an improved recreational experience as a result of the reduction to the TAC.
- 235 Recreational interests have presented no new information on the impacts of different options.

Customary allowance

- 236 The current customary allowance is 50 tonnes, and was set in 1998. No changes to the current customary allowance are proposed under any of the options.
- 237 As for recreational fishers, choosing the *status quo* option (Option One) and substantially delaying any significant rebuild will have significant social effects on customary fishers.
- 238 Reducing the TAC so the SNA 8 fishery can rebuild should have positive implications for customary fishers, by increasing the availability of snapper. The second option will result in the slowest improvement in customary snapper fishing. Options Three and Four, which involve larger TAC reductions, could be expected to bring progressively greater improvements in customary fishing within shorter timeframes.
- 239 Customary interests have presented no new information on the impacts of different options.

Other sources of fishing related mortality

- 240 Under Option One, the current allowance of 150 tonnes for other sources of fishing related mortality would remain unchanged. In Options Two, Three and Four, the allowance for other sources of mortality is retained at 10% of the TACC for each option.

Other Management Controls

Managing recreational landings

Submissions

Response to management measures proposed

- 241 **Wanderers Surfcasting Club, Urenui Boating Club, the NZRFC, option4, John Forrest and Muriwai SFC** do not support a reduction in the daily bag limit from 15 to 10 on the northern part of the stock.
- 242 Urenui Boating Club, Muriwai SFC, option4 and NZRFC note weather and sea conditions play a vital role in the recreational fishers ability to access this fishery. They submit that this reinforces the necessity to retain present bag limits to enable them to take a reasonable bag when they are able.
- 243 option4 and Muriwai SFC note that recreational catch estimates and allowances are uncertain and may be subject to review when better catch information is available.
- 244 The **Taranaki RFA, Keith Armstrong, Murray Wells, Lady Marcella, Snapper 8, Sanford, SeaFIC, Forest & Bird and ECO** support a reduction in the recreational daily bag limit from 15 to 10 in the northern part of the stock.
- 245 **Kayla** believes recreational catches should be consistent throughout the total west coast and probably the entire coastline both in the North and South Islands.
- 246 **Te Ohu** considers the recreational allowance should be capped, as proposed in one of the IPP options, and reviewed in five years when MFish undertakes its proposed stock assessment. Depending on the 2006 recreational survey results and their reliability, recreational allowances may need to be reviewed earlier.

Comments on managing recreational landings

- 247 **Te Ohu** submits it is concerned at MFish's lack of attention to constraining recreational harvest within the allowance.
- 248 Te Ohu notes that figures in the IPP suggest the recreational catch may have risen to as high as 600 tonnes, which in its view, is dangerously high and irresponsible. For this reason alone, the commission says that MFish needs to consider further bag limit reductions to ensure recreational allowances are not exceeded.
- 249 Te Ohu notes the need for robust monitoring. That information enables managers to take action if and when the recreational allowance is exceeded. In the commission's view, current systems are not designed to allow real-time monitoring of recreational catch. But in the commercial fishery, and to some extent customary, they are.
- 250 Te Ohu submits that allowing the recreational catches to exceed the recreational allowance inevitably undermines the TAC setting process, as well as any actions taken by stakeholders and MFish in ensuring the sustainability of the fishery. In particular, it can undermine any rebuild strategy that is agreed for the SNA 8 fishery.

- 251 **Option 4** note that if you reduce the TACC to 1 000 tonnes, apply no proportional reduction to recreational catch and do not change recreational management controls, you could ask recreational fishers to devise and implement voluntary conservation measures to assist and accelerate the rebuild.
- 252 **John Forrest** requested an accurate assessment of the recreational use of the resource.
- 253 **Snapper 8** and **Sanford** note that you, when setting allowances, must ensure catches are kept within these allowances. They submit this has not occurred for the SNA 8 recreational fishery. They note that the IPP states decreasing the daily bag limit from 15 to 10 is unlikely to restrain recreational catches. Snapper 8 and Sanford submit that you have a greater obligation to manage recreational catches both now and in the future and this needs to be achieved by introducing more effective management controls to maintain catches within levels of allocations.
- 254 Snapper 8 and Sanford note that recreational fishers feel they have already contributed to the attempted rebuild of the fishery. Snapper 8 and Sanford reject this notion. If current recreational catch is 600 tonnes, then recreational fishers are exceeding their allocation and MFish management controls have failed.
- 255 **Pagrus Auratus** proposes as a matter of utmost priority that you address what they describe as the current and historical failings of recreational fisheries management and implement measures to accurately account on an annual basis for non-commercial effort.
- 256 **SeaFIC** submits MFish should propose management measures that will ensure that the recreational fishery stays within its allowance. Such measures must include a reliable methodology for estimating the level of recreational removals. SeaFIC considers that MFish has failed in its responsibilities for years as it has not effectively monitored non-commercial catches and has not effectively managed them. SeaFIC claims that this failure undermines the integrity of the QMS and the property rights of commercial fisheries.
- 257 SeaFIC submits that individual recreational fishers may see no blame in their own actions, but unregulated, uncontrolled, and perhaps occasionally illegal, recreational fishing can have no place in a well managed and credible fisheries management regime.

MFish discussion

- 258 MFish proposed to reduce the daily bag limit on the northern part of the stock from 15 to 10, should you choose to use a proportional approach to decrease the TAC. Many submitters either supported the option or rejected such a reduction, regardless of what allocation option you choose. MFish notes the snapper bag limit is variable around the country and 15 is the highest bag limit set for any of the North Island stocks.
- 259 Submitters provided no new information. Recreational fishers note that the fishery is weather dependant and say that a bag limit reduction is not required as access is already limited.

- 260 There is only a limited range of tools available under the Act to constrain recreational catch; for example, minimum legal size limits and bag limits. Because there has been no comprehensive analysis of other possible means to limit this catch, MFish considers that a reduction to recreational bag limits is likely to be the most effective tool to constrain recreational catch.
- 261 The IPP noted that it is hard to determine the change in bag limit necessary to ensure that recreational catch does not exceed the allowance. This is because there is uncertainty around the existing recreational catch, and the relationship between recreational catch and the bag limit. However, MFish considers a potential management measure is to change the SNA 8 daily bag limit to more accurately reflect daily bags landed by recreational fishers. The current bag limit for SNA 8 is 15 in the northern areas of the stock (Fisheries Management Area 9), and 10 in the southern areas (Fisheries Management Area 8).
- 262 Under the non-proportional approach, no changes to the recreational allowance were proposed. Although the IPP outlined a scenario where recreational take increases proportionally to a biomass increase, there is no evidence available to show whether or not recreational catches will increase into the future or at what rate. On balance, MFish considers that the recreational allowance of 360 tonnes is likely to be the best estimate of current recreational catch. New information on recreational catch in the SNA 8 fishery will be available for use following research on SNA 8 recreational catch estimates in 2005–06.
- 263 Given timeframes for the stock to rebuild, the modelled impact of increased recreational catch and uncertainty in information on current recreational removals, MFish does not consider the risk is sufficient to warrant additional management controls on recreational catch at this time. Instead MFish advises that management controls be reviewed when new data on recreational catch is available.
- 264 Should new information indicate that recreational catch exceeds the set allowance, MFish will prepare advice to you on available options, including an adjustment to allowance and/or management controls, to constrain recreational catch. However, you are free to weigh available information on risk differently and implement management controls should you consider it reasonable to do so.
- 265 MFish rejects comments from Industry that management of the recreational sector has failed. The sector is not unregulated or uncontrolled. As mentioned previously, there have been a variety of bag limit reductions, size limit increases, method restrictions and area closures imposed on the recreational sector since the stock was introduced into the QMS. While MFish agrees that more certain recreational catch estimates are required for SNA 8, MFish does not consider that an uncertain recreational estimate equates to bad management of a fishery.

Deemed value

Submissions

- 266 **Wanderers Surfcasting Club, John Forrest, the NZRFC, option4, Forest & Bird and ECO, and Sanford** support the proposed revised annual deemed value of \$8.68 per kg.

- 267 The NZRFC and option4 support the increase in the deemed value to minimise the current over catch of the TACC. They note that this has happened in 14 of the 17 years the QMS has been in place, with a total of 1116 tonnes in excess of quota landed over these years.
- 268 **Sanford** submits that an increase in the deemed value will protect their property rights, ensuring that fishers acquire ACE to balance catches and that if ACE is not available they will stop fishing.
- 269 **Sealord, the Taranaki RFA, Lady Marcella, NZFCF, Egmont Seafoods, Ngati Ruanui and SeaFIC** do not support the proposed revised annual deemed value of \$8.68 per kg.
- 270 Sealord, Lady Marcella and Egmont Seafoods note that SNA 8 is caught as bycatch in other fisheries, such as warehou, particularly in the Taranaki area. They note that it is already very difficult to obtain ACE to cover SNA 8 catches. They say that setting a deemed value of 200% of the port price will have a serious impact on fishing operations.
- 271 Egmont Seafoods submits that deemed values providing an incentive to balance catches would be justified in a perfect world for a single species fishery. However, in its view such a measure is totally flawed in a mixed species fishery, particularly where ACE is already difficult to obtain at a realistic value. The company believes that the increased deemed value will impose an artificial value for SNA 8 ACE. This is because ACE holders would expect to obtain an ACE rental approaching the deemed value, especially when a differential is maintained.
- 272 Egmont Seafoods submits that deemed values should not penalise fishers for landing fish that they do not hold ACE for. This is especially important where the species taken in excess of ACE is a legitimate bycatch of targeting other species. This company says that imposing a deemed value of \$8.68 with the associated differentials, will mean that fishers will be paying a base penalty of approx \$3.93/kg. This is the deemed value less the landed price of \$4.75/kg, for any SNA 8 landed.
- 273 Egmont Seafoods consider this penalty will increase depending on how much SNA 8 quota a fisher is holding, and the volume of bycatch caught when the differential begins to apply. A fisher could be faced with paying a maximum penalty of \$12.61, over and above what they receive from the licensed fish receiver, for every kg of fish landed in excess of the 200% of ACE they are holding.
- 274 SeaFIC does not necessarily agree that the current deemed value is too low to provide sufficient incentives for all fishers to acquire ACE to balance catches. They note there are many fishers who do not target snapper, and are in fact actively trying to avoid snapper, who already have difficulty acquiring ACE to cover their bycatch.
- 275 SeaFIC considers setting the deemed value at 200% of port price is an arbitrary policy. The council says that this is inconsistent with both the Ministry's current policies for setting deemed value and the recommendations of the Joint Working Group, which the Ministry is already beginning to implement for other stocks.

- 276 Lady Marcella, Egmont Seafoods, the NZFCF and **Murray Watson** submit that even if fishers are prepared to cover catches with ACE they are constrained by the willingness of ACE holders to trade. Lady Marcella and Egmont Seafoods note there is ACE available at the end of each year despite snapper being overcaught each year. They submit that larger companies hold onto ACE so that a ten percent carry over can be obtained for the next season.
- 277 **Murray Wells**, the Taranaki RFA, Kayla, Lady Marcella, Egmont Seafoods, Ngati Ruanui and SeaFIC do not think that increasing the deemed value will stop overfishing. They submit that the proposed revised deemed value would encourage fishers not to land snapper over their available ACE. This will result in high grading, misreporting, illegal activity and dumping.
- 278 SeaFIC submits that unless MFish is prepared to increase compliance efforts to ensure discarding does not increase, it should weight the risks of applying such punitive deemed values. Unrecorded discards have the potential to undermine data quality for assessments, which are already seriously undermined by the lack of information on non-commercial fisheries (a situation that will be exacerbated if any reallocation is effected).
- 279 Te Ohu notes the current deemed value for SNA 8 is not acting as an incentive for fishers to balance their catch against ACE. This is clearly supported by the TACC being exceeded in each of the past 10 years. The commission agrees that any economic incentives for this to continue need to be removed. However, the commission says that it is important to strike some balance between removing the incentive and ensuring fishers who catch SNA 8 as bycatch, are not put out of business.

MFish response

- 280 There are numerous factors that need to be taken into account when setting deemed values. Importantly, it is not illegal for fishers to pay deemed values. When the deemed value has been set too low (i.e. below the price of ACE) fishers are more likely to pay deemed values before they buy ACE.
- 281 Creating an incentive to pay deemed values before buying ACE has significant biological and economic consequences. The biological effect is that catch and landings end up being greater than the TACC. Recreational fishers are correct in pointing out that quantities of SNA 8 that commercial fishers have caught in most years have exceeded the TACC. Continuation of this will pose sustainability risks and will slow or prevent any rebuilding, and if not monitored adequately may cause the stock to decline even further.
- 282 When SNA 8 is prevented from rebuilding, CPUE goes down, increasing commercial fishing costs and reducing both recreational and customary catches. Given that SNA 8 is a shared fishery, the effects on recreational and customary fishers due to overfishing need to be taken into account. Deemed values are one of the few management tools that can be used to prevent commercial overcatch. Deemed values need to be set at a rate that ensures that recreational and customary fishers can also benefit from a well-managed fishery.

- 283 Sealord and others argue that setting the deemed value prohibitively high in SNA 8 prevents fishers from targeting other stocks in the multi-species fishery. They contend that the deemed value payments would remove value from other stocks, reducing total revenue, and in some cases remove all profits and prevent fishers from staying in the fishery.
- 284 The joint Crown/Industry working group on deemed values have recommended that new information other than just the port price be used to help set appropriate deemed values. You are currently reviewing these recommendations.
- 285 Using new information other than port price to set deemed values may be both more effective and more accepted by commercial fishers, and implementation need not be delayed pending your decision on the working group paper. Some of this information is already being used in the setting of deemed values for the 2005–06 fishing year.
- 286 Analysis of the ACE trades suggests that average ACE price is currently being traded for approximately \$2.32/kg on average, and the 90th percentile is approximately \$4.00/kg. The 90th percentile is considerably higher than the current annual deemed value rate of \$2.59/kg. Since fishers are also faced with differential deemed values, the higher ACE prices suggest those fishers that pay these values would be forced to pay differentials that are greater than what they bought ACE for. The port price for the 2005–06 fishing year is \$3.92/kg.
- 287 Deemed values may act as a substitute for ACE, if the deemed value is set below \$4.00 fishers would generally pay the deemed value before buying ACE (assuming the threshold for paying differentials was not met). Since the port price is \$3.92, paying the current deemed values still provides some value to the fishers. Had the deemed values been set above the port price (greenweight or ex-vessel value), all incentive to deem SNA8 would be removed.
- 288 Dumping or discarding SNA8 may increase if deemed values are increased. Taranaki RFA and others highlighted this risk as part of their submissions. SeaFIC suggested that an increase in compliance effort would be needed in response to these risks if there are higher deemed value rates. MFish acknowledges that such a risk needs to be managed, and that more enforcement may need to be targeted towards the SNA8 fishery if the TACC is reduced and if higher deemed values rates are set.
- 289 MFish does not dispute that setting higher SNA 8 deemed values than they are at present may remove value from this multi species fishery and have adverse economic impacts on some commercial fishers. However, this must be set alongside the consideration that SNA8 is a shared fishery, and a TAC needs to be set that provides for the sustainability of the stock, for the rebuilding that stock assessment information indicates is needed, and allows for continued reasonable use by recreational and customary fishers.
- 290 If the current deemed value is not changed, fishers are likely to continue to over catch SNA 8 above the TACC. If a lower TAC and TACC is set, a deemed value rate needs to be set that keeps commercial catches within the TACC.

- 291 The level of the proposed deemed value at \$8.68 should be effective in constraining commercial catches within the TACC. However, it will have adverse effects on some fishers, and may increase risks of (illegal) dumping and discarding.
- 292 An alternative option would be to set the deemed value at \$4.25. This is marginally higher than the 2005 port price and equal to the 90th percentile value of ACE trades. This alternative value would still provide a stronger disincentive than currently exists, but will provide for the catch of legitimate by-catch and will not risk dumping or other illegal activity. If the actual commercial catch is then monitored, it will be possible to determine whether this value is having the desired effect, or whether further increases may be required.
- 293 The deemed values quoted do not include GST, which will apply from 1 October 2005. Differential deemed values will continue to apply.
- 294 Both options are viable options. You need to consider both the risk to the stock of continued commercial overcatch if the deemed value is set too low, and the risk of economic impacts and non-compliance if the deemed value is set too high.

Social and Cultural Factors

Submissions

- 295 **NZRFC** asks that proper weighting to be given to cultural and social well-being aspects of allowances and not just the economic well-being of commercial fishers.
- 296 **option4** considers that commercial fishers have gained socially and economically from over fishing this resource at the expense of the social and cultural aspirations of other users.
- 297 **Wanderers Surfcasting Club** and **John Forrest** believe that MFish has a social and economic duty to ensure the stock is managed above B_{MSY} . They submit that many recreational users still depend upon snapper for food in times of economic hardship. They say that there are still many New Zealanders on subsistence incomes who rely on snapper to ensure their families are fed. In their opinion the Ministry has made it significantly harder for these people and their families to survive with what they describe as the degradation of the fishery.

MFish discussion

- 298 The Fisheries Act requires the social and cultural impacts of fisheries management decisions to be taken into account, as well as the economic impacts described in the previous section. There is some difficulty in doing this, because in a majority of fisheries (including SNA 8), the value of a stock to non-commercial fishers is largely intrinsic and cannot be quantified easily. This is in contrast to the economic value of the stock to the commercial sector, which is relatively easier to quantify.
- 299 Non-commercial fishing interests have emphasised the importance of social and cultural values that they hold in relation to snapper from the SNA 8 stock. MFish has developed several initiatives aimed at improving the management of non-commercial fisheries (such as the development of Iwi Forums and Recreational Forums).

An important objective of these initiatives is gaining a better understanding of social and cultural values. However, these initiatives are relatively recent, and MFish has not been able to take full advantage of them to obtain more comprehensive information on SNA 8-related social and cultural impacts, including beneficial impacts of some options, on non-commercial fishers.

- 300 As for information on economic impacts, MFish has been largely reliant on information that stakeholders have provided on social and cultural factors. You need to consider this information alongside the economic information in your evaluation of the merits of the four management options that MFish has identified for this fishery.

Environmental Considerations

Submissions

- 301 The **Kaipara study group** believes that MFish needs to take steps to mitigate the negative impact of trawling on the Kaipara Harbour recreational and customary snapper fishery. The Kaipara study group holds the view that trawling activity at the entrance to the Harbour and adjacent coastal areas is having a significant negative impact on the snapper fishery. Historically the Kaipara Harbour has been an important habitat for snapper and the lack of them is now becoming apparent in the ecology of the harbour.
- 302 **Lady Marcella** notes they target warehou, rig and school shark. Snapper is always caught as a bycatch in these fisheries and the interdependence of these inshore fisheries needs to be considered.
- 303 **Forest & Bird and ECO** reject the suggestion in the application of ‘*Statutory Considerations*’, section 13. (2)(b)(ii) in relation to snapper. The IPP states that... “*Environmental considerations are not relevant to stocks such as snapper, which are long-lived and have many year classes in the population*”. They submit that the reality is that SNA 8 has a much higher reliance on a few year classes to sustain the fishery than other snapper stocks, both as a consequence of the faster growth of the stock and the fishing down to 8-10% of the biomass. Their assessment is that the TACC is dependent on primarily three to four year classes for 75% of the catch.
- 304 At such low biomass levels, if there are two years of poor recruitment, they believe that there is increased pressure on those year classes that supply so much of the catch. Should this occur at such low stock levels, and with a significant proportion of that 75% of the catch either not reaching spawning age, or just spawning once, the two submitters think that the risk of forcing change in genetic disposition, and possibly spawning failure, would be considerably enhanced.

MFish discussion

- 305 Trawl exclusion zones have been put in place in west coast harbours due to problems in the availability of some stocks in these areas. The zones include harbour waters out to two nautical miles from the harbour entrances. Additionally, trawling is prohibited within one nautical mile of the west coast.

- 306 One of the main reasons these regulations were imposed is to protect juvenile snapper, which tend to concentrate close to shore in shallow water. Another reason was to give recreational fishers who mainly fish from small boats in near shore waters, an area where they could fish without disturbance from larger commercial vessels.
- 307 MFish considers that the Kaipara study group's concern about the current state of the harbour snapper fishery may be explained by a combination of environmental changes that have affected snapper habitats, and the low biomass of the SNA 8 population. MFish considers that TAC changes, rather than adjustments to trawl restrictions, offer better prospects of improving the harbour fishery.
- 308 It is recognised that any changes to the management of the SNA 8 fishery, including TAC and deemed value changes, will impact on other stocks. These effects have been outlined and assessed in the section on economic impacts. As that section says, an important consideration is that a decrease in the TAC could constrain some fisheries.
- 309 However, such effects need to be considered in relation to the fact that the biomass of SNA 8 is substantially below the level that can support the maximum sustainable yield. In weighing these issues, MFish considers that the requirement for you to rebuild the stock, under s13, should be your priority concern. The rate at which the rebuild is set can be sensitive to the interdependence of stocks. In recognition of this, MFish have provided you with a series of options that takes into account varying effects on other fisheries.
- 310 MFish agrees that SNA 8 is reliant on only a few year classes and that this may result in an increased risk to sustainability. However, in the context of s13 (2)(b)(ii), reliance on a small number of year classes is not an environmental condition that may affect the rebuild occurring in appropriate period. Any rebuild strategy adopted will reduce the reliance on few year classes, as this is a fishery-induced change to the stock, rather than an environmental effect.

Other Management Issues

Submissions

Management plans and objectives based management

- 311 **Pagrus Auratus** notes that MFish's 2005-08 Statement of Intent promotes an objectives-based approach to fisheries management. Pagrus Auratus supports an objectives based approach to fisheries management. For SNA 8 there are no clearly articulated management objectives. The company says that this causes several problems.

- 312 Firstly, as it says is evident in the IPP, there is a lack of clarity about what management of the fishery is trying to achieve. The company's view is that ideally, management objectives would be developed as part of discussion with stakeholders in the development of a management plan. The purpose of such a plan would be to reach multi sector agreement on the management issues and appropriate responses. Pagrus Auratus says that the lack of clarity and agreement on management objectives makes it difficult both to prepare impartial advice on management options and then to assess the merits of each option in achieving the desired objectives.
- 313 Pagrus Auratus identifies the second problem stemming from this lack of objectives as it results in a scenario where science drives management response, rather than an approach where management considerations frame the questions to be answered by science. The medium-term research plan for the Snapper Working Group is the only "plan for this fishery". Pagrus Auratus describes the science process as self-perpetuating, despite calls from the company for an independent review of the current plan and science directions for these stocks.
- 314 SeaFIC submits that, consistent with the Ministry's Statement of Intent, MFish should engage actively and constructively with all sectors. The purpose of this would be to determine management objectives for which appropriate and sensitive scientific advice can be formulated.
- 315 Te Ohu submits that prior to preparation of the IPP a meeting of all stakeholders should have been held to discuss the issues raised, including a preferred rebuild timeframe and reference point targets.

Additional measures

- 316 **Wanderers Surfcasting Club** and **John Forrest** request that a regular assessment of the SNA8 stock be undertaken at frequent intervals until the stock can be proven to have returned to above B_{MSY} , and at longer intervals when replenished.
- 317 John Forrest requests MFish to investigate the removal of size limits for commercial fishers and then subsequently ensure that all fish caught should be landed.
- 318 John Forrest submits that in addition to a TACC reduction for SNA 8 there must be a proportional reduction in the TACC of other species that would be the expected by catch for this amount of quota.
- 319 The **Kaipara study group** submits that MFish should raise the minimum size at which snapper can be taken by the commercial sector to that of the recreational and customary limit 27cm. This is considered to be an anomaly that needs to be addressed.
- 320 **Muriwai SFC** notes that currently there is a 1 nm no trawl zone down the top half of the NI west coast, that zone increasing to 2nm harbour bubbles. There is also a 4nm set net ban for Maui Dolphin areas. They submit that a no trawl ban of 4nm should be imposed for the SNA8 zone particularly for the northern regions - say Tirau Point north.

- 321 The **Taranaki RFA** requests that the minimum legal size for snapper be lifted from 27 cm to 30cm for recreational fishers and from 25cm to 30cm for commercial fishers.
- 322 **Murray Wells** submits that consideration should be given to control charter vessels by some sort of quota, as their catch over a season is considerable compared with amateur fishers.
- 323 **Lady Marcella** is disappointed that it was not directly informed of the SNA 8 proposal. MFish should be obliged to inform all quota holders of any proposed changes.

Compliance

- 324 **Wanderers Surfcasting Club** and **John Forrest** request that MFish monitors commercial operators to ensure that fish caught in one area is not transported to, and reported in, another statistical area. They note that penalties should be severe for non-compliance.
- 325 **Muriwai SFC** submits you should introduce an effective means of compliance measures to ensure that the TACC is not persistently over caught as has been longstanding practice for this fishery.
- 326 **Murray Watson** submits that more money is required for fisheries surveillance. He knows people who fish snapper for the Japanese market on snood long line vessels. He notes that they have told him that seven out of every ten cases of snapper that come aboard are dumped to get the required snapper. Murray Watson believes this is the main cause of the snapper being under stress.

MFish discussion

Management plans and objectives based management

- 327 As mentioned in the generic section of this FAP, the Statement of Intent charts a new direction for managing fisheries and engagement between MFish and stakeholders. However, the transition to management plans will be gradual and in the mean time MFish is willing to engage with stakeholders and ensure that prudent and robust measures are implemented.
- 328 In the absence of a Fishery Plan for SNA 8, MFish has used the provisions of the Fisheries Act as a default to guide the management objectives for this fishery. Section 13 sets out the requirement for managing the stock at or above B_{MSY} . The Medium Term Research Plan for snapper sets out the research programme proposed for SNA 8 to provide the information required for management advice.
- 329 However, MFish considers that the stock assessment information demonstrates that actions are required now to promote the rebuild of the SNA 8 fishery. Accordingly, MFish also considers that it is possible to implement such key actions – identified in the conclusion and recommendations – while deferring some of the wider policy issues to be worked through in the coming year in a collaborative process with stakeholders.

Additional measures

- 330 MFish notes that assessments of SNA 8 are undertaken every five years. The Snapper Working Group oversees the process of commissioning assessments. It has not sought shorter timeframes and MFish considers that five yearly surveys are adequate to monitor both the response to management interventions, and changes to the stock due to other reasons.
- 331 Submitters have suggested additional measures for managing SNA 8 such as size limit changes and extensions of trawl prohibitions. MFish notes the current review is a response to the stock being below B_{MSY} . As mentioned previously, the TAC is set under s 13(1) and is the primary measure ensuring sustainability of stocks. Therefore you are required to establish a TAC that meets the obligations to rebuild, rather than relying on other measures authorised under the Act. Additional approaches to the primary one of setting an appropriate TAC can be explored once this statutory responsibility regarding the catch limit is met.
- 332 MFish does not consider the TAC or TACC of associated or interdependent stocks need to be adjusted as a response to a reduction in the SNA 8 TAC. Currently, there are no sustainability concerns for these stocks that would require a reduction.
- 333 MFish is dependant on representative organisations to disseminate information to all affected commercial and non-commercial interests. This may not have been effective for SNA 8 in this instance. Quota holders have a right to know of any changes proposed that would affect their property right. MFish takes note of Lady Marcella's submission and will endeavour to improve dissemination of information to quota holders in the future.

Compliance

- 334 MFish does monitor commercial operators should there be concern that fish is caught in one area and transported to another area for landing, or if catches are being dumped. MFish considers that penalties are severe for non-compliance. For example, penalties for offending can include imprisonment for a term up to five years, a fine up to \$250 000, forfeiture of fishing gear, and forfeiture of quota.
- 335 As mentioned previously in this IPP, there is ongoing compliance monitoring of all aspects of commercial take to constrain commercial catches within both the TACC and within individual fishers' entitlements. In addition, deemed value payments are required for every kilogram caught over and above the annual catch entitlement. MFish recognises that the TACC in SNA 8 has generally been overcaught. The incentive to land fish against annual catch entitlement is obviously not working and as a result, MFish is reviewing the deemed value in this paper.

Conclusion

- 336 The 2005 SNA 8 stock assessment has shown that despite previous efforts to rebuild the fishery, current biomass of the stock is only about half of the target level. Some submitters consider that biomass in the southern parts of the stock are higher than in the northern parts of the stock. However, localised differences in biomass are expected in a stock this size as a reflection of different patterns and intensities of

fishing effort. MFish considers the current assessment is a good indicator of the status of the SNA 8 stock.

- 337 Under s 13 of the Fisheries Act 1996, you are obliged to rebuild SNA 8 to the target level. The IPP set out a 20 year maximum timeframe to rebuild the stock. Submissions were opposed to the timeframe; shorter timeframes were requested by most non-commercial submissions and longer timeframes were requested by most Industry submissions. MFish recommends the 20 year timeframe be upheld for biological and generational reasons, as well as decisions by the previous Minister to rebuild the fishery.
- 338 Concern was raised in submissions about the model projections used in the IPP. MFish has responded to these concerns by removing reference in this advice to some projections that are based on unlikely scenarios. Other projections have been included to highlight risks in the expected rebuild rates and probabilities.
- 339 Concern was also raised about the decision not to include the *status quo* as an option in the IPP. Current stock modelling predicts that under the current TAC, biomass is expected to increase slowly, but will not reach B_{MSY} within the next twenty years. There is a 64% chance that biomass will increase in the next five years. While MFish considers this rebuild to be uncertain and slow, the *status quo* has been included as an option in this advice.
- 340 As well as the *status quo*, the three TAC reduction options proposed in the IPP have been retained and assessed for your consideration. Each reduction option results in greater certainty of rebuild at a faster rate than maintaining the *status quo*. SNA 8 is an important fishery to both recreational and commercial fishers. Accordingly there is benefit in rebuilding the stock at a faster rate than is likely under the current TAC.
- 341 The key issues that you need to weigh up in considering the different TAC reductions are the benefits associated with the various rates of rebuild, relative to the socio-economic impacts of any catch reduction. Impacts are both positive and negative depending on which stakeholder group is being considered. Industry provided additional economic information in submissions on the IPP. This information is included in the discussion of socio-economic impacts. MFish considers that it is appropriate that you decide what relative weight to give to the impacts that have been identified in relation to the options, and make the choice of which one best meets the requirements of the Act.
- 342 Two approaches to set allowances and the TACC within each TAC reduction option were proposed in the IPP. The first approach is a proportional one where allowances are determined according to current TAC proportions. The second approach is a non-proportional approach that focuses on future management opportunities and relative value to each sector. The proportional approach results in a proportional reduction to the recreational allowance and the TACC. Under the non-proportional option, only the TACC is reduced. The recreational allowance remains unchanged.
- 343 The two approaches were a primary focus in submissions on the IPP. Predictably, non-commercial fishers and environment groups rejected a proportional approach and commercial fishers rejected a non-proportional approach. Both approaches were alternately labelled 'unfair' and 'unjust'.

- 344 MFish has a policy preference for a proportional approach. However no explicit process has been undertaken in the past to set the proportions of the SNA 8 TAC that are currently allocated to each sector. MFish considers the current allowances reflect current catch levels. To translate the current allowances into a proportional share would create the proportions by default, rather than as a result of an explicit process. As a result, both approaches have been retained in the advice to you.
- 345 A proportional approach to setting allowances will require a reduction in the recreational allowance. To achieve this reduction, a corresponding reduction in the daily bag limit would be required. As a first step, MFish has proposed to decrease the daily bag limit in the northern part of the stock from 15 to 10 in line with the bag limit in the southern part of the stock. Additional measures may be required in the future.
- 346 SNA 8 has been overcaught by approximately 10% in 14 of the 18 years since introduction into the QMS. To discourage fishers from fishing beyond their ACE, the IPP proposed to increase the deemed value. However, commercial fishers provided information showing that in some areas, most snapper is caught as bycatch. In the current market, ACE can be extremely difficult to source to cover this bycatch. Should the TACC be reduced, ACE will be more difficult to source and the proposed deemed value increase could be a severe financial impact, and may encourage illegal activity such as dumping.
- 347 The deemed value proposed in the IPP of \$8.68 (GST excl.) may be high when considering the bycatch fishery. You may consider an alternative deemed value of \$4.25 (GST excl.) to be more appropriate, set marginally higher than the current port price and ACE transactions. This will encourage fishers to balance their catch, but will not be so high to encourage dumping or have significant adverse economic effects.

Final Recommendations

- 348 The Ministry of Fisheries recommends that you:
- a) Decide to rebuild the SNA 8 stock, according to one of the four TAC options below:
- EITHER
- Option 1** - Retain the existing TAC, TACC and allowances for SNA 8;
- OR
- Option 2** - Reduce the TAC for SNA 8 from 2060 tonnes to 1922 tonnes and either:
- i) Allocate the TAC with:
- An allowance for recreational fishers of 335 tonnes;
 - An allowance for customary interests of 50 tonnes;
 - An allowance for other sources of mortality of 139 tonnes;
 - A TACC of 1398 tonnes.

OR

- ii) Allocate the TAC with:
 - An allowance for recreational fishers of 360 tonnes;
 - An allowance for customary interests of 50 tonnes;
 - An allowance for other sources of mortality of 137 tonnes;
 - A TACC of 1 375 tonnes.

OR

Option 3 - Reduce the TAC for SNA 8 from 2 060 tonnes to 1 785 tonnes and either:

- iii) Allocate the TAC with:
 - An allowance for recreational fishers of 311 tonnes;
 - An allowance for customary interests of 50 tonnes;
 - An allowance for other sources of mortality of 129 tonnes;
 - A TACC of 1295 tonnes.

OR

- iv) Allocate the TAC with:
 - An allowance for recreational fishers of 360 tonnes;
 - An allowance for customary interests of 50 tonnes;
 - An allowance for other sources of mortality of 125 tonnes;
 - A TACC of 1 250 tonnes.

OR

Option 4 - Reduce the TAC for SNA 8 from 2 060 tonnes to 1 510 tonnes and either:

- v) Allocate the TAC with:
 - An allowance for recreational fishers of 261 tonnes;
 - An allowance for customary interests of 50 tonnes;
 - An allowance for other sources of mortality of 109 tonnes;
 - A TACC of 1 090 tonnes.

OR

- vi) Allocate the TAC with:
 - An allowance for recreational fishers of 360 tonnes;
 - An allowance for customary interests of 50 tonnes;
 - An allowance for other sources of mortality of 100 tonnes;
 - A TACC of 1 000 tonnes.

- b) Depending on the allowance approach taken, recreational catches be managed by:
 - i) Reducing the amateur bag limit in the northern part of the stock from 15 to 10, in line with bag limits for the southern part of the stock.
OR
 - ii) Reviewing the effect of increasing recreational catches on rebuild rates of the stock when better recreational catch estimates are available.
- c) Increase the annual deemed value of SNA 8 to either:
 - i) \$8.68 (GST excl.), 200% of the 2004 port price. GST would be added to the invoice to fishers.
OR
 - ii) \$4.25 (GST excl.), which is marginally higher than the 2005 port price and the 90th percentile value of ACE trades. GST would be added to the invoice to fishers.

