

SNAPPER (SNA 2) – FINAL ADVICE

Minister's Preliminary Views

- 1 MFish proposed that the SNA 2 TAC be set at 460 tonnes for the 2002–03 fishing year. Within the TAC, it was proposed to increase the TACC from 252 tonnes to 360 tonnes (an increase of approximately 43%). It was also proposed that allowances be set at 20 tonnes for customary Māori fishing interests, 40 tonnes for recreational fishing interests, and 40 tonnes for other sources of fishing-related mortality.
- As part of your initial view, you noted that the SNA 2 TACC has been overcaught every year since the introduction of the fishery into the QMS. The overcatch has occurred despite various attempts of the fishers involved to remain within the constraints of the TACC. These fishers are of the view that the overcatch has been unavoidable and reflects increased abundance of snapper.
 - The fishery assessment for SNA 2 has been updated and indicates that the stock has rebuilt to a point where the stock size is close to the level that would produce the maximum sustainable yield (MSY). However, as there are no indices of biomass available the model estimates must be treated with caution. Nonetheless, you were satisfied that there is a legitimate case to consider setting a TAC in this fishery and increasing the TACC.
 - Your preliminary view was to support a TAC being set at 460 tonnes. However, you also considered that a higher recreational allowance at 80-100 tonnes could be provided for. You requested MFish to investigate the potential to re-run the stock assessment model with a higher recreational allowance. You also noted that the results of the 2000 recreational survey have not been confirmed as yet. You proposed to take into account the results of that survey if the information is confirmed prior to the time of your final decision. You requested stakeholders to provide specific comment on the recreational allowance issue for SNA 2.

Environmental considerations

- **Option4** raised some concerns about what they considered to be associated and dependant species. However MFish considers the issues raised to be more appropriately considered as part of the TAC setting considerations associated with interdependent stocks. Accordingly, this issue is discussed under that heading.

TAC, TACC, and allowances

Submissions

- **The Area2 Inshore Finfish Management Company Limited** (“Area2 Company”) supports the proposed TAC at 460 tonnes. The Area2 Company believes that in the past three months, all stakeholders have had the opportunity to discuss the SNA 2 issues at three meetings. The Area2 Company considers that there was general approval at these fora for the SNA 2 proposal, and notes that agreement between stakeholders is often extremely difficult to obtain. This has

been obtained for SNA 2 due to the formal and informal discussions that local people have had on the SNA 2 topic.

- The Area2 Company claims that it is frustrated about the Minister's preliminary view to introduce new information (the 2000 survey) that stakeholders have not sighted. The Company considers that consulting and meaningfully discussing information at a local level is crucial to inshore fisheries where locals share interest in fisheries management. The Company suggests that when the results of the 2000 survey become available next year they should then be shared and discussed with all stakeholders.
- **SeaFIC** supports the proposed TAC and TACC. SeaFIC considers that the stock has rebuilt considerably since the 1980s and that the updated model presented to the Snapper Working Group was persuasive regarding the overall state of the stock.
- SeaFIC are concerned about the Minister's proposal to provide a recreational allowance of 80-100 tonnes, and ask whether this is based on survey results or the Minister's own conclusion about the recreational catch level. If the latter, SeaFIC request to know the basis for the Minister's decision, and would object strongly if these figures have simply been "plucked out of the air". If the former, then SeaFIC asks whether the Minister has seen a draft of the 2000 survey that has not been made available to industry representatives, and which has not been subject to peer review.
- SeaFIC considers that timing makes it impossible to incorporate the 2000 survey information into the current assessment in a considered way. Stock assessment modeling is highly complex, and new numbers cannot simply be slotted into the process. The estimated yields from the current assessment cannot be used without proper adjustment to take account of new recreational catch estimates.
- SeaFIC believes that the proper process is to refer the information from the 2000 survey to the Recreational Working Group. If this group agrees with the survey findings, then the information should be referred to the Snapper Working Group for full consideration. SeaFIC states that if the full stock assessment needs to be updated immediately, then the costs should not be borne by SNA 2 quota holders. This is because they have already paid their share of costs for a full stock assessment, and the need for a revised assessment is due to the untimely receipt of the 2000 survey results.
- **Sanford Limited** supports the increase in the SNA 2 TACC from 252 to 360 tonnes. Sanford endorse and support SeaFIC's concerns relating to the recreational catch allowance, and the process for which this is to be considered.
- **TOKM** note that SNA 2 quota owners and fishers have been attempting to constrain their take from this fishstock for many years, in view of the low TACC and the high cost of deemed value payments. TOKM supports the proposal, but considers that it is particularly cautious.
- TOKM are concerned about the Minister's comments regarding an increased recreational take, and note that the Minister's letter provides no explanation or

justification. TOKM considers that the Fisheries Act gives no primacy to recreational take over customary or commercial takes. It is considered that the Minister's proposal appears to be an attempt to ignore the legislative reality by placing recreational fishing ahead of commercial fishing. Unless there is adequate justification within the existing provisions of the Fisheries Act, TOKM object to the Minister's preliminary view on the level of the recreational allowance.

- One submission was received from local recreational fishing interests. The **Pania Surfcasting Club** agree with the proposal set out in the IPP, but consider that the new TACC would need to be reduced if it is not reached.
- The SNA 2 proposal is a major concern to the **NZRFC**. The NZRFC is aware that the industry has already had an increase in the past for overcatch and there does not appear to be any information available to show what industry has done to avoid this continuing to happen. NZRFC considers that MFish is very quick to action overcatch of birds and mammals but is not so enthusiastic when it comes to fish overcatch. NZRFC notes that the stock assessment indicates the abundance has substantially increased since 1986 and the fishery has rebuilt to at or around the B_{MSY} level.
- NZRFC considers that if industry receives a 43% increase, then the NZRFC will accept nothing less than a 43% increase in the recreational allowance, and an increased bag limit for SNA 2 recreational fishers. NZRFC considers increasing the recreational allowance without increasing the bag limit does nothing more than provide a buffer zone for commercial operators.
- NZRFC are opposed to the SNA 2 TACC increase because there has not been any increased bag limit formally tabled. Recreational anglers have taken bag limit cuts, and industry has already had one increase in the TACC. The bag limit used to be 30 snapper. They contend that this was reduced down to 20 fish around 1991-92, and reduced again more recently to 15 fish per day 1995-96, and more recently to 10 fish per day – these reductions were supposedly to increase stock levels. The recreational sector took the cuts, not industry. Therefore NZRFC believes that if there are to be further catch increases, then the recreational sector should have the “first play of the ball”.
- **Option4** opposes the proposed SNA 2 TACC increase. Option4 considers that an increase of 43% in a TACC based on the stock assessment's base case that the biomass is 10% below B_{MSY} cannot be substantiated. Option4 suggests that the Minister should indicate to MFish and the commercial sector that no TACC increases in shared fisheries will be considered until the fishery is scientifically assessed to be at or above B_{MSY} . Option4 says that harvesting MSY from a stock that has not rebuilt to a level that will support it is contrary to the Fisheries Act. Option4 requests MFish to incorporate more than just the fishing industries position when giving advice to the Minister in shared fisheries.
- Option4 does not consider the proposed TAC increase to be sustainable as they consider that SNA 2 has not rebuilt. Option4 claims that experienced recreational fishers who have fished SNA 2 over the last 30-40 years have noticed no significant improvement in their catch rates or the size of snapper caught. They

claim that recreational catch rates are nowhere near as good as they were in the 1960s before the industry's pair trawlers in Hawke Bay overfished the snapper stocks during the 1970s.

- Option4 considers that the SNA 2 stock assessment model has a lot of uncertainty as there is no index of relative abundance, there is no useful CPUE time series, and there is no absolute biomass estimate. They note that the only significant data other than catch history used in the model was the three years of catch at age data. Option4 considers that this data does not “mitigate risk” as it is the cause of the uncertainty and not an adequate foundation for a model. They consider that SNA 2 is still rebuilding and the industry case is wholly based on the model projections of what might happen in the next five years.
- Option4 notes that the industry gave an undertaking to constrain their snapper catch to the TACC in 1992–93 when the TACC was specifically increased to 252 tonnes. They point out that this did not happen and note that the overcatch for the past 15 years have averaged 143% of the TACC. Option4 believes that SNA 2 is an example of the ongoing collusion between MFish and the industry, and MFish's willingness to consider expedient solutions at the expense of sensible fisheries management strategies. Option4 considers the proposal shows a total disregard to the rights of the public and Māori customary fishers' abilities to harvest their fish.
- Option4 believes the proposal does not adequately consider the effects on associated and dependent species (*sic*) interactions, for example school shark. The Plenary Report on school shark describes them as slow growing with females only breeding once every 2 or 3 years. There is concern about the over fishing that has occurred in Australia where the largest females have been fished out and “a stock collapse is very probable”.
- Option4 notes that the Plenary Report states that “The most important conclusion from this for New Zealand is that fishing pressure on large mature females should be minimised to maintain the productivity of the species.” The SCH 2 commercial catch has exceeded the TAC in 5 of the last 6 years and this is a concern to Option4. Trawling is the main method of taking school shark in Area 2. Option4 considers that the Minister cannot allow the increase to proceed if it threatens to overfish adult school shark.
- Option4 believes that some of the quota holders target fish for snapper in SNA 2 leaving insufficient quota to cover unavoidable bycatch of snapper by fishers with unbalanced quota portfolios. Option4 considers that the reason for the SNA 2 overcatch is the supposed reporting of snapper as a “by-catch” in the tarakihi and red gurnard trawl fisheries. Option4 notes that there are no observers on SNA 2 trawlers, and that the SNA 2 port price is higher than the TAR 2 or GUR 2 prices. Option4 believes that trawlers can closely target their catch and when they want to catch tarakihi, they actually mainly catch tarakihi with little snapper bycatch. At the last meeting of the Napier Fisheries Liaison Committee, they claim that highly experienced commercial fishers said that some vessels target snapper in SNA 2.

- Option4 states that the problem is that some large SNA 2 quota holders target snapper when fishing their SNA 2 quota, but do not make this quota available to other fishers. Option4 considers that the solution is to not allow any target fishing for SNA 2. They see the problem with the MFish solution is that the large quota holders will target more snapper, while the quota portfolios will remain unbalanced for smaller fishers. The TACC will be exceeded again as the fishers who actually need the quota to cover genuine by-catch will, at best, get very little of the new quota, and some will get none.
- Option4 says that Māori and recreational catches have been suppressed by historic commercial overfishing in SNA 2 since 1970. Option4 considers that the proposal does not adequately consider the effect on the quality of customary and recreational fishing. It is claimed that the 43% increase will reduce the size of fish available and decrease recreational catch rates. Option4 considers that this is not consistent with the Ministers priority which is “to enhance the value and enjoyment of New Zealand’s fisheries for all New Zealanders”.
- Option4 claims that MFish is being inconsistent between SNA 2 and PAU 5D regarding MFish’s “proportional share” policy. In PAU 5D, a fishery where there are sustainability concerns, Option4 notes that MFish is decreasing the recreational catch by considering reducing the recreational bag limits. However, the opposite is not being applied for the increase in the commercial catch for SNA 2.
- Option4 notes that the recreational sector accepted reduced bag limits, increased size limits, and a reduction in the number of hooks per longline from 50 to 25 to conserve SNA 2.
- Option4 considers that the proposed 40 tonne recreational allowance in SNA 2 is based on out of date and flawed research. Option4 believes that the current recreational catch is likely to be around 355 tonnes based on the 2000 survey, but believes that this estimate is not necessarily indicative of increasing recreational catches, rather it is mainly due to inadequate or flawed past research. They consider that the recreational catch was likely to have been much higher than 40 tonnes in 1986, possibly as high as 300 tonnes.
- Option4 notes that the Recreational Working Group has accepted data from pilot surveys for the 1999–2000 survey that show that fisher prevalence is close to 50%, not the 14% as estimated in 1995–96. They consider that MFish is not able to support the claim that the 1996 harvest estimates are “the best available information” as required by section 10 of the Fisheries Act. Option4 believes that the Minister is aware of this issue, but considers that the 80 tonne recreational allowance proposed by the Minister is inadequate, and the allowance should be set at the more realistic level from the 2000 survey.
- Option4 base their estimate of 355 tonnes on the following information. The preliminary estimate from the 2000 survey for SNA 2 was 277,000 snapper. Assuming an average weight of 1.282 kg per snapper (as used in the 1996 survey), then the recreational catch would be 355 tonnes. They consider it important that the Minister base his decision on this information.

MFish Discussion

Stocks below B_{MSY}

- While no TAC has yet been set in this fishery, the TACC has already been increased on one occasion (for the 1992–93 fishing year) during the rebuild period. The new “base case” stock assessment indicates that SNA 2 has now further rebuilt from around 50% below B_{MSY} in the early 1980s to the current position which is considered to be around 10% below B_{MSY} . The model predicts that at a catch level of 436 tonnes (incorporating assumptions on non-commercial catch) the stock will increase in size to be 20% above B_{MSY} by 2006. As noted in the MFish IPP, the stock model for SNA 2 is largely based on four years of catch at age data from shed sampling. There are no indices of biomass available for the SNA 2 model, and MFish agrees with submitters that the model estimates must be treated with caution.
- Section 13 of the Fisheries Act outlines the various factors you are required to have regard to in order to set the TAC for SNA 2. The section 13(2)(b) considerations apply to stocks that are below B_{MSY} . These involve consideration of the interdependence of stocks, and environmental conditions affecting the stock. A potential interdependence issue identified in submissions is discussed below. MFish is not aware of any particular environmental conditions that may affect the continuation of the SNA 2 rebuild. SNA 2 is near B_{MSY} and, even if recent catch levels are retained, is predicted to rebuild over the next 3-4 years to a level at or above B_{MSY} .
- MFish notes that you are able to increase a TAC for a stock that is judged to be below the target stock level (usually referred to as B_{MSY}), as long as any TAC set or varied allows the stock to move to a level that is at or above B_{MSY} . As Minister you have discretion as to the rate at which the stock moves towards the target stock level, and s 13(3) of the Act clarifies that you are able to have regard to social, cultural and economic factors that you consider to be relevant.
- MFish notes that there is little in the way of quantifiable social, cultural or economic considerations covered in submissions. The IPP noted that the economic consequences of retaining the existing TACC can be in part measured by the reduced revenue (when compared to recent years) gained from the SNA 2 fishery, as well as from an undercatch of associated target fisheries. From a social and cultural perspective, the non-commercial aspects of the fishery will continue to operate as they have done under the proposal set out in the IPP. Therefore, on balance MFish considers the current rate of rebuild to be appropriate for the SNA 2 stock.

Interdependence of stocks

- Option 4 are concerned about the effect that an increase in the SNA 2 TACC may have on school shark as an associated or dependent species. “Associated or dependent species” is defined by the Act as any non-harvested species taken or otherwise affected by taking of any harvested species. This definition therefore applies to organisms such as marine mammals and seabirds that are non-harvested. The definition does not apply to school shark because this species is harvested, and is targeted by some fisheries around New Zealand.

- However, under s 13 you are required to have regard to the interdependence of stocks when setting a TAC. This requirement could therefore apply to the situation outlined in submissions for school shark. Much of the SCH 2 catch is taken as a bycatch of trawl fisheries. MFish also recognises that shark species such as school shark may be more prone to overfishing due to their reproductive biology, which is markedly different to most other fish species. Female sharks release their young alive, and may only bear 10-20 pups per year. This is in contrast to an average sized female snapper that may release 3-4 million eggs per spawning season, although the viability and survival of fertilised eggs is highly variable.
- Nonetheless, there is no stock assessment information available for SCH2 indicating that current catches are not sustainable. Similarly, MFish is not aware of any anecdotal information from any sector suggesting that SCH2 is being overfished. MFish notes that the new catch balancing system is encouraging fishers to manage their fishing to the amount of ACE that each fisher holds individually.
- The SCH2 catch after nine months of the current fishing year is at 133 tonnes. By pro-ration based on the catch since 1990-91, the commercial SCH2 catch is predicted to close at 169 tonnes, which is less than the SCH2 TACC at 199 tonnes. Given these considerations, MFish does not consider it necessary to adjust any of the TACs of the interdependent stocks that may be interacting with school shark at this time.

Commercial fishery

- MFish notes that the proposed TACC increase to 360 tonnes is close to the level of the commercial catch in the past two fishing years at 360 and 391 tonnes respectively. MFish notes that recent levels of catch have exceeded the TACC in the SNA 2, however the IPP establishes a case that the catch in excess of the TACC is sustainable.
- The catch balancing framework recently set up under the Fisheries Act provides new incentives to encourage fishers to cover all their catch of QMS fishstocks with Annual Catch Entitlement (ACE). Overfishing of ACE by individual fishers will be controlled by graduated administrative incentives based largely around the payment of deemed values. Initially, fishers will be sent an interim deemed value as a “reminder” to obtain ACE to cover their overcatch during the fishing year. Annual deemed values are the main incentive for fishers to cover all their catch with ACE. For most stocks, the annual deemed value rate increases as the amount of catch in excess of a fisher’s ACE increases. Finally, if the annual or deemed values are not paid, a fisher’s fishing permit will be suspended which will prevent the fisher from fishing commercially.
- The new catch balancing system was introduced at the start of the current fishing year on 1 October 2001. There is already some indication that the new system is working effectively. The SNA 2 catch up until the end of June was 204 tonnes (Table 1). For the two previous fishing years, the catch was 276 and 293 tonnes respectively at the end of June. The SNA 2 catch is predicted to reach 262 tonnes based on pro-ration of the catch since 1989-90. The predicted catch is slightly

above the current TACC set at 252 tonnes. Other stocks (such as SCH 2) are also showing signs that the new catch balancing system is significantly reducing the level of commercial overcatch.

Table 1: Predicted catch for SNA 2, TAR 2, and GUR 2 for the 2001- 02 fishing year based on comparing the average monthly catch from 1989-2001 with the monthly catch for the first nine months in the 2001- 02 fishing year. The catch for 1989- 2001 is from the Quota Management Returns (QMRs) and the catch for 2001- 02 is from the Monthly Harvest Returns (MHRs).

	SNA 2	SNA 2	TAR 2	TAR 2	GUR 2	GUR 2
	1989-2001	2001-02	1990-2001	2001-02	1990-2001	2001-02
October	29.9	24.7	176.7	138.4	54.7	66.9
November	35.0	30.4	186.2	145.8	61.1	80.1
December	25.7	22.1	118.1	73.1	48.6	63.7
January	28.0	14.5	100.7	100.0	41.6	40.5
February	27.5	17.4	141.6	91.8	40.2	47.1
March	31.7	27.3	180.8	119.4	44.5	60.1
April	30.2	23.8	129.1	144.8	41.0	43.2
May	33.5	24.2	132.7	153.3	43.1	39.8
June	21.1	19.4	115.3	205.8	34.2	41.9
July	24.8	-	133.3	-	43.0	-
August	19.0	-	103.0	-	47.4	-
September	31.4	-	129.6	-	57.2	-
Total catch (Oct – Sep)	338		1,647		557	
Oct – June catch	263	204	1,281	1,173	409	483
Predicted for 2001-02		262		1,507		658

- One of the concerns that some fishers had about the new catch balancing system was that in seeking to balance their catch for the bycatch fishery, commercial fishers may not catch all of the available yield for the main target fisheries. For SNA 2, the main target fisheries are TAR 2 and GUR 2 – information on the relationship between these fisheries was provided in the IPP. The commercial catch in both of these associated fisheries for the first nine months of the current fishing year suggests that the final catch will be close to the TACC (Table 1).
- For TAR 2, 1173 tonnes of commercial landings were reported up until the end of June. This compares to the average catch up until the end of June of 1281 tonnes based on catches since 1990–91. By pro-rata, it is predicted that TAR 2 will close at 1507 tonnes, which is within 10% of the TACC (1633 tonnes). While the TAR 2 TACC may actually yet be caught because the catch in the last three months has been above average, it is possible that the lack of SNA 2 ACE may be constraining the TAR 2 catch to below the TACC. However there is insufficient information available to MFish at this time to establish whether there is a clear link between fishery performances.
- For GUR 2, the predicted catch is 658 tonnes, which again is within 10% of the TACC (725 tonnes). The predicted GUR 2 catch would actually be the second largest commercial GUR 2 catch since the inception of the QMS, and hence it seems unlikely that the lack of SNA 2 ACE is a constraint to the GUR 2 harvest.
- This information suggests that fishers are adapting to the incentives created by the new catch balancing system. It is conceivable that fishers are now more

definitively targeting either TAR 2 or GUR 2, while taking steps to minimise their snapper bycatch to the amount of ACE held.

Recreational Fishery

- As noted in the MFish IPP, there is limited information on the recreational fishery in SNA 2, although MFish acknowledges it is a highly valued fishery for that sector. Recreational fishing is essentially managed through a bag limit of 10 snapper per person per day, in association with a range of method restrictions. However the actual level of recreational catch is not well established.
- Contrary to views set out in submissions, the bag limit in SNA 2 has not been adjusted since regional limits were set in 1993 at levels that represented a reasonable days catch. In SNA 2 and SNA 7 this was set at 10, while in SNA 1 this was initially set at 15 to reflect the greater productivity of that stock. Since that time the limit in SNA 1 has been partly adjusted to assist with a stock rebuild, and in the Marlborough Sounds section of SNA 7 recreational fishers successfully requested a reduction to improve catch rates in the fishery.
- The national regulations governing amateur longlines were altered in the mid 1990s, with the principal change being the reduction from 50 hooks to 25 hooks per longline. The minimum size limit for snapper for amateur fishers was also increased from 25 cm to a length of 27 cm. These changes were primarily introduced to constrain the recreational snapper catch in SNA 1 for sustainability purposes, however the longline changes were applied nationwide and the size limit change across the North Island (but not to SNA 7).
- In your letter to consulted parties expressing your initial view, you requested that MFish investigates the potential to re-run the SNA 2 stock assessment model with a higher recreational allowance – 80-100 tonnes. The stock assessment model was not able to be re-run with this higher estimate of catch incorporated because it would have had a substantive effect on the assumptions underpinning the model. The Snapper Working Group were unable to meet within the consultative period to revisit the mix of assumptions and make a determination as to whether the model would remain viable. Hence MFish is unable to provide further advice on the impact of the model output of a higher recreational catch at this time.
- In particular, the implications of adding in the additional catch for recreational fishers to the total removals under the model (ie increased to 476-496 tonnes) cannot be adequately evaluated at this time. There is insufficient information to ascertain whether recreational catch of 80-100 tonnes should be treated as historical catch under the model, or as recent catch in the fishery.
- In setting out your initial view, you also indicated that you would take into account the results of the 2000 recreational survey if new information became available prior to the time of your final decision.
- The background to this issue is that the preliminary results presented to the Recreational Working Group in May 2001 provided recreational catch tonnage estimates that were nearly three times larger for most species compared to

estimates obtained in the 1990s. The 2000 survey¹ was based on the telephone-diary methodology that had been used for two similar surveys in the 1990s.

- MFish notes that parameters such as the demographic data on fishers, fishing trip details, and average size of fish taken by area are generally consistent between the 1996 and 2000 surveys. However, a near threefold difference between the survey estimates appears largely attributable to the estimated proportion of people in the New Zealand population who are reported to have fished (the “fishing participation” rate) in the year before the respective surveys. The population’s fishing participation rate for the 1996 survey was estimated at 9.7%, compared to an estimate of 31% for the 2000 survey. Further work is required before the high participation rate for the 2000 survey can be validated, and it is conceivable that the process required to do that may have implications for the participation rate determined as part of the 1996 survey.
- Given the marked difference between the survey results, MFish has engaged an international expert to audit and review the survey methodology for the 1996 and 2000 surveys to assess the reliability of this information. If the review indicates that the catch estimates from the 2000 survey are reliable or need to be modified by some scaling factor, then the next step would be for the Snapper Working Group to use the recreational catch estimates in the SNA 2 model. MFish expects to have the results from the audit review on the 2000 survey available within the next 2-3 months. This would allow the Snapper Working Group to fully consider any revised catch estimates, and for these to be included in an updated stock assessment.
- Even though increased restrictions (discussed above) were placed on the amateur fishery in the 1990s, it is possible that the recreational catch has increased for SNA 2 in recent years. The primary factor is that as the stock rebuilds and the number of snapper increases, recreational (and commercial) catch rates should improve and it will become easier for people to catch snapper. Other factors that may be contributing to a possibly increasing recreational catch are more people owning recreational fishing boats, larger boats and more powerful engines that can fish further from launching sites, and greater use of technology (eg. fishfinders, depth sounders, position fixing devices such as GPS). These factors give weight to the assertion that recreational catch may have increased beyond the estimates of 40 tonnes obtained from the 1992–93 and 1996 telephone diaries. The information from the 2000 telephone-diary survey, while highly uncertain and as yet not validated, gives further weight to that conclusion.

Historical issues

- MFish is not aware of any quantitative information to assess the claim from the recreational sector that recreational catches and catch rates have been “suppressed” in SNA 2 since 1970. However, the report from the 2002 Fishery Assessment Plenary in describing the ‘base case’ for SNA 2 sets out a change in biomass trend from 1930 to 2002 which indicates that the SNA 2 stock size declined from 1960 to 1980. In 1960, the model estimates that the stock was around 12 000 tonnes (about 130% above B_{MSY}), whereas in 1980 the stock was

¹ The timespan for the 2000 survey was from 1 December 1999 to 30 November 2000.

near its lowest level at 2 000 tonnes (about 56% below B_{MSY}). It is likely that most of the decline in biomass was primarily due to the large commercial catch in SNA 2 during the 1960s and 1970s which averaged 690 tonnes per year. There are no estimates of the non-commercial catch over that period.

- The high level of initial catch (taken by the commercial sector) during the “fish down” phase is typical of how most fisheries are developed. The initial large catches are not sustainable in the long term, but can be allowed during the “fish down” phase as it helps to move the stock to a more productive population comprised of smaller faster growing fish. In general, for many fish species with a similar biology to snapper, B_{MSY} is thought to be around 25% of the virgin biomass. The “fish down” phase can also be an important contribution to knowledge of the fishery as it provides a way to better understand the dynamics of a particular fish stock. While the desired stock target level for SNA 2 has not yet been set, the IPP signalled an approach that would allow the stock to continue to rebuild over the next six years, during which time the stock is expected to complete its rebuild to B_{MSY} .
- One of the implications of the fish down phase is that catch rates and average fish size tend to decline as the stock is fished to a lower level. Therefore, it is likely that recreational (and commercial) catch rates and snapper size in SNA 2 have declined since the 1970s. However, as the fishery rebuilds, catch rates and snapper size should improve for both the commercial and recreational sectors. Certainly, MFish is aware that many commercial fishers in SNA 2 have reported a steady increase in snapper trawling catch rates through the 1990s. In part, this appears to have contributed to the overcatch of the TACC in the fishery.

Allocation issues

- The inability to re-run the fishery assessment model for SNA 2 means that the model parameters (of 436 tonnes of catch plus an additional estimate of customary catch not otherwise considered by the model) provide the basis for establishing a TAC for this fishery. It is within these parameters that the allocation issues can be considered.
- A substantive element of the submissions on the SNA 2 proposal as set out in the MFish IPP concerns the allocation of the available catch (ie, the way that the TAC is apportioned between sectors). In general the commercial sector support the proposal in the IPP on the basis that the quantities can be tracked back to the modelling exercise undertaken by the Snapper Working Group and that under the model, the catch is shown to be sustainable. A local surfcasting association also supports this position.
- On the other hand, nationally orientated recreational representatives consider that the additional catch that the model suggests is available for harvest should be incorporated into the recreational allowance. Those submissions also suggest that the allowance set should be even greater, to reflect a recreational catch as high as 300 tonnes. It is unclear from the submissions whether this increased allowance is expected to result in a commensurate reduction in TACC that would be required to fit within the parameters modelled under the ‘base case’. The basis for this position as advanced in submissions is that it would be a more appropriate

breakdown of the TAC to what is considered to be an imbalance outlined in the MFish position in the IPP.

- After considering submissions, MFish agrees that the combination of factors that suggest the stock size has been increasing in size, together with the increased estimates of recreational catch from the preliminary 2000 telephone-diary survey results, suggest that the recreational catch has in all likelihood increased since the current TACC was set for the 1992–93 fishing year. However, the uncertainty inherent in the available information at this time means that the extent of this increase cannot be readily quantified.

Recreational allowance

- MFish notes that the IPP sets out a case for allocating the catch that has been harvested by the commercial sector over and above the TACC in recent years to the commercial sector. However inherent in that proposal is for the recreational catch to continue under the regulatory framework established in 1993, that is an ability to take up to 10 snapper per person per day from the SNA 2 fishery. While the Fisheries Act provides a mechanism for managing catch under the TACC to the level of the TACC (and provides for deemed values to be paid if catch exceeds the TACC), there is no explicit mechanism for managing the recreational catch to the particular quantity set as an allowance. Hence, irrespective of the decision taken at this time, recreational fishing will continue to function as it has previously. It is also likely that the recreational catch rates will continue to improve as the stock rebuilds as is predicted by the model.
- The MFish IPP proposes using the most recent estimate of recreational catch (40 tonnes) that has been through a scientific review process as the basis for determining the allowance for recreational fishing. The basis for this allowance relates to estimates of recreational catch for the 1992–93 and 1996 years. As noted, the 1996 (and 2000) estimates of recreational catch require further review but indications are that the best estimates of recreational catch will increase. MFish considers that this trend is a relevant consideration for you to take into account in determining the recreational allowance.
- Given the ceiling on the estimate of sustainable harvest provided by the Working Group, and the likelihood of an increased recreational catch over the past 10 years, there is a case to be made for equally dispersing the benefits of the rebuild to the recreational and commercial sectors. MFish notes that in making this decision in the allowance setting process, there is no contingent proposal to adjust regulatory controls on the recreational sector at this time. Individual recreational fishers will continue to be subject to existing daily limits (10 snapper per person per day) and method restrictions.
- Submissions from the recreational representatives have indicated that you may be hindered from revisiting the allowances and TACC at a later date if validated estimates of recreational catch from the 2000 telephone-diary survey are higher than allowances made as part of the current TAC setting process. MFish does not agree with this view and note that you have the authority under the Act to alter allowances and TACCs prior to a fishing year commencing following a consultative process.

- MFish acknowledges that the setting of allowances is not constrained by the Fisheries Act to follow a particular approach. Indeed, in some fisheries the recreational allowances have been set at levels that allow for growth in the recreational catch as the fishery rebuilds in advance of real time estimates of recreational catch being available (as in some CRA fisheries) and at nominal levels (SCA 7). However, these cases represent fisheries where there is a high level of inter-sector agreement and stakeholder recommendations have been ratified under the Act, rather than developed by MFish. MFish notes that there is no such agreement in the SNA 2 fishery.
- Given the lack of an explicit approach for allowance setting, MFish acknowledges that you have discretion over the determination of the level of the recreational fishing allowance. Key reasons for the discretion include;
 - Lack of explicit application of the framework for managing recreational fishing to constraining removals to the level of allowance set – ie the current level of recreational catch will continue to be provided for unless daily bag limits are altered
 - Imprecision over the estimate of recreational catch, and work being undertaken to review recent estimates
 - Likely increase in recreational catch since 1996 during which time the fishery has been rebuilding and participation rates may have increased
 - The fishery being a highly valued shared fishery with competing claims for access to the resource amidst an absence of complete social, cultural and economic analysis.
- The submission from Option4 also considered there was an inconsistency between SNA 2 and PAU 5D in how the recreational allowance is made. There is a claim in the submission that this represented an inconsistent approach to “proportionality”. The background of the reference to “proportionality” referred to in the submission relates the “Soundings” process in 2001 covering options to reform the overall management of the recreational fishery. One of the proposed management options was that the TACC and recreational allowance should be changed in proportion to each other as the biomass for a particular stock changes.
- In the case of PAU 5D referred to in submissions, MFish has proposed to reduce the TACC from the current level because this stock is below B_{MSY} and is projected to continue declining at current catch levels. MFish has not proposed any explicit reduction in the bag limit or the amateur allowance for PAU 5D in that instance because the two fisheries are largely separated spatially. The areas supporting the recreational fishery are not considered to be over-fished. However, MFish has suggested that management options (eg. a lower paua bag limit, closed seasons) may be required in the future for the recreational fishery to ensure that the recreational catch does not increase above the current level.

Customary allowance

- As noted in the MFish IPP, the SNA 2 model did not incorporate an estimate of customary catch as no quantitative information was available. In developing the TAC/TACC option in the IPP, MFish recommended an allowance that was additional to the estimates of catch assumed under the model.
- MFish notes that, as with the case for the recreational allowance, there is no explicit framework under the Fisheries Act that provides for customary harvest to be constrained to the level of the customary allowance. Rather, MFish considers that the allowance be set on the best available information and in the absence of catch information from the customary sector, the allowance for customary fishing should be referenced to the recreational catch (which may itself include some customary catch that falls within recreational bag limits).
- In the IPP it was proposed that the customary allowance should be set at 20 tonnes. This was on the basis that one of the MFish guidelines is that the customary allowance should in general be set at half the recreational allowance. However, for the snapper fisheries, MFish has now reconsidered that view in the context of allowance setting decisions that have been made in other snapper fisheries. For the three other main snapper fisheries (SNA 1, SNA 7, SNA 8), the allowance provided for customary fishing has been 13%, 17.7%, and 13.8% respectively. Accordingly, a customary allowance of 15% of the recreational allowance may be more applicable to SNA 2.

Other sources of mortality

- In relation to the allowance for other sources of fishing related mortality, MFish notes that the IPP rounded estimated incidental fishing mortality within SNA 2 up to 40 tonnes. The SNA 2 model as reported in the report from the fishery assessment plenary assumed such mortality to be 10% of commercial catch levels (36 tonnes). MFish considers that the rounding in the IPP is unnecessary and that this allowance can be set at 10% of what is assigned to the commercial sector.

Social, Cultural and Economic Factors

Submissions

- Option4 believes that the proposed SNA 2 TACC increase will have significant social and economic effects, as there are many sustenance fishers and Māori customary fishers that rely on snapper as a regular food source. Option4 considers that compensation should be paid to recreational fishers for a “steadily worsening recreational experience”.

MFish Discussion

- MFish acknowledges there is a lack of information on the social, cultural and economic consequences of allocating the TAC other than on the basis of the best estimates of current catch. Where such information exists it is documented in the IPP or in this final advice paper.

- MFish does not accept Option4's comments about the fishery deteriorating as the model indicates that the fishery is rebuilding and MFish has received comments from local fishers that recreational catch rates have improved.
- The Act also does not require compensation to be paid for other sorts of fisheries management issues, such as reallocation decisions. Instead, if fishers consider that they may have a case for compensation, then they could present their situation to the Minister or argue their case in the Courts. MFish considers there is no basis for a compensation claim for SNA 2 at this time because no reallocation has been considered.

Options for setting the TAC, TACC, and allowances

- There is no TAC set for SNA 2. Section 13(10) requires that whenever a TACC for a fishstock is reviewed, a TAC must also be set for the fishstock concerned. MFish notes that there is substantive evidence to suggest that additional sustainable yield can be utilised in this fishery and considers that this yield should be allocated. MFish considers that in light of your preliminary view and submissions received on the IPP there are two options for you to consider regarding setting the TAC, TACC, and allowances.
- Both options presented are centred on the base case stock assessment, which indicates that SNA 2 has rebuilt considerably from around 50% below B_{MSY} in the early 1980s to the current position at around 10% below B_{MSY} . The model predicts that at a catch level of 436 tonnes the stock will increase in size to be 20% above B_{MSY} by 2006. Based on this information, MFish considers that a TAC set at 436 tonnes (plus an allowance for customary fishing not otherwise built into the 436 tonnes) should enable SNA 2 to be restored to a level at or above the level that can produce the MSY in the near future.
- The two options outlined do not include a potential option provided under the Act to set a TAC and retain the existing TACC. As outlined in this advice, MFish considers the rate of rebuild being achieved in this fishery under recent catch levels to be appropriate to the circumstances of the fishery. Hence there is a strong case for making the additional sustainable yield available for harvest at this time.

Option one: Set the TAC at 445 tonnes

- Under this option, the TAC would be set at 445 tonnes, with allowances set at 9 tonnes for customary Māori fishing interests, 60 tonnes for recreational fishing interests, and 34 tonnes for other sources of fishing-related mortality, and the TACC increased from 252 tonnes to 342 tonnes.
- Under this option, TAC would be set at a level that was consistent with the 436 tonnes modelled by the working group, with an additional allowance for customary fishing (9 tonnes) that was not otherwise incorporated into the model.
- The rationale for allocating the TAC is based on a 49.3 % increase of the combined TACC and estimated recreational catch that applied to the 1992–93 fishing year (in combination, 292 tonnes to 436 tonnes). At that time the TACC

was set at 252 tonnes and the recreational catch was estimated from the first telephone-diary survey to be 40 tonnes.

- The allowance for customary catch of 9 tonnes is set at 15% of the recreational allowance after the scaling (60 tonnes), and the allowance for mortality caused by fishing of 34 tonnes is set at 11% of what the TACC would otherwise have been (376 tonnes) after non-commercial allowances are provided for. This results in an allowance that is 10% of the consequential TACC (342 tonnes).
- Under this option recreational fishing would continue under existing arrangements that provide for a reasonable days catch of 10 snapper person per day, provided method restrictions were complied with. Customary fishing would continue in accordance with the current regulatory frameworks. And the TACC would increase by 35.7%, after allowing for additional mortality caused by commercial fishing.

Option two: Set the TAC at 450 tonnes

- In your preliminary view you indicated your interest in providing for a higher allowance for the recreational sector, possibly in the 80-100 tonne range. In outlining your view you indicated that recreational catches may well have increased since 1996 when the estimated catch was 40 tonnes due to the benefits of a rebuild and increased participation. MFish notes that you have sufficient discretion to set an allowance at that level.
- Under this option, the TAC would be set at 450 tonnes, with allowances set at 14 tonnes for customary Māori fishing interests, 90 tonnes for recreational fishing interests, 31 tonnes for other sources of fishing-related mortality, and the TACC increased by 25% to 315 tonnes.

Compliance Issues

- No additional compliance issues were raised in submissions.

Other Management Issues

Submissions

- Option4 are concerned that the SNA2 trawl fishery still uses 100 mm mesh. It is considered that the use of 100 mm mesh and pair trawling are the two main factors that severely depleted all the snapper fisheries in the past. The problem with 100 mm mesh is that it inevitably tends to catch small fish less than the optimal size for Yield Per Recruit (YPR), which for snapper is around 33 cm in length. Option4 believes the mesh size used in this fishery needs to be revisited as increasing the mesh size will lead to a higher YPR.
- Option4 note that in the late 1990s MFish required trawlers in SNA1 and SNA8 to have to use 125 mm mesh, albeit outside the 100-metre depth mark. Option4 heard all sorts of excuses from the trawl fishers that they would not be able to catch the more elongated fish species like tarakihi, gurnard, and gemfish. Option4 considers that rather than a knee-jerk management response at increasing the SNA2 TACC, MFish should do some “real fisheries management” and find out

what the optimal YPR is also for these other species and regulate the methods to manage towards this goal.

Discussion

- MFish notes that the optimal size of first capture from previous YPR modelling for snapper in SNA 1 and 8 is approximately 33 cm. A regulation was introduced in the late 1990s requiring all trawlers to use 125 mm mesh inside the 100-metre depth contour line in the Auckland Fishery Management Area – this relates to all of SNA 1, and the main snapper fishing areas in SNA 8. However, MFish notes that while there can be some advantages to increasing trawl mesh size, there can also be some economic costs with mesh size changes as it impacts on associated fisheries.
- MFish also notes that there has been no consultation with other interested parties on a proposal to change the trawl mesh size.

Conclusion

- A new stock assessment has recently been completed for SNA 2. The assessment model is largely based on four years of catch at age data from shed sampling. The ‘base case’ for the assessment indicates that the stock has rebuilt strongly since the 1980s, is currently estimated to be at around 10% below B_{MSY} , and is predicted to be at or above B_{MSY} under most catch scenarios in the next 3-5 years. The report from the Fishery Assessment Plenary notes that as there are no indices of biomass available, the stock assessment model estimates must be treated with caution.
- Snapper in QMA 2 are largely taken as a bycatch of the larger target trawl fisheries for tarakihi and red gurnard. Partly as a consequence of these target fisheries, the commercial fleet has routinely exceeded the current SNA 2 TACC of 252 tonnes in recent years. The model developed for this fishery suggests that the catch overrun is sustainable, and there is a case for having it explicitly included within a TAC. In determining to review the TACC in this fishery that has not yet had a TAC set, the Act requires you to set a TAC.
- For the current year, the new catch balancing system appears to have been effective in preventing the large historical overcatch of the SNA 2 TACC. The commercial SNA 2 catch is predicted to not greatly exceed the current TACC based on the total catch up until the end of June. The new catch balancing system is also unlikely to have significantly affected the target fishery for GUR 2, but may be having an impact on TAR 2 landings (which are lower than in previous years).
- Under the current management framework, if the commercial sector is to benefit from increased yield, it will need to be included within the TACC. The non-commercial sector will continue to benefit from increased catch rates and this will probably result in an increase in overall catch. The level of any increased catch is a consideration for the allowance setting component of the TACC setting process.

- There is a high level of uncertainty regarding the recreational catch in general, and the recreational SNA 2 catch in particular. The 1996 survey estimated the recreational SNA 2 catch to be 40 tonnes, whereas the preliminary catch estimate for SNA 2 from the 2000 survey is much higher. The difference between the surveys appears largely attributable to the estimates of how many people in the population are likely to have fished in a year. The population's fishing participation rate for the 1996 survey was estimated at 9.7%, compared to an estimate of 31% for the 2000 survey.
- Given the marked difference between the survey results, MFish has engaged an international expert to audit the survey methodology for the 1996 and 2000 surveys to assess the reliability of this information. MFish expects to have the results from the audit review available within the next 2-3 months. This would allow the Snapper Working Group to fully consider any revised catch estimates, and potentially for these to be included in a revised stock assessment in 2003.
- There is no TAC set for SNA 2. The Fisheries Act requires that whenever a TACC for a fishstock is reviewed that a TAC must also be set for the fishstock concerned. MFish has recommended two options for you to consider regarding setting the TAC, TACC, and allowances for SNA 2. Both options are centred on the base case stock assessment, which indicates that SNA 2 has rebuilt considerably and that there is extra yield available from the fishery. The recommendations for each option are made in accordance with the requirements of sections 13, 20 and 21 of the Fisheries Act.
- Under **option one**, the TAC would be set at 445 tonnes, with allowances set at 9 tonnes for customary Māori fishing interests, 60 tonnes for recreational fishing interests, and 34 tonnes for other sources of fishing-related mortality. The consequential TACC would be 342 tonnes, an increase of 90 tonnes over the existing TACC. Option one seeks to equally share the benefits of the rebuild across sectors.
- **Option two** provides you with a scenario that is consistent with your initial view on the MFish IPP. Under this option, the TAC would be set at 450 tonnes, with allowances set at 14 tonnes for customary Māori fishing interests, 90 tonnes for recreational fishing interests, 31 tonnes for other sources of fishing-related mortality, and a TACC of 315 tonnes, an increase of 63 tonnes over the existing TACC. Option two provides for the mid point of your suggested allowance for recreational fishers to be the driver for the allocation of the TAC.
- MFish notes that the model underpinning the updated stock assessment did not explicitly consider a range of estimates of recreational catch, and hence further modelling work will be required when improved estimates of recreational catch become available. Accordingly, MFish favours option one at this time on the basis that it seeks to uniformly distribute the benefits of the rebuild in the fishery to date.

Final Recommendations

- MFish recommends that you:

EITHER

- Option one (preferred MFish option)
agree to set a TAC for SNA 2 of 445 tonnes. Within this TAC:
- set a customary allowance of 9 tonnes;
- set a recreational allowance of 60 tonnes;
- set an allowance of 34 tonnes for other fishing mortality;
- increase the TACC from 252 to 342 tonnes;

OR

- Option two
agree to set a TAC for SNA 2 of 450 tonnes. Within this TAC:
- set a customary allowance of 14 tonnes;
- set a recreational allowance of 90 tonnes;
- set an allowance of 31 tonnes for other fishing mortality;
- increase the TACC from 252 to 315 tonnes.

