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23 August 2013

New Zealand Sport Fishing Council submission on the review of sustainability and other management controls for Snapper 1 (SNA 1)

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Summary of recommendations

1. The New Zealand Sport Fishing Council recommends that for the Snapper 1 fishery for the fishing year commencing on 1 October 2013 the Minister:
 - a. Agrees to increase the TAC by 550 tonnes, to 8100 t and within that TAC:
 - i. Set aside 50 t to allow for Maori customary interests
 - ii. Set aside 3100 t to allow for recreational interests
 - iii. Set aside 450 t to allow for fishing related mortality
 - iv. Set a TACC of 4500 t.
2. The New Zealand Sport Fishing Council recommends the Minister clearly states that the public is not part of the Quota Management System and thus an allocation is an inappropriate management tool when compared to the statutory requirement to set aside an allowance for recreational and Maori customary interests and other, fishing related mortality.
3. The New Zealand Sport Fishing Council recommends the Minister directs the Ministry for Primary Industries to focus on reducing the wastage and discards related to all forms of fishing.
4. The New Zealand Sport Fishing Council recommends that all trawl methods are immediately prohibited from near-shore nursery areas and areas of fragile benthic features.
5. The New Zealand Sport Fishing Council recommends the Minister takes into account the effects and costs of any management changes to fishing related businesses, including the impact on our coastal communities.

Introduction

6. The New Zealand Sport Fishing Council (NZSFC) appreciates the opportunity to submit to the Ministry of Primary Industries (MPI) on proposals to review of sustainability and other management controls for Snapper 1. MPI released their proposals on 12 July with submissions due 23 August 2013.
7. New Zealand Sport Fishing Council representatives are available to discuss this submission in more detail if required. We look forward to positive outcomes from this review and would like to be kept informed of future developments. Our contact is Roz Nelson, secretary@nzsportfishing.org.nz.
8. The New Zealand Sport Fishing Council is a National Sports Organisation with over 32,000 affiliated members from 54 clubs nationwide. Our members have a wide range of interests in amateur fishing, the marine environment and ocean recreation.
9. The New Zealand Sport Fishing Council is committed to ensuring that sustainability measures and management controls in Snapper 1 are designed and implemented to achieve the purpose and principles of the Fisheries Act 1996 (the Act).
10. The New Zealand Sport Fishing Council supports and advocates for a variety of coastal and inland community's environmental, customary and recreational interests in Snapper 1. Snapper is an iconic species recreationally and a taonga [treasure] for tangata whenua.
11. The New Zealand Sport Fishing Council has launched a new initiative called LegaSea to generate support for the ongoing effort to protect and enhance the public's access to abundant fisheries in a healthy marine environment. www.legasea.co.nz. The intention is to broaden NZSFC involvement in marine management Advocacy, Research, Education and working Together on behalf of our members and LegaSea supporters.
12. The New Zealand Sport Fishing Council commissioned a report from a recreational planning consultant, Rob Greenaway, to better understand the nature of recreational fishing interests in general, and more specifically in regards to the Snapper 1 review. This groundbreaking report will assist the Minister, when exercising his statutory function, to make a full and reasonable allowance for those interests.

Executive Summary

13. The New Zealand Sport Fishing Council acknowledges this process is not about sustainability as Snapper 1 is rebuilding. **This process is about allocation.** The Snapper 1 Initial Position Paper (IPP) is focused on treating recreational interests as if they are shareholders in the Total Allowable Catch (TAC) and then allocating a fixed tonnage that the recreational sector must not exceed. This allocation would be based on a 16-year old allowance that was made using questionable data collected in 1995-96.
14. It is incorrect for MPI to claim that allocating catch non-proportionally is “precedential”. The Ministry’s proposals to achieve **proportional allocation of the TAC is being deliberately masked** by the matrix of bag limit reductions and minimum size limit increases.
15. In this proposal paper the Ministry for Primary Industries (**MPI**) **has, for the first time, altered the process of reviewing a fish stock.** The proposed new process would have the Minister set a Total Allowable Catch (TAC), then allocate the TAC and finally decide on a set of regulations to confine catch to the allocations. Prior to this year the process was to first set the TAC (s13), then determine what allowances have to be set aside for Maori customary non-commercial fishing interests, recreational interests and all other mortality caused by fishing, deduct these from the TAC (s21), and the balance comprised the TACC (s20).
16. The fundamental change in this new process means that **recreational interests are treated as if they were quota holders.** This is not made clear in the IPP, and the devotion to the proportional approach has blinded MPI to several important obligations.
17. The IPP has a focus on **maintaining catch at the proportions established in 1997**, and this proportional allocation approach is explicitly set out in the three options.
18. Inviting submissions on bag and size limit effectively **diverts attention from the new allocation edict** of the IPP, and encourages submissions on what regulations will constrain catch to a 1997 proportional allocation, without making any case for what contemporary allowance is reasonable.
19. **Public and Maori customary fishing are not part of the Quota Management System (QMS)** and have never been. The QMS is a system established to manage commercial fisheries.
20. During this review the NZSFC has become more concerned about the **significant gaps in available data.** MPI must increase the research priority for snapper.
21. Existing science identifies an **exploitation rate too high** to enable a long-term rebuild, and is critically high in the Bay of Plenty. This is not addressed in the IPP and the Minister must be advised of the risk associated with the collapsed state of the Bay of Plenty stock.
22. **A sudden spike in catches in a small area**, mainly the inner Hauraki Gulf, is no justification for attacking recreational entitlements throughout Snapper 1, where catches remain flat. In 2011-12 average snapper catch per person, per boat trip was 1.3 fish or 1.6kg in East Northland, 1.6 fish or 1.5kg in the Bay of Plenty and 3.2 fish or 3.3kg in the Hauraki Gulf. Moreover, 50% of fishers in East Northland and more than 50% in the Bay of Plenty return with zero catch.
23. The Ministry fails to make any estimate of the **effects and costs to the plethora of small businesses** that depend on, or are associated with, recreational fishing in Snapper 1. There is a duty to do so.
24. **The Minister must allow for recreational non-commercial fishing interests in 2013**, and not use an estimated harvest from 1997, which was based on poor survey data, as a proxy for contemporary recreational interests.
25. Any appetite MPI have for increasing or maintaining the rate of rebuild for Snapper 1 is best satisfied in the first instance by **reducing waste from juvenile mortality and dumping.** Decisive action on reducing trawl and seine mortality is needed now.

26. The notion of **issuing additional TACC on the grounds of reducing juvenile mortality is objectionable** in every regard. The cost of past, wanton destruction of juvenile fish by trawlers has been borne by all. Any benefits from using better trawling technology must be seen as righting a wrong, not earning new, exclusive catching rights. The mere proposition of crediting more TACC to commercial interests signals the depth of influence ITQ shareholders are exercising over MPI.
27. What's more, not only has the public had to endure 27 years (a generation) of inertia from industry to improve their husbandry, we now find the **taxpayer funding the trawl research to the tune of \$13,000,000** and then we will be denied access to the raw results because the intellectual property will belong to a subset of the commercial sector, the usual beneficiaries being Sanford and Sealord!
28. It is galling to see **so little innovation by industry** to address the shocking wastage that both they and MPI are well aware of, more so when affordable and effective innovations such as the T90 trawl research is so blatantly snubbed and the Target Hook ignored. It is ironic that these industry initiatives have been largely funded by the public and recreational fishing interests.
29. **Trawling has been identified as the major threat** to New Zealand marine habitats directly related to human activities. All trawl methods need to be immediately removed from near-shore nursery areas and areas of fragile benthic features.
30. **MPI does not evaluate the effect of bag reductions** on the values enjoyed by recreational interests, nor does it quantify the values of recreational marine fishing in any reliable manner. MPI needs to recognise the benefits that accrue to society via the allocation of access to marine fishing. Relying on a proportional allocation regime in SNA1 may result in significant inequalities and inefficiencies in resource allocation, as well as the denigration of the social and recreational value of one of the nation's prime forms of outdoor recreation. A paradigm shift may be required so we can derive maximise benefit at the national level and enable the full spectrum of values obtained from recreational marine fishing to be taken into account.
31. **The NZSFC submits a simple solution** is for the Minister to make a technical adjustment to the recreational allowance based on the best available information. The TAC must be increased by 550 tonnes (t), an allowance of 50 t set aside for Maori customary interests and an allowance of 3100 t be made for recreational interests.
32. The New Zealand Sport Fishing Council has a **policy to rebuild Snapper 1** to 40% of unfished biomass, to improve the yield per recruit by reducing the mortality of small fish. To achieve this there needs to be no TACC increase, and the Council will initiate research and consult with the public on what additional voluntary measures could be embraced to reduce fishing related mortality, to better look after the environment and to accelerate the rebuild. The NZSFC is open to engage with MPI and other interests on how this rebuild can be achieved within a reasonable timeframe.
33. The mortality of juvenile snapper killed and discarded in the process of commercial fishing needs to be managed. **No standards exist to manage juvenile mortality.** The default standard for legal sized fish is 10% of the TACC. This is expressed as a tonnage of fish. For juvenile mortality we recommend setting the standard by a more relevant measure, by numbers not weight.
34. Increasing the TACC results in an immediate **wealth transfer from incumbent shareholders to those who hold 28N rights.** The ramifications to existing shareholders of increasing the TACC are not explicitly made in the IPP. In respect of obligations when consulting this is an error in law.
35. For recreational interests **Snapper 1 is primarily a food fishery**; one of the main objectives of many recreational fishers is to catch sufficient for their needs. In near-shore or harbour areas some fishermen will be unable to land any fish over some of the proposed larger size limits. Effectively they will be denied access to sufficient snapper to fulfill their needs. The New Zealand Sport Fishing Council strongly objects to any changes that will deny Kiwi families a regular, healthy meal of fish simply to **protect quota owners' interests**, to increase export value and insulate MPI and the Minister from their lawful obligations.

Initial Position Paper summary

36. In the Initial Position Paper (IPP) MPI takes a view that the Snapper 1 (SNA1) stock in the short-term will continue to grow on the back of a series of better than average year classes, but in the longer term will likely begin to decline as more average, or lower than average, recruitment years deliver lower numbers of recruits to the vulnerable biomass.
37. Recreational catch has increased slowly and steadily since 1997, the last time an allowance was made. A recent sudden spike in catch has occurred in a discrete area of the inner Hauraki Gulf and Waitemata Harbour. Recreational catches in all other areas of SNA1 remain fairly flat.
38. MPI offer a table of options, rather obtuse in nature, as efforts are made to defend against charges of being predetermined or non-inclusive. The NZSFC summary of the IPP is in the following table.

Table 1: Existing and proposed TACs, TACCs and allowances (tonnes, t) for Snapper 1.

	TAC (t)	TACC (t)	Allowances (tonnes)			Proposed minimum legal size & bag limit				
			Customary	Recreational	Other mortality	27cm	30cm	33cm	35cm	36cm
Current	7550	4500	300	2300	450	9	-	-	-	-
MPI proposals										
Option 1	7550	4500	50	2550	450	3	3	4	9	9
Option 2	8050	4820	50	2730	450	4	4	6	9	9
Option 2A	8050	4500	50	3050	450	5	5	6	9	9
Option 2B	8050	4905*	50	2550	545	3	3	4	9	9
Option 3	7050	4180	50	2370	450	3	3	3	5	9

*NZSFC estimate based on 500 tonnes being allocated to the commercial sector and allowing for increased mortality.

Stock Assessment

39. There is new quantitative stock assessment for Snapper 1. It includes updated information on commercial and recreational catch rates, recruitment and growth rates. The 2013 model analysis resulted in the following conclusions:
 - a. The stock is at 24% for East Northland (EN), 24% in the Hauraki Gulf (HG), and 6% in the Bay of Plenty (BOP).
 - b. The exploitation rate exceeds the level that would sustain the rebuild and needs to be reduced, particularly in the BOP.
40. On its own the Bay of Plenty stock is below the Ministry's own hard limit as specified by their Harvest Strategy Standard (2008). Combining the BOP and Hauraki Gulf sub-stocks (on the basis that old tag returns showed a few snapper move between areas) is considered a contrived move to avoid the need to address the collapsed Bay of Plenty stock.
41. The three sub-regions of SNA1 are considered to be different biological stocks, and the BOP is being sacrificed by ignoring the high exploitation rate that will drive the sub-stock even lower. It appears as if MPI are defending overfishing in the BOP to protect the immediate interests of the commercial industry, which is responsible for about 77% of reported snapper harvest and most of the fishing related mortality in the BOP.
42. There is more work to do and additional data required in the next stock assessment, which should follow the development of an agreed harvest strategy for Snapper 1.

Allocation of the Total Allowable Catch (TAC)

43. This year introduces a new process for allocation of snapper and, while the change in process may seem subtle, there will be serious short and long-term effects on recreational interests. MPI has copies of the NZSFC Snapper 1 policy that states a preference for no increase in the TACC until the

stock reaches 40% of original biomass, and the need to reduce or eliminate juvenile mortality and dumping. Only when we reached the target biomass would we take a fresh look at allocation.

44. In previous processes the Minister first sets the Total Allowable Catch (TAC), and then makes estimates of recreational, and customary non-commercial fishing interest, adds in an allowance for mortality caused by fishing but not reported (thieves, discards, juvenile fish killed etc.), then deducts the aggregate of the three estimates from the TAC; the balance is the Total Allowable Commercial Catch (TACC).
45. In this IPP MPI propose to change that process. MPI now want to match the TACC-setting process with the setting of a Total Allowable Recreational Catch (TARC), a quota. This is unprecedented. The Fisheries Act is not constructed to administer recreational fishing in that way.
46. Once an allocation is set the Ministry propose options on how catch could be constrained to this allocation, presenting a table of various length and bag limits. MPI explicitly state a preference for a proportional allocation of the TAC, in this case to the proportions set in 1997.
47. The fundamental differences between commercial and non-commercial fishing exposes the flaws in law and policy of treating non-commercial fishing as quota holders, in effect as proportional quota holders of the TAC.
48. The Quota Management System (QMS) uses a system of Individual Transferable Quota (ITQ) class shares to determine ownership of the TACC, but ITQ shares themselves are not instruments to account for catch. Each year a Quota Weight Equivalent is applied to the each share and this generates ACE, that is valid for one year and is the token used to account for catch. In effect, when commercial catch is landed either tokens in the form of ACE are used to legitimise the landing, or if no tokens are available then a deemed value payment must be made to the Crown. The public fishing system uses none of these concepts, theoretically or practically.
49. There is no aggregate limit that the public must not exceed, just as there is no deemed value system to account for catch if they do. There are no tokens that the public must spend to land catch legally, and there is no mechanism for trading tokens between members of the public, there is no reporting system, and there is no penalty regime.
50. It is obvious to a blind man that the commercial and public management systems and processes are separate, and only come together when the Minister sets a TACC. At s.21 of the Act the Minister must 'allow for' the public's catch before setting a TACC, to protect the TAC from being knowingly exceeded.
51. Efforts to inveigle the public into the QMS are driven by potential benefit transfer gains from the public to ITQ shareholders. Such a system of granting the public a share in the TAC means the TACC also becomes a share of the TAC, something that under current legislation it clearly is not. The TACC is what the Minister has left after making the allowances in s.21, and can be set to zero (s.20). No such provisions exist for the public.
52. Interpreting recent Court decisions as giving the Minister the power to set a tonnage limit for the public, and then search for regulations that will constrain the public is inflammatory at least, and an error at most.
53. The setting of daily bag limits and minimum legal sizes serve several purposes. The IPP only applies these regulations as an allocation tool; a way to reduce public catches by increasing the discard rate. This fails to acknowledge and have regard to the primary purpose of these regulations and once again reveals the shallow single intent of this IPP - to force the public into the Quota Management System.
54. In August 2011 the NZSFC wrote a discussion paper, "Setting of maximum amateur daily bag limits". That month this discussion paper was tabled at the FMA 1 & 9 Forums with the expectation that it would form the basis of discussion to establish principles and purpose for the future setting of

bag and size limits. MPI managers claim to have ‘misplaced’ the paper. Again, this behaviour reinforces the opinion that MPI are disinterested in the wellbeing of the fishing public and are servants to the commercial industry.

55. The New Zealand Sport Fishing Council has a policy to rebuild Snapper 1 to 40% of unfished biomass, to improve the yield per recruit by reducing the mortality of small fish. If agreement is reached that there will be no TACC increase the Council will initiate research and consult with the public on what additional voluntary measures could be embraced to reduce fishing related mortality, to better look after the environment and to accelerate the rebuild.
56. The NZSFC has been very clear in discussions prior to the IPP release that we are available and keen to engage in conversation with MPI and other interests on how this rebuild to B0.4 can be achieved in a reasonable timeframe. MPI have copies of our policy and so far as we are aware it has not been misplaced. Only once we reached the B0.4 target would we take a fresh look at allocation.
57. The attempts at engaging the public in discussions about bag limits and minimum legal size limits are nothing but a shallow attempt at distracting attention from the main event – that is the promotion of the explicit proportional allocation model.
58. The cherry picking of science data to promote narrow and shallow commercial allocation benefits is becoming increasingly obvious behaviour by MPI. Commercial over-catch is rewarded with TACC increases while large uncaught TACCs are allowed to remain, even though there is no science to support the notion the fish exist (species mostly in Group 4 of the inshore Finfish Fisheries Plan). There are thousands of tonnes of ACE washing through the system that allows vessels to continue fishing, retaining only the species for which ACE is plentiful and inexpensive – science remains a silent observer.
59. The 10% of the TACC routinely deducted from the TAC, as a ‘catch-all’ allowance for all other mortality caused by fishing now seems to be in need of a more contemporary estimate. The UN considers that in Australia the average discard rate across fisheries is about 30% and, given the similarity in fisheries and management practices, NZ is unlikely to greatly differ from our ANZAC cousins.
60. The discard rate for SNA1 has undoubtedly increased from three different sources. First, as the stock becomes more numerically dominated by younger cohorts the ratio of juveniles caught and discarded will increase. Second, the incentives to dump caused by a large deemed value rate and access to ACE for species caught with inevitable snapper catch. These aspects drive fishers to dump legal sized snapper to avoid penalties. Thirdly, the increasing use of relatively low-cost bottom trawl and Danish seine methods targeting species for which there is surplus and affordable ACE and the demise of the higher value ‘iki’ longline caught fish.
61. The NZSFC notes that the same juvenile abundance is likely to increase the ratio of sub-legal fish caught and returned to the sea by recreational fishers. The survival rate of returned fish is unknown, however, an increase in turnover of small fish will likely increase the mortality.
62. It is not consistent with section 10 of the Fisheries Act 1996 to simply ignore the ‘other mortality’ estimates when there is credible information that the existing estimates fail to align with best information. MPI has recent estimates from onboard catch sampling that also serves as best information. The Minister must use this information.
63. It is wrong for MPI to claim that the existing recreational allowance is 40% compared of the TAC to 60% for the commercial sector (IPP Para. 224 and 266). Yet another flaw in the proportional allocation model. In 1997 the Minister settled on the following amounts for Snapper 1:

Total Allowable Catch	7550 t	
Total Allowable Commercial Catch	4500 t	60%
Combined non-commercial allowances	2600 t	34%
Other mortality (10% of the TACC)	450 t	6%

64. If considering the available catch after Maori customary and other mortality has been allowed for, the recreational allowance of 2300 t (Para. 184) and the TACC equates to a ratio of 34% to 66%. Clearly MPI have rounded off the proportions which is sloppy work, or they have incorrectly included the allowance for other fishing related mortality (most of which is as a result of commercial fishing) as part of the recreational allowance.

Compensation

65. MPI's refusal to move beyond a simple, ill-advised proportional allocation model has roots in fear that any non-proportional allocation will trigger a claim by Individual Transferable Quota (ITQ) shareholders for a loss of property.
66. MPI are reluctant to acknowledge this fact even though it is plainly obvious to all who are familiar with this conversation. Even the Supreme Court's Chief Justice noted that the Ministry appeared to act "in terrorem" (in fear).
67. We note that TACCs increasing and decreasing for a range of reasons was fully contemplated at the time the QMS moved from a fixed tonnage system to a share based system in the early 1990s. All risk of increases and decreases moved from the Crown to ITQ class shareholders, and this risk has been fully priced into share prices.
68. Of course the shareholders would like to export the risk of TACC reductions back to the Crown, even in limited cases, as the benefits are obvious. But such lobbying and opinion is against all intentions of the 1990 amendment, and best illustrated by the comments to Parliament at the time by Hon. Colin Moyle when he stated quite clearly that no compensation would be payable for changes to the TACC, except for an interim programme directed only at Orange Roughy.
69. Legislators were unambiguous and MPI would be well served to reflect their intention – liability for all changes to a TACC moved from the Crown to ITQ owners (soon to become ITQ class shareholders) in exchange for a raft of other regulatory changes in quota owner's favour.
70. The noise around "reallocation" and compensation is simply bullying by strong interests lobbying for extended favours.

Maori customary non-commercial fishing interests

71. Section 21 of the Act requires the Minister to allow for Maori customary non-commercial fishing interests. These interests encompass much broader aspects than just catch. These aspects include the social and cultural wellbeing of the community that derives satisfaction from having access to an abundant fishery.
72. However, MPI only address catch in the IPP, but note the inconsistency being applied, where the customary allowance is not intended to be a catch limit, a condition not extended to the recreational allowance even though both originate from s21 of the Act.
73. The combined 1997 allowance for recreational and customary fishing interests is 2600 t. The IPP proposes that of this 2600 t the recreational allowance is 2300 and the Maori customary allowance is 300 tonne. MPI propose a new customary allowance of 50 t, based on recent catch records. MPI note this allowance is not a constraint on actual harvest levels.
74. As lower bag limits and increased size limits bite into the catch of snapper now taken for customary purposes (to provide for the marae), by tangata whenua, under the amateur bag limit regulations it is inevitable that more kaitiaki will issue permits for snapper; this harvest is currently categorised as recreational but it will likely emerge if future as customary. Obviously a prudent decision would take

a forward-looking approach and make a generous allowance to allow for this obvious and inevitable behavioural shift.

75. If there is evidence that supports a higher allowance the NZSFC would like to see it discussed by the Northern Inshore Fisheries Assessment Working Group and would support an increase if required.

Allowing for catch and interests

76. There is a very poor understanding of what the allowance for recreational (and Maori customary) fishing interests means. In the Fisheries Act 1996 the allowances are simply, in the narrowest of interpretations, the best guess at what the catch will be.
77. It does not matter if the recreational allowance is lower or higher than actual catch, just as it does not seem to matter if the TACC is uncaught or exceeded, as neither serves as an upper limit, an upper bound setting the maximum permissible catch. The TACC can be caught twice over quite legally; as long as the deemed value fines are paid commercial operators can keep fishing. Even though the Minister has a statutory duty to set a TAC there is no catch related penalty. In fact, in some fisheries, KIN 7 most recently, MPI promote an increased TAC and TACC based on catch in excess of the TACC.
78. Recreational catch can be double the allowance, and despite the allegations in the IPP, there is no penalty or legal requirement to constrain the catch. There is no realistic landed Total Allowable Catch for anyone, catches are what they are and landings are routinely manipulated by high grading, trucking and dumping.
79. The issue of recreational daily bag limits, the purpose they serve, what principles might apply when setting these individual limits is a completely separate debate and ought not be confused with allocation or the allowance setting procedure. As above, the NZSFC has tried unsuccessfully to initiate this bag limit conversation with MPI.
80. The Supreme Court has clearly ruled that qualitative factors form as essential part of what makes up recreational interests. Having access to an abundance of snapper enables people fishing in Area 1 to provide for their social, economic and cultural wellbeing.
81. The 1997 management plan was implemented to rebuild the SNA 1 stock to, in part, improve recreational fishing. Now that the stock is rebuilding and recreational fishing is improving it is contrary to the 1997 intentions to now penalise recreational fishers for that rebuild and subsequent fishing success.
82. The fact that MPI fail to acknowledge in the IPP the contribution that recreational fishers have made towards rebuilding SNA1 is an indictment on MPI and just reinforces the notion that proportional allocation is the sole purpose of this IPP process.

Recreational landed catch

83. Estimating amateur harvest has been problematic over the years. In the 16 years since the allowances were made the estimated recreational harvest has been below the 1997 estimate for 8 years and above the estimate for 7 years. There is no estimate for 2013.
84. During the 1990s, regional and national surveys gave the first “ballpark” estimates for the main species. A more thorough approach using the telephone diary method in the early 2000s by AC Neilsen gave amateur harvest estimates that were considered implausibly high for many species including snapper in Area 1.

85. After a full review and some soul searching a specially formed Recreational Technical Working Group chaired by the Ministry in 2003 recommended that the harvest estimates from the diary surveys should be used only with the following qualifications:
 - a) they may be very inaccurate;
 - b) the 1996 and earlier surveys contain a methodological error; and,
 - c) the 2000 and 2001 harvest estimates are implausibly high for many important fisheries.”
86. MPI must inform the Minister that the survey that determined the current recreational allowance based on 1997 estimates “*may be very inaccurate and contain a methodological error*”.
87. This methodological error meant that the harvest by diarists was scaled up based on a flawed estimate that just 9.7% of eligible New Zealand residents fishing in the sea each year. Many other surveys suggest the real figure is 20 to 26% of the eligible population.
88. The 2000 and 2001 surveys estimated amateur harvest in SNA1 at over 6,000 t and kahawai in KAH 1 at 2,200 t. This snapper estimate was never used, but a derivative of the KAH 1 estimate was used to determine the recreational allowance in 2004 and 2005. In 2010 the kahawai recreational allowance was reduced by 48%, from 1690 to 900 t and the customary allowance was reduced by 60%, from 495 to 200 t, while the TACC of 1075 t remained unchanged.
89. At the time the Ministry called this a “technical adjustment” based on better survey data on recreational harvest. The Minister Phil Heatley noted in his kahawai decision letter, “*The reductions to the TAC and allowances are not intended to place new constraints on catch, but rather arise from applying the most plausible estimates of current recreational harvest.*”
90. Clearly non-proportional adjustments to the allowances and technical adjustments based on new information are tools that are available to the Minister when applying the most plausible estimate of current recreational harvest. The Minister must apply a non-proportional approach when considering a new recreational allowance.
91. Uncertainty over the results of the telephone/ diary surveys lead to the use of a more direct method of estimating catch. Boats that were fishing were counted from the air and catch information was collected at boat ramps and scaled up to give the observed catch for that day. The method has been well reviewed and in principle it works. However, it is expensive and there have only been two full SNA 1 surveys in 2004-05 and 2011-12. Both used only 45 random survey days per year. Data from a population based survey is also required to add in landbased catch and some methods not detected by aerial counts.
92. The SNA1 stock assessment model needed an estimate of recreational harvest every year. The method used to fill in the gaps between these surveys and for previous years was an approximation only. NZSFC had a representative at the working group meetings who is well aware of the method used and the time pressures to get amateur harvest estimates for use in the stock assessment model. There is considerable uncertainty around these fill-in estimates, but they were adequate at the time to use in the model.
93. As it transpires, the NZSFC was rightly concerned that the point estimates used in the model would be taken as fact by MPI, and then used to estimate average harvest in recent years. These are the figures now being used in the IPP.
94. There is reasonable evidence that snapper harvest in 2011 and 2012 was significantly higher than in previous years. The NZSFC has always contended that the availability of good sized snapper in the inner Hauraki Gulf for an extended period was exceptional rather than within the normal range.
95. There are only two “real” estimates of amateur harvest 2004-05 and 2011-12 (open circles in Figure 1, also includes a Hauraki Gulf only pilot study in 2003-04). Various methods were tried to derive the annual harvest for the years in-between. In East Northland and Bay of Plenty there was little difference, so most methods worked. In the Hauraki Gulf the jump from 1350 t to 2490 t was

significant and the data from an unrelated summer boat ramp survey was scaled to fit both of these. There was no summer ramp survey data in 2009 and 2010.

96. The NZSFC submit that the most robust data should be used to calculate the average catch. This includes both “real” estimates from aerial overflight surveys and the scaled estimates for the years in between (Figure 1). The best estimate of average amateur harvest is the 8-year average of 3100 tonnes.

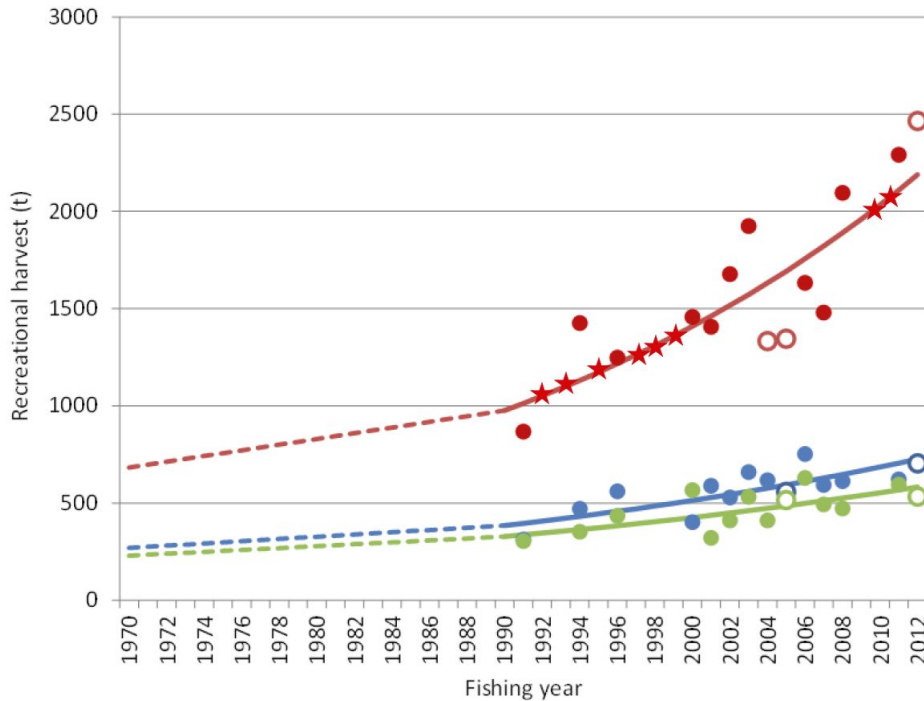


Figure 1: Recreational catch histories for the three areas of SNA 1 (Hauraki Gulf in red, East Northland in blue, and the Bay of Plenty in green). Open circles denote aerial-access survey estimates, closed circles denote summer recreational kg per boat trip indices scaled to the geometric mean of the aerial-access estimates, stars on the Hauraki Gulf solid line denote predicted harvest for those years for which summer creel survey data were not available (e.g. 2009 and 2010).

97. Apart from exceptional years, amateur harvest is predicted to vary with stock abundance. If there had been a significant increase in SNA1 biomass from 2004-05 to 2011-12, then the 8-year average may not be appropriate. However, the stock assessment shows a flat trend in abundance for all of this period, with a decline in the most recent years in the Hauraki Gulf/Bay of Plenty area (Figure 2).

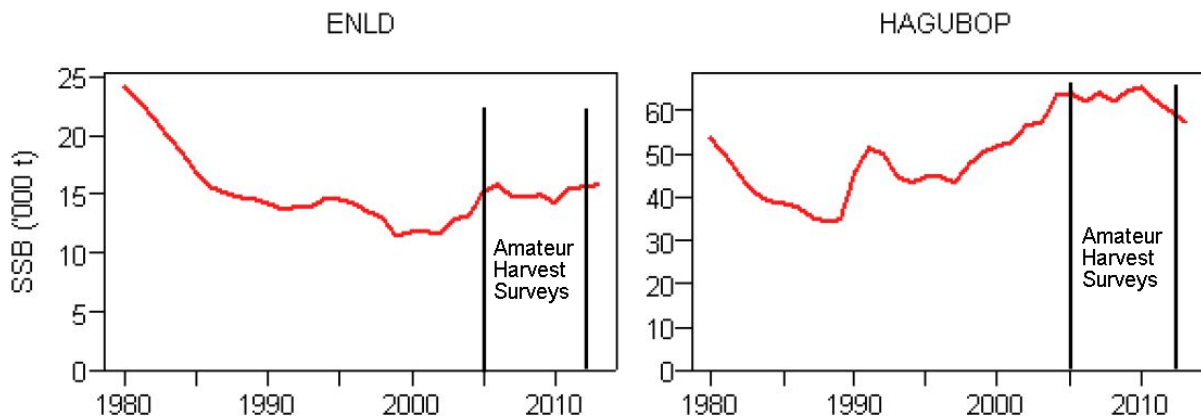


Figure 2: The stock size of snapper in thousands of tonnes (spawning stock biomass) since 1980 for East Northland and Hauraki Gulf/Bay of Plenty.

98. Moreover, the index of boat traffic collected from NIWA web camera data on boat ramps shows no overall increase in traffic from 2005-06 to 2009-10. There is a significant increase in the Hauraki Gulf and some increase in the Bay of Plenty in 2010-11 (Figure 3). This was one of the peak years.
99. NZSFC submit that using the 5-year average based on the scaled catch rate data (Figure 1) overestimates the amateur harvest in the Hauraki Gulf – all five estimates are over 2000 t. The simple solution to this is to use the average of all eight years back to 2005, which is 3100 t.

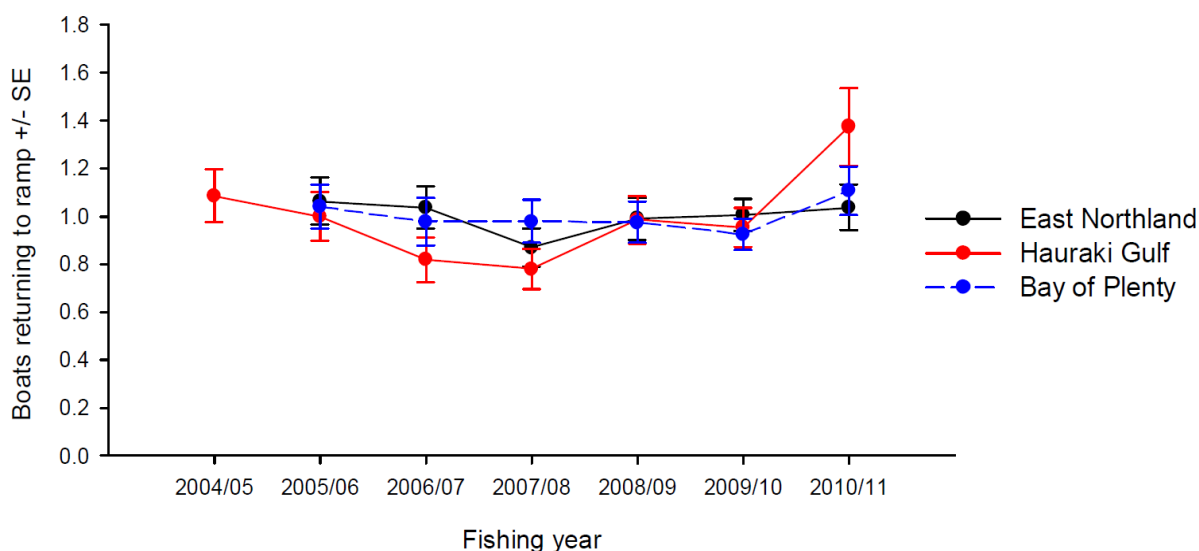


Figure 3: The annual index (with average of one) for the number of boats returning to boat ramps by area from NIWA web camera data. (From Hartill, B. 2012. Evaluation of web camera monitoring of amateur fisheries – updated analyses. Research progress report for MAF2011/07. Document MAFWG-12/50.)

100. The two aerial overflight surveys relied on by MPI indicate a spike in snapper catch at the head of the Hauraki Gulf. It has been suggested that in this area water temperatures stayed in the preferred range for adult snapper for much longer than usual in 2011 and 2012. This phenomenon no longer exists and amateur harvest in 2013 is most unlikely to reach the 2011-12 peak.
101. Many fishers find the numbers generated from the 2011-12 surveys in the Hauraki Gulf inside a line from Cape Rodney to Cape Colville very hard to believe (Note: this definition of Hauraki Gulf was used in the NIWA and NRB surveys). The NIWA aerial overflight survey estimated 2490 tonnes of snapper taken by amateur fishers:
- That is 48 t per week every week on average.
 - That is 47,000 snapper every week on average (NIWA average weight of 1.02 kg)
 - The average catch in the Hauraki Gulf was 3 per person from trailer boats.
 - Therefore the 2011-12 the survey suggests 15,700 fishers per week on average.
 - But the weather is not always nice and effort drops sharply June to September
 - So there would have to be many weeks with 2 or 3 times the average catch
 - Is a recreational harvest of 140 tonnes of snapper in the peak weeks really plausible?
 - Anyone that has unloaded one tonne of longline snapper knows that is a huge amount of fish. 140 t is 11,600 fish bins full.
 - If 2490 t was caught in the Hauraki Gulf it was definitely an exceptional, not an average year.
102. A sudden spike in catches in a small area, mainly the inner Hauraki Gulf, is no justification for attacking recreational entitlements throughout SNA1, where catches remain flat.

103. In 2011-12 average snapper catch per person, per boat trip was 1.3 fish or 1.6kg in East Northland, 1.6 fish or 1.5kg in the Bay of Plenty and 3.2 fish or 3.3kg in the Hauraki Gulf. Moreover, 50% of fishers in East Northland and more than 50% in the Bay of Plenty return with zero catch.
104. MPI have made an error in using the table of bag and size limit controls based on the peak catch in 2011-12 (Table 6.2 in the IPP). This has the current catch at 3705 t for the existing regulations of 9 fish and minimum size of 27cm. **It is very important to use average catch (e.g. 3100 for 8 year average) as the starting point and the NIWA table of percentage reductions to determine the tonnage expected in each cell. This changes all bag and size limit options consulted on, even when using the higher 5-year average harvest.**
105. The stock projections using recent recruitment indicate a small surplus of fish over the next few years. The long-term stock projections are less optimistic at current catch levels, (but these use a lower recruitment index which is not well estimated). However, there are consistent reports from all areas of SNA1 of large numbers of small fish in 2013. There are still strong years of recruitment coming through. These good years are more likely when water temperatures are warmer than average in the first few months of the snapper life cycle. Again, there is no evidence of cooler summer water temperatures in spawning areas and global warming suggests these temperatures will slowly rise.
106. The stock projections are more influenced by strong years of recruitment than a few hundred tonnes of recreational catch. For example, the Hauraki Gulf snapper stock will be almost the same size in five years time if there is a 500 t reduction in catch or a 500 t increase in the allowance.
107. The New Zealand Sport Fishing Council and recreational fishers are optimistic that the stock will continue to rebuild at current average catch levels if incidental mortality and fishing related waste can be reduced.

Snapper research

108. Snapper 1 is the largest recreational fishery in New Zealand. It is a taonga [treasure] for customary fishers. It is a valuable component of the inshore commercial fishery. NZSFC believes MPI need to increase the research priority for snapper. During this IPP review we have been concerned about the gaps in available data.
109. There is considerable uncertainty about catch data. Commercial landed catch is reported but we are hearing very disturbing estimates of discards, dumping and waste, which is unreported. The 10% allowance for other fishing related mortality has been in place a long time without any real attempt quantify what it really is.
110. The mortality of juvenile fish is not included in the 450 t allowance, but there are no referenced estimates of what it was, or what it is now. Weight-based estimates of juvenile mortality can be misleading. Estimates of the numbers of fish killed as juveniles are required.
111. Amateur harvest has been estimated in various ways. There is only two harvest estimates used (2004-05 and 2011-12) with all other data scaled to these. Two data points are not a good basis for estimating trends or current average catch. The catch history for the intervening years, as used in the stock assessment, is a guess and ought to be used with caution, if at all.
112. The NZSFC advocates that ongoing monitoring of trends in amateur harvest and fishing effort are required.
113. Commercial fishers have raised some doubts about using longline catch rates as an index of abundance. Changes in the way they fish, to avoid snapper and increase the catch of other species, may reduce the snapper catch rates used to guide the stock assessment. Information on operational changes on commercial fishing vessels needs to be recorded.

114. For many years NIWA have aged a representative sample of the commercial longline catch. This gives important information on the strength of annual recruitment to the fishery and the age structure of the population. But MPI failed to contract this work in 2010-11 and 2011-12 because of pressure from the fishing industry to cut costs. It is vital that this data is collected every year and would be better if it included snapper lengths from onboard observers, to avoid bias from high grading.
115. Observer coverage on inshore vessels has been very low. It seems mostly associated with risks to protected species like dolphin, turtles and black petrels, as there is no other mention of data collected in the IPP or Working Group Report. The selectivity of trawl and Danish seine gear is from old data and also needs to be updated. This data is best collected at sea with an agreed sampling design.
116. Trawl surveys in SNA1 were mostly targeted to collect year class strength but were abandoned in the 1990s. They produce some other useful data on biodiversity, species assemblage, and abundance of some of the secondary species like gurnard and John Dory.

Statutory obligations

117. The Minister must allow for recreational demand where it exists.
118. Recreational interests may be more than historical catch, and MPI makes no attempt to discover what level of recreational catch would best reflect recreational interests, and be reasonable in all circumstances.
119. The recreational fishing interests that the Minister must allow for are those existing in 2013, and any estimate of future interests, at least for the term until the next stock review.
120. It is unclear what part, if any, of the statutory utilisation purpose MPI considers has relevance in the proposed options within the IPP. Decisions must conform to the Purpose of the Act (s.8).
121. The terms of the definition of utilisation, including the wellbeing concept, are contextually relevant to what is meant by recreational interests and in that sense are relevant considerations in decisions under s.21¹.
122. Utilisation means conserving, using, enhancing, and developing fisheries resources to enable people to provide for their social, economic, and cultural wellbeing².
123. The primary statutory duty when making decisions is to give effect and conform to the Purpose of the Fisheries Act, in s 8, where utilisation is to be enabled, but sustainability is to be ensured. This review draws attention to s 8(2)(a) – maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations.
124. We may make some detailed assessment of what in particular the future needs might be (and arguably MPI need to), but in the interim we can safely assume that future generations will want and need to go fishing as much as past generations have.
125. The contemporary estimate for species such as snapper is that optimum yield is achieved at 40% of the unfished biomass, or close to it. B0.4 serves as a stock reserve that leaves future fishing opportunities for future generations in accordance with s 8 of the Act.

¹ NEW ZEALAND RECREATIONAL FISHING COUNCIL INC AND ANOR v SANFORD LIMITED AND ORS SC 40/2008 [28 May 2009]. Para 60.

² Fisheries Act 1996. Section 8.

Economic costs

126. The NZSFC has commissioned a report from a recreational planning consultant, Rob Greenaway, to better understand the nature of recreational fishing interests that will assist the Minister when faced with making a full and reasonable allowance.
127. The report, attached as Appendix 1, finds that fishing is the most popular form of outdoor recreation in New Zealand that requires access to natural environments and to which codified management controls apply. Thus, the Ministry is the single most significant recreation resource manager in New Zealand, if participation rates are the basis of analysis.
128. The IPP does not evaluate the effect of bag reductions on the values enjoyed by recreational interests, nor does it quantify the values of recreational marine fishing (absolutely or relative to commercial fishing) in any reliable manner.
129. The Ministry recognises the low confidence in the data used to assess recreation value (para 72 of the IPP) but then does not consider how the “considerable uncertainty” in that data might affect resource allocation decisions. Dalziel (2011) identified the direct benefits enjoyed by participants in sport in recreation in New Zealand to be \$5.9 billion, plus social benefits of \$1 billion due to increased work productivity and health benefits.
130. MPI need to recognise the benefits that accrue to society via the allocation of access to marine fishing. These benefits will be greater than the current contingent valuation methods indicate, which are largely confined to concepts of individual benefit.
131. Given the likelihood that the data used by MPI underestimates value, relying on a proportional allocation regime in SNA1 may result in significant inequalities and inefficiencies in resource allocation, as well as the denigration of the social and recreational value of one of the nation’s prime forms of outdoor recreation.
132. A paradigm shift may be required whereby the Ministry better recognises its role as administrator of the nation’s single most important outdoor recreation resource. This will require a more considered resource allocation regime, which is likely to include a review of the proportional allocation model as described in the IPP. The regime will need to maximise benefit at the national level, and must therefore take into account the full spectrum of values obtained from recreational marine fishing.

Other sources of mortality

133. Currently 450 tonne is set aside as an allowance for other sources of fishing related mortality. MPI define this as *“an allowance within the TAC designed to encompass mortality associated with harvesting i.e. burst nets, illegal fishing, mortality of fish legally required to be returned to the sea. Other sources of mortality include discarding at sea”*. [78]
134. The 1997 Minister’s decision defines the 450 tonne allowance as *“an estimate of 10% for illegal catch”*. Clearly over time the definition has broadened to encompass the above matters.
135. Due to a lack of data New Zealand’s bycatch rate has been estimated at 24.6%, based on Australia, which has similar fisheries and management practices³. New research indicates mortality rates could be as high as 30% of landed catch. Even at the conservative estimate of 24% of landed catch, the mortality rate would be more than 1000 tonnes per 4500 t of landed catch.
136. Whatever definition is used, the current 450 tonne allowance is clearly insufficient for today’s needs considering the shift from longlining to bulk harvesting methods such as trawling and Danish seining, and the prevalence of smaller fish in the catch.

³ Davies RWD, et al. Defining and estimating global marine fisheries bycatch. Marine Policy (2009), doi:10.1016/j.marpol.2009.01.003

137. Of great concern is the numbers of juvenile and adult fish being killed using these bulk harvesting methods. By numbers, trawlers are estimated to throw 25 to 35% of their snapper haul over the side and kill a further 5 to 10% through unseen mortality. Thirty to 45% of possible wastage, by numbers, is not insignificant!
138. There is no formal reporting or monitoring system to account for the fish shovelled over the gunnels or lost in the process of landing the catch on deck. This mortality is serious and needs to be addressed because these fish are our future fishery.

Table 1: Estimated number of snapper per metric tonne

Size (cm)	Estimated weight per fish (grams)	Estimated number of snapper per tonne
< 25	-	4000 – 6000
25	320	3125
30	600	1660
32	710	1408

139. The Minister must be advised that the rebuild of the Snapper 1 fishery is being retarded by this unnecessary waste and these discarded juveniles.
140. Also of concern is the level of trawling over inshore low foul causing significant, ongoing damage to benthic communities. Some of these reef systems have not recovered from the deliberate destruction in the 1970s and 80s, where the outer Hauraki Gulf and lower East Northland was clear-felled by pair trawlers towing heavy weights to flatten the seabed and kill off the horse mussels that were snagging trawl nets.
141. Some fish shops are awash with 130cm sea perch, leatherjackets and gurnard yielding 60gm fillets. These fish are being taken from inshore foul areas. If these fish are being captured in the trawls we can only speculate on what is happening to the juvenile snapper of similar size and weight.
142. In or around 1993 the Ministry of Agriculture and Fisheries commissioned research on snapper mortality, particularly relating to juvenile mortality within the commercial industry. In 1994 several requests were made to MAF to release this information. These requests were declined on the grounds of “*an obligation of confidence*” and also that an application had been made to the High Court for orders prohibiting the release of the report⁴. On 24 July 2013 the NZSFC requested this information, none has been provided by the submission deadline.
143. MPI has failed to properly measure all mortality caused by commercial fishing over the past 27 years and failed to ensure delivery of the promised husbandry by those who are exploiting our national resources.
144. We submit a reporting and monitoring scheme be implemented accompanied by on-deck surveillance. If there is a delayed introduction of such a scheme we submit that a more realistic estimate of mortality be agreed and deducted from the TACC.
145. MPI has also failed to assess the recreational fishing mortality expected under the different bag and size limits proposed in the IPP.
146. If MPI had applied due diligence regarding the impact of the proposals on the fish stock they would have easily discovered that a large portion of the proposed benefits to the SNA1 fish stock would be rendered futile by either by regulation or human nature.
147. The SNA1 recreational fishery is primarily a food fishery; one of the main objectives of many recreational fishers is to catch sufficient for their needs.

⁴ MAF letter to NZRFC, 31 August 1994.

148. Snapper sizes in SNA1 vary widely with smaller fish being caught nearer the shore and in harbours. In these areas some fishermen will be unable to land any fish over some of the proposed larger size limits. Effectively they will be denied access to fulfill their needs in favour of fishers with bigger boats fishing further offshore.
149. Under low bag limit proposals those who find the new limit to be insufficient for their needs could either high-grade their catch and keep only bigger fish (dumping the smallest fish in the bin when a larger fish is caught), or they could take more people fishing to increase the legal catch per trip.
150. Discard rates of undersized fish could be very high in popular areas of the inner Hauraki Gulf where smaller fish are the norm (27cm to 32cm). Wastage could significantly increase, depending on the rate of release mortality. In high-grading situations the rate could be even higher at low bag limits.
151. MPI must recalculate its proposals so that a correct allowance for increased recreational mortality can be deducted from the TAC under each of its proposals. Allowing for fishing related mortality is not discretionary, it is a statutory duty required of the Minister, so an allowance for the inevitable increased mortality must be made.
152. If we are truly serious about rebuilding Snapper 1 and obtaining more yield per recruit then the serious issues around waste and discards by all sectors needs to be addressed.

Harvest Standards

153. The mortality of juvenile snapper killed and discarded in the process of commercial fishing needs to be managed. The first task in managing juvenile mortality is to set a standard. There will be many ways at expressing and monitoring such a standard, but presently none exist.
154. Trawl and seine nets are the methods most able to kill large numbers of juveniles quickly and are the first target of a standard. The standard should be simple, auditable, and easily defined. The following is our initial proposal.
155. There is currently a default standard of 10% of the TACC set aside to allow for all mortality caused by fishing for legal sized fish. This is expressed as weight of fish. For juvenile mortality we recommend setting the standard by a more relevant measure, by numbers not weight.
156. For example, the maximum permissible mortality should be 10% by number below the minimum legal size. While this is the maximum, we would expect focused effort to minimise the destruction of juvenile fish while fishing. Areas where the standard is consistently breached should be closed to the offending methods.
157. Fishing in an area could be reinstated if the standard was met based on trials with observer coverage.
158. A different standard would be constructed for line fishing. The standard would incorporate frequency of undersized fish and the ability to discard fish that survive. Technologies are available to achieve very low mortalities of hook-caught fish, but they have failed to gain widespread use as there is also a reduction in efficacy. Fishing could continue if better technologies were deployed in areas containing small fish.
159. Trawl and seine standards are urgently required to avoid, mitigate, and remedy environmental effects of fishing on the aquatic environment, as s.8(2)(b) of the Act. MPI has a stated preference of operating without specifying gear, methods and areas, preferring instead to set standards and monitor those with a view of ensuring industry comply. The setting of trawl and seine standards conforms to this view, and provides tangible incentives to improve in the water selectivity.

Innovation and industry subsidy

160. Sanford's CEO recently announced their high expectations that new trawl net technology "will change the way in which the world catches fish". This statement raises some concerns.
161. The PGP project that is driving this innovation originates from a Crown Research Institute, funded by the taxpayer. The particular Precision Harvest project referred to by the Managing Director of Sanford Ltd involves Crown agencies and three large fishing corporates. Funding is split 50:50 between the Crown and the corporates – a \$13 million dollar direct subsidy from the taxpayer.
162. The programme is designed to run over several years, with intellectual property protection extending for several years beyond the completion of the project. In effect, this means that any new technologies developed to improve selectivity and protect juvenile fish will not come into the public domain for perhaps another decade.
163. The NZSFC is not prepared to let the current wasteful practices continue for another decade on the promise that a solution will be offered to the NZ industry. In fact, promoting a solution a decade out is a reflection of the real concern shown by trawl interests – very little.
164. On the promise of future reductions in juvenile waste the companies already begin lobbying to have this waste credited to their catch rights, as they glimpse an opportunity to enrich themselves by mitigating a public cost. Disgraceful in every regard.

Reallocation of wealth through 28N rights

165. Increasing the TACC results in an immediate wealth transfer from incumbent shareholders to those who hold 28N rights. The ramifications to shareholders of increasing the TACC are not explicitly made in the IPP. In respect of obligations when consulting this is an error in law.
166. The process for changes to the ownership of ITQ class shares in the SNA1 TACC when a TACC is increased are found in s 23 of the Fisheries Act 1996.
167. In short, there is a transfer of shares from current shareholders without 28N rights to shareholders with 28N rights. The number of shares being transferred depends on the size of the TACC increase and the amount of 28N rights. Option 2 of the IPP suggests a 500t TAC increase, with a 320t TACC increase.
168. Under this option, 6.6 million shares (6.6% of the total) will first be deducted from all shareholders in proportion to the shares they hold. Following the deductions, shares will be reallocated giving preference to the holders of 28N rights.
169. A 320t TACC increase redeems approximately 60% of the 28N rights, meaning those without 28N rights are net losers in the reallocation of shares.
170. It is estimated that Aotearoa Fisheries Ltd, its subsidiaries, and Iwi Asset Holding companies will sustain a combined loss of over \$6 million in share value. An outcome with such large direct costs to the major shareholder demands further explanation from MPI.

Origins of 28N rights

171. In 1986 a final administrative reduction of 22% to the Snapper 1 TAC occurred with the promise of the first allocation of any future increase in TAC going to those who incurred the reduction. This agreement was formally adopted in legislation and has become known as 28N rights.
172. The intention was that a TACC set at 4710 in 1986 would rebuild the depleted snapper fishery and within a few years the administrative cuts would be redeemed. These were all fixed tonnage rights as this era had a simple fixed tonnage ITQ system.

173. Unpredicted by anyone, the Quota Appeal Authority immediately began a generous round of granting ITQ to appellants, and continued until the TACC had blown out to 6010t by 1991.
174. The catch savings made by those that took the 22% cut were immediately lost and no stock rebuilding occurred, in fact the stock continued to be under severe stress. The catch reductions failed in the promise of rebuilding the stock, and it was on this promise that preferential treatment was offered in the form of 28N rights.
175. In 1992 the TACC was reduced by 1,106t (18%), to remove the excess granted by the QAA. Even at this level stocks failed to rebuild, and a further 438t (9%) reduction to the TACC was made in 1997, and finally stocks began to recover.
176. The recipients of the 28N rights are clearly owed something for the ITQ they forfeited to the Crown; but are they owed fish that has only become available through the sacrifice of others? Are they owed ITQ class shares that did not exist at the time 28N rights were granted?
177. The NZSFC submits that 28N rights are leading to ill-considered calls for a TACC increase, orchestrated by a major company holding 28N rights, for the purpose of achieving a reallocation of shares in their favour. It is simply outside the scope of natural justice that those who suffered the costs of reduced catches to rebuild a stock should be excluded from sharing in the benefits.
178. 28N rights are a legacy issue, not to be applied now that so much has changed since they were issued. The fundamental change, in 1990, from fixed tonnage to proportional quotas has pushed the costs of 28N rights from the Crown to the current ITQ shareholders without 28N rights. The Crown must step up immediately and resolve these outstanding rights so we can end the contrary behavior of those seeking redemption of these 28N rights.
179. The liability for the 28N rights must be returned to the Crown, and until the matter is resolved no TACC increase should occur.

Subdividing QMAs

180. East Northland and Hauraki Gulf areas are both around 24% unfished biomass. It is the Bay of Plenty that stands out as needing the most effort reduction. Plots presented at the Snapper Plenary meeting show that about 75% of Bay of Plenty harvest is commercial.
181. There has to be a shift of commercial effort out of the Bay of Plenty. This is best approached through industry agreement and closure of a much wider strip of the inshore nursery areas. There are many areas known to industry that hold large proportions of juvenile fish, and these are obvious first choices for closure.
182. In previous discussions with the Minister there was strong support from for a 3-mile trawl and seine exclusion zone along the coast. Some work was done on costing this. NZSFC and its supporters submit that decisive action on reducing trawl and seine mortality is needed now.
183. Perhaps it is time to subdivide SNA1 into three regions, the central region being the boundaries of the Hauraki Gulf Marine Park, with an area north and south of the Park. This approach may better enable catch and gear restrictions to be applied in a more accurate manner.

Target Biomass

184. New Zealand Sport Fishing Council clubs and delegates have developed and endorsed a Snapper 1 policy with a target biomass of 40% unfished biomass.

185. At a meeting held in Kaikohe, on 12 August 2013, at Te Runanga A Iwi O Ngapuhi (TRAION) the 85 people present for the resolution unanimously supported the New Zealand Sport Fishing Council Snapper 1 policy dated October 2012. Signatories to the resolution included the Chairman, CEO, kaumatua and kuia of Ngapuhi.
186. This resolution is the result of many years working together with tangata whenua to generate understanding around the importance of having sufficient abundance to provide for the social, economic and cultural wellbeing of our communities and future generations.

Rate of rebuild

187. The 5-year projections change very little given the range of amateur harvest tested for the IPP. The projections do change significantly when different assumptions about future recruitment are used. As stated elsewhere in this submission, there are a number of strong year classes still coming through. The new catch at age sampling of longline landings in SNA1 will show this. This data is expected to be available by the end of 2013.
188. Commercial and recreational fishers must address wastage from dumping and release mortality. Convincing fishers of the need to rebuild snapper stocks would be a good first step. Forcing them into catch reductions may only increase the use of poor practices and would most likely increase snapper mortality.
189. The New Zealand Sport Fishing Council aspires to harnessing the goodwill that the public is clearly demonstrating. Voluntary adoption of improved practices and behaviours, better informed attitudes and expectations lies at the heart of a successful drive to conserve fish to ensure a meaningful fishing experience for future generations (meeting the reasonably foreseeable needs of future generations pursuant to s8(2)(a) of the Act). This IPP process threatens to destroy that goodwill before it can be tested and capitalised upon.
190. The New Zealand Sport Fishing Council advocates that waste reduction will go a long way toward rebuilding the stock. To accelerate the rebuild MPI must start focusing on achieving this waste reduction.
191. The QMS is failing dismally to deliver the husbandry and innovation as promised at the introduction of the system in 1986. The simple economic model underpinning resource management, purporting to resolve the Tragedy of the Commons by creating private rights, has delivered slave ships and least-cost extraction, wealth for the few, not the nation, and a sluggish impenetrable industry exhibiting all the symptoms of a rent-seeking monopolistic culture. The refusal to acknowledge this failure perpetuates the myth that New Zealand operates a world leading quota management system, while full value from marine resources remain a distant dream. Self delusion on a grand scale.

A numerical example

192. As the fishery is prosecuted in 2013 the catches of each sector can be expressed in numbers of snapper killed and the number landed -
- The 1997 allowance of 2600 t for non-commercial interests represents around 2,500,000 snapper, these were landed and shared with whanau and friends. Approx. 250,000 snapper were wasted in the process of landing the 2.5M fish.
 - In 2013 the equivalent snapper numbers are 3,500,000 landed and about 350,000 wasted.
 - The 1997 TACC of 4500 tonnes represents about 6,000,000 fish landed and sold and about 3,000,000 wasted.
 - The 450 tonne allowance for other mortality i.e. thieves to catch and sell represents around 500,000 snapper.

193. The increase in recreational catch from 1997 to now is an increase of about 1,500,000 snapper, excluding the rapid increase in commercial dumping as the stock rebuilt and that ACE for associated species was plentiful.
194. All stock assessments, allocations and allowances should be expressed in numbers to better reflect the fact that managing snapper is about managing people's behaviour, the numbers of fish in each cohort being targeted and controlling the exploitation rate. The combined weight is of little interest when compared to the actual numbers of fish.

NZSFC Summary

195. The stock target of B0.4 is the correct one in respect of the biomass required to produce maximum sustainable yield (BMSY), maintain associated species, and diversity.
196. Stock management strategies must seek to maintain abundance, not search for theoretical maximum extraction rates.
197. All users must eliminate waste regardless of method, location, or sector.
198. The large estimates of juvenile mortality and discards must be addressed and these excesses reigned in. It is only after reducing or eliminating waste that we can consider further changes to catches.
199. The New Zealand Sport Fishing Council stands ready to take a lead in educating and coaching the recreational sector to make significant savings through better fishing practices. We have draft projects underway already.
200. The Minister must increase the TAC by 550 t and allow for 50 t of customary catch, 3100 t of recreational catch, and 450 t for fishing related mortality, and retain the TACC at 4500 t.
201. MPI will have a challenge to engage in meaningful ways with recreational fishers on the main issues that have been scheduled for the future if any changes to bag and size limits are made in response to this IPP.
202. The public will be reluctant to trust MPI again to behave in a balanced and reasonable manner and MPI risk being branded as publicly paid servants of ITQ shareholders.
203. The New Zealand Sport Fishing Council believes the outcome of this IPP has been pre-determined and MPI will recommend Option 2 in the FAP, with a bag limit of 5 snapper at 30cm. It seems inescapable that this was always the intention, and that the IPP is nothing more than an attempt at providing a defence against Judicial Review.

**Report on the “Review of sustainability
and other management controls for
snapper 1 (SNA 1)”**

**Prepared by Rob Greenaway
for the New Zealand Sport Fishing
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August 2013

Cover photo: Morning snapper catch in Pilot Bay, Tauranga Harbour, 1967

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1 Introduction

I have been asked by the New Zealand Sport Fishing Council (the Council) to consider the *Review of sustainability and other management controls for snapper 1 (SNA 1)* (the Ministry for Primary Industry's 'initial position paper' (IPP) (MPI, 2013)) from a recreation planning perspective.

The Council has directed me to the Fisheries Act 1996 where the Act refers to its dual purpose of providing for the *utilisation* of the fisheries resource while ensuring *sustainability*. My review is most strongly focused on *utilisation*, which the Act defines as meaning:

conserving, using, enhancing, and developing fisheries resources to enable people to provide for their social, economic, and cultural well-being. (s8(2)(b))

Section 21 of the Act requires allowance for recreational interests when setting or varying any total allowable commercial catch (TACC) (21(1)(a)(ii)). I take this to mean that managing recreational access to a fishery is a key method by which the Minister enables "people to provide for their social, economic, and cultural well-being".

Section 10 of the Act sets out the *information principles* which guide decision-making when allocating access to a fishery resource:

All persons exercising or performing functions, duties, or powers under this Act, in relation to the utilisation of fisheries resources or ensuring sustainability, shall take into account the following information principles:

(a) decisions should be based on the best available information:

(b) decision makers should consider any uncertainty in the information available in any case:

(c) decision makers should be cautious when information is uncertain, unreliable, or inadequate:

(d) the absence of, or any uncertainty in, any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of this Act.

With this in mind, my analysis considers the degree to which the IPP:

- Takes into account the available information about recreational interests in the SNA 1 fishery,
- Recognises the value of the SNA 1 fishery to recreation interests,
- Uses the correct data in allowing for recreational interests when setting the TACC.

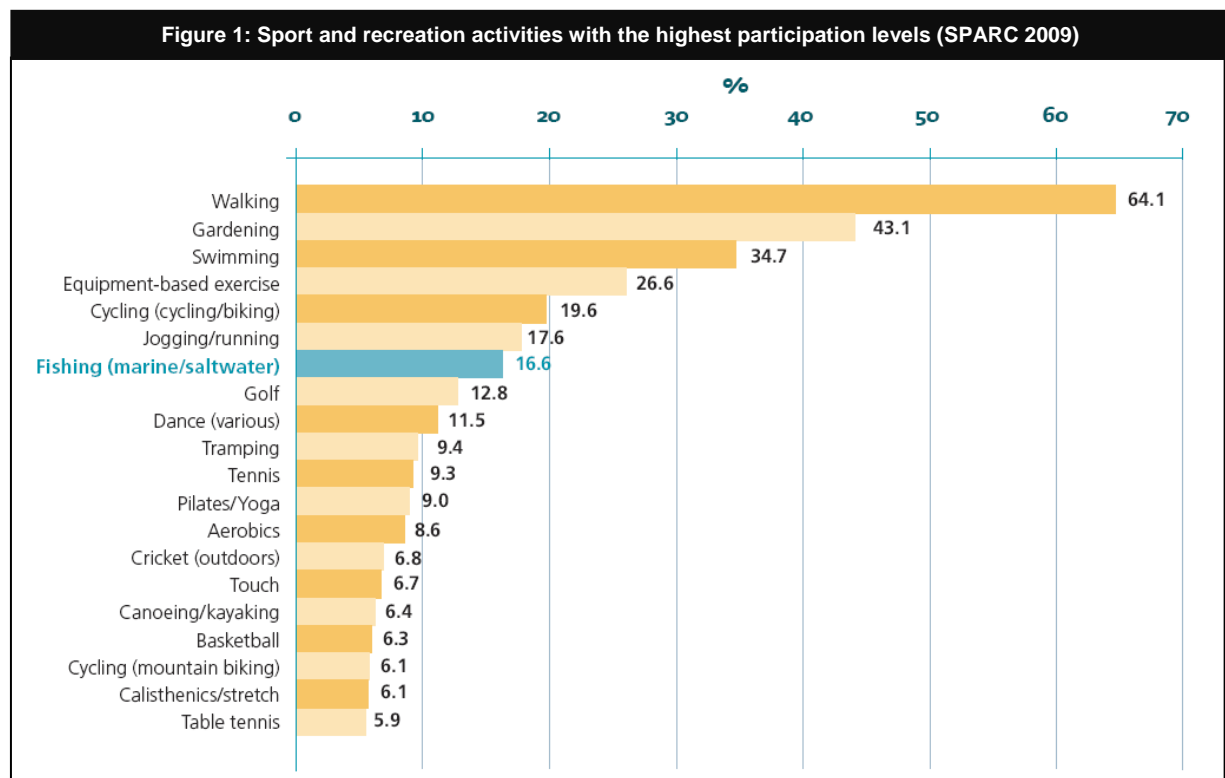
A brief CV detailing my background as a recreation and tourism planner is attached as Appendix 1.

2 The importance of recreational marine fishing in New Zealand

2.1 Participation levels

Various estimates are available for the number of marine fishers in New Zealand. Kearney (2002) reviews various studies which have given a wide range of estimates for the level of participation. These include estimates based on surveys carried out between 1996 and 2000 ranging from 9.7% to 39% of the population (Reilly 2002 in Kearney 2002). Several studies post-date these reviews or were not referenced.

At the national level, reliable relative data (if not absolute)¹ are provided by the Active NZ Surveys carried out by Sport NZ (previously SPARC – Sport and Recreation NZ) (SPARC 2008). The data from the most recent (2007/08) study is based on a stratified (by time and location) national respondent set of 4,443 adults aged over 16, of whom 809 reported fishing at least once in the 12 months preceding an interview. Scaling these data indicate that 19.5%² of all New Zealand adults aged 16 years and over (633,768 people) had participated in fishing at least once; 16.6%³ had participated in marine fishing (539,515 adults aged over 16) and 5.7%⁴ had participated in freshwater fishing. This made marine fishing the 7th most popular form of active recreation in NZ (Figure 1), while freshwater fishing was ranked 21st equal (with rugby union) (SPARC 2009).



¹ SPARC (2008) notes: “The Active NZ Survey is a nationally representative survey of all New Zealand adults. The findings in this profile are not directly comparable with other sources of information about fishing. This is because methodological differences (e.g. the way data is collected, the definitions used) contribute to differences in findings between different data sources.”

² (95% CI: 17.7–21.2)

³ (95% CI: 15.0–18.3)

⁴ (95% CI: 4.6–6.8)

At the sub-regional and regional levels⁵, participation rates ranged from 23.5% in the Bay of Plenty (the 5th most popular outdoor recreation activity) to 10.9% for central Auckland (10th most popular). The participation rates for North Harbour were 19.8% (5th) and for Counties Manakau 20.6% (5th). Future participation rates are difficult to estimate, but population growth in the Bay of Plenty and Auckland – the highest growth areas in New Zealand⁶ – will increase absolute participation levels. Changes in economic status and ethnicity will alter participation rates, most likely driving more growth in demand.

Sport NZ (2012a) report that over a 12 month period ending in spring 2011, 48.8% of New Zealand boys aged 5 to 18 went fishing, as well as 33.9% of girls in the same age group – the 10th and 18th most popular sport and recreation activities respectively for that age bracket. The study relied on more than 17,000 young people (5 to 18-year-olds) from over 500 primary, intermediate and secondary schools throughout NZ, but did not report separate figures for marine and freshwater fishing.

Walshe & Akroyd (2000) in their survey of 2,773 randomly selected New Zealanders indicated that:

- 61% of Kiwis aged over 16 had fished NZ seawaters from a boat
- 59% had fished from land
- 27% had fished at a river mouth for seagoing species
- 13% had fished underwater
- 44% had hand-collected or trapped
- 22% had not fished at all

This equates to 1.9 million New Zealanders aged over 16, as at 2000, having experienced recreational fishing. Nineteen percent of those respondents who had never fished (22%) stated an interest in doing so in the future.

Horizon Research (2013), relying on an internet-based panel of 2,508 self-selected respondents aged 18 years and over, weighted to represent the national population⁷, gave a past participation rate of 49% in marine recreational fishing, and 74% for Maori – a total of 1,650,000 New Zealanders aged over 18.

Forty-five percent of respondents in Walshe & Akroyd (2000) had been fishing in the previous 12 months, equating to 1.09 million active marine fishers aged over 16.

Walshe & Akroyd (2000) suggest a far higher level of marine fishing participation than SPARC (2009). However, 48% of Walshe & Akroyd's respondents only 'tagged along' with a fishing expedition, while 30% 'consciously chose' seawater fishing as a recreation. Those who 'tagged along' might not have considered themselves as active participants in fishing in SPARC (2009), and the two datasets might therefore be compatible.

Kerr et al (2003) questioned 836 respondents self-selected from a random selection of 2000 voters nationally. Women and people aged over 40 were over-represented and 269 considered themselves to be active marine fishers (32%).

⁵ The SPARC data are reported at the national level and for the areas managed by Regional Sports Trusts. The latter do not always match territorial local government boundaries.

⁶ http://www.stats.govt.nz/browse_for_stats/population/estimates_and_projections/SubnationalPopulationProjections_HOTP0631UpdateOct12.aspx – retrieved 22 August 2013

⁷ By age, gender, ethnicity, education, personal income, employment and Party Vote at the 2011 general election. See also, Horizon Research (no date).

These data offer a range in active participation levels in marine fishing from 16.6% (SPARC 2009) to 30% (Walshe & Akroyd 2000) fishing over a 12 month period, and 49% (Horizon Research 2013) to 78% (Walshe & Akroyd 2000) for past participation generally. My preference is to rely most heavily on the estimate provided by SPARC (2009) as this research was focused on participation in all forms of active recreation and had no primary focus on targeting marine anglers, and gives an estimate of active participation. This research also provides estimates for participation levels in other forms of sport and recreation which, to my knowledge, have not been challenged. However, the SPARC estimate is at the lowest end of the participation estimates discussed here and may be conservative.

The SPARC data provided additional analysis for all anglers (aggregated for freshwater and marine):

- During any one month, 7.5 percent⁸ of all New Zealand adults (242,534 people) participated in fishing at least once.
- During any one week, 2.5 percent⁹ of all New Zealand adults (81,054 people) participated in fishing at least once.
- On average, anglers participated in fishing on two days out of seven, for an average of 198 minutes on any one day.
- The average time spent fishing per week was 323 minutes.
- Participation levels on weekdays did not differ significantly to the weekend participation level.

The latter finding differs from that of quite robust on-site surveys such as Hartill et al (2011) who reported far more marine angling activity during weekends and public holidays than during mid-week days (91%).

These data indicate that we still have only a coarse understanding of the level of participation in marine recreational fishing, that there is little agreement amongst researchers due to different study methods and foci, and that by comparing aspects of different studies, weaknesses can be found. However, there is clearly a relatively high level of participation at the national level in recreational marine fishing – and high participation (and growth) rates in much of Auckland and the Bay of Plenty – and it is one of New Zealand's most important forms of outdoor recreation.

2.2 The benefits of recreation participation

Recreation and sport are generally considered forms of social good, based on benefits which are personal and those which accrue to society in general. Booth & Lynch (2010), in a stock-take of research into outdoor recreation in New Zealand, identified:

- 37 publications on the economic benefits of outdoor recreation
- 27 on the health benefits
- 53 on the social benefits
- 58 on the learning (educational) benefits
- 6 on the environmental benefits, and
- 7 on general benefits.

⁸ (95% CI: 6.2–8.7)

⁹ (95% CI: 1.8–3.2)

Research using, for example, contingent valuation methods (willingness to pay) are based on a personal response to an option to change the perceived value of a resource or opportunity – via changing resource attributes or access to the resource. This implies that respondents have a clear understanding of the net benefit of their, and others', participation in an activity. Booth et al (2002) identified more than 100 individual forms of benefit that an individual and/or society may gain from recreation participation. Considering a sample of the list of benefits identified, this would require the personal ability to quantify, for example, the following researched benefits of outdoor recreation:

- Nurturance of others
- Understanding and tolerance of others
- Environmental awareness, sensitivity
- Enhanced world view
- Socialization/acclulturation
- Cultural identity
- Cultural continuity
- Prevention of social problems by at-risk youth
- Developmental benefits of children
- Reduced health costs
- Increased work productivity
- Less work absenteeism
- Reduced on-the-job accidents
- Decreased job turn-over
- International balance of payments (from tourism)
- Local and regional economic growth
- Employment opportunities
- Contributions to net national economic development

This requires a resource manager to look beyond a personal response to a change in resource status, as identified via a contingent valuation method, to the true net effect of a resource allocation decision on people's social, economic and cultural well-being. That is, while there is clear benefit in estimating the effect of a resource allocation decision on the individual, those data are only part of the picture.

2.3 Importance for SNA 1 review

Fishing is the most popular form of outdoor recreation in New Zealand which requires access to natural environments and to which codified management controls apply. Thus, the Ministry is the single most significant recreation resource manager in New Zealand, if participation rates are the basis of analysis. Decisions made about access to the fishing resource have the potential to affect almost twice as many New Zealanders compared with decisions made by the Department of Conservation (DOC) in relation to tramping – and that comparison only holds if we assume that all tramping occurs on the DOC estate. All recreational marine fishing occurs in the setting administered by the Ministry and the activity directly depends on the resource the Ministry controls (the fish).

The Ministry's role as administrator of our most significant national recreation resource suggests that a detailed understanding of the effect of resource allocation decisions on recreation is required.

The Ministry's IPP does not appear to recognise the social value of recreational marine fishing to the New Zealand population. For example, Dalziel (2011) identified the direct benefits enjoyed by participants in sport in recreation in New Zealand to be \$5.9 billion, plus social benefits of \$1 billion due to increased work productivity and health benefits (an extra 17% in value).

The Ministry has relied on contingent valuation methods in the IPP to quantify the value of the SNA 1 fishery to the recreation marine fishing community (MPI, 2013, paras 71 to 74). This analysis does not consider the more broad benefits of recreation to society. As the single-most significant recreation resource manager in New Zealand, the Ministry needs to have a more clear understanding of the benefits that will accrue to society via the allocation of access to marine fishing. These benefits will be greater than the current contingent valuation methods indicate, which are largely confined to concepts of individual benefit.

3 Estimates of economic value for recreational marine fishing

I accept that contingent valuations methods are a widely-accepted means of assigning a price to a preference for gaining some non-market value, although there are significant issues which mean that any non-market valuation needs to be treated with caution. Hanemann's (1994) conclusions about the efficacy of contingent valuation methods put them into context:

Faced with the assertion that contingent valuation surveys can never be a reliable source of information either for benefit cost analysis or for damage assessment, the NOAA [National Oceanic and Atmospheric Administration] Panel rejected this as unwarranted. Two years later, there is now even more evidence from recent studies and literature analyses to support the Panel's conclusion. However, it would be misleading for me to suggest that contingent valuation surveys can be made to work well in all circumstances. I am sure situations could exist where a contingent valuation researcher might be unable to devise a plausible scenario for the item of interest. Nor would I wish to argue that all contingent valuation surveys are of high quality. The method, though simple in its directness, is in fact difficult to implement without falling into various types of design problems that require effort, skill and imagination to resolve. Each particular study needs to be scrutinized carefully. But the same is true of any empirical study.

While I believe in the feasibility of using contingent valuation to measure people's value for the environment, I do not mean to advocate a narrow benefit-cost analysis for all environmental policy decisions, nor to suggest that everything can or should be quantified. There will be cases where the information is inadequate, the uncertainties too great, or the consequences too profound or too complex to be reduced to a single number. I am well aware of the fallacy of misplaced precision. But this cuts both ways. It also applies to those who suggest that it is better not to measure nonuse values at all than to measure them through contingent valuation. I reply to such critics by quoting Douglass North: "The price you pay for precision is an inability to deal with real-world issues" (Wall Street Journal, 7/29/94).

The final quote matches the expectations of section 10(d) of the Fisheries Act: "the absence of, or any uncertainty in, any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of this Act". That is, a lack of precision does not remove the need to deal with real-world issues. The general conclusions also match that of the Ministry in relation to the South Australian Centre for Economic Studies (SACES) report on the value of recreational fishing in New Zealand (Lindsay et al 1999):

... there is considerable uncertainty in this information arising from the assumptions used to generate the economic measure (MPI, 2013, para 72).

Nevertheless, the SACES estimate is used in the Ministry's decision-making process to conclude that the values of commercial and recreational marine fishing are "roughly similar", while noting that the estimates of recreation value are "highly uncertain" (MPI, 2013, para 178).

I note that Lindsay & Damania (2000) describe the Lindsay et al (1999) results as "both reliable and intuitively plausible", which I challenge in the following sections.

While I recognise that some uncertainty in economic valuations are inevitable, several points relating to the assessments used by the Ministry to compare recreation and commercial value require consideration.

Kerr & Latham (2011) reviewed research into consumer surplus from marine recreational fishing and identified only three relevant studies in New Zealand: Lindsay et al (1999), discussed above, Kerr et al (2003) and Schischka & Marsh (2008). The latter identified mean expenditure per trip and estimated consumer surplus for a sample of anglers operating out of Whangamata. Kerr et al (2003) considered WTP for fish licensing.

Other studies consider the value of recreation generally. For example, Kaval & Yeo (2007) estimate the non-market benefit of outdoor recreation in New Zealand to be over \$5 billion and with market benefits of approximately \$4 billion. Dalziel (2011) identified the value-added contribution of the sport and recreation sector to be \$3.8 billion in 2008/09 with direct benefits enjoyed by participants to be \$5.9 billion, plus social benefits of \$1 billion due to increased work productivity and health benefits. The full contribution of sport and recreation to GDP in 2008/09 was more than \$5.2 billion, or 2.8 per cent (Dalziel, 2011) (as large as the dairy sector). Dalziel (2011) also identified the sport and recreation sector to be the 5th largest provider of employment in NZ (using 2006 data) – above house construction and dairying – with 36,831 workers, almost 4000 of whom were in the boatbuilding and repair sector.

3.1 Value-added

Value-added for market values is not assessed in the IPP for either recreational or commercial fishing and is not used to compare net benefit (economic and/or social). The question is, is it different for each activity and how different is it for each fish landed? There is quite likely to be a difference considering the relative levels of effort taken to land each fish and the different scales of efficiency relevant to each. Commercial fishing is more likely to be far more efficient per fish than recreational fishing – although it generally includes a paid labour component – and the value-added by recreational anglers per fish is likely to be greater. The relative contribution to GDP or GRP of recreational snapper fishing in SNA 1, considering the similar scales of take, might well be significantly larger than commercial fishing, and also have a different pattern of benefit, supporting many small-scale retailers and service providers rather than large-scale and centralised providers.

Kerr & Latham (2011) state, in reference to the findings of Lindsay et al (1999), that, “Consumer surplus is two to four times expenditure, indicating that value-added from recreation fishing is likely to be relatively small in comparison to consumers’ surplus.” However, no attempt has been made to identify what value-added amounts to in absolute terms. Consider here Kaval & Yeo’s (2007) estimate that the non-market benefit of outdoor recreation in New Zealand was more than \$5 billion while the market benefits were approximately \$4 billion (80% of non-market values and not ‘relatively small’ as Kerr & Latham (2011) propose).

3.2 Willingness to pay – average versus marginal

The Ministry applies the marginal willingness to pay (MWTP) for snapper as estimated by Lindsay et al (1999) to develop a value estimate for the recreational snapper fishery (MPI, 2013, para 73). In my view average willingness to pay (AWTP) gives a better estimation of consumer surplus and value, but more work is needed to identify the true value of fishing on a per-species and catch-rate bases.

Lindsay et al (1999) suggest that MWTP is the “best illustration of how much recreational fish are worth to New Zealand recreational fishers” (p(ii) and p89 (footnote 74)). Barbera (2012) applies both AWTP and MWTP in valuing the recreational fishery in the Hauraki Gulf, but states that, “in order to assess the value of recreational fishing the average willingness to pay (AWTP) is commonly considered the most accurate value” (p104). Barbera concludes that the

total recreational AWTP for snapper and kahawai is four times bigger than total commercial value. However, this assumes a degree of accuracy in the Lindsay et al (1999) data which I suspect is lacking.

The non-market values for kahawai, as identified by Lindsay et al (1999) are unusually high when compared with snapper, and considering the assumptions about the motivations for catching these different fish, are inconsistent for kingfish, rock lobster and blue cod.

For example, the ratio between MWTP and AWTP for kingfish in Lindsay et al (1999) is 9.2 (the AWTP is 9.2 times greater than MWTP). The same ratio for kahawai is 17.2, for blue cod 15.2, for rock lobster 7.4, and for snapper the ratio is 5.4. There is no consistency in the ratio between the AWTP and MWTP, and this applies to both sport fish (kahawai and kingfish) and eating or table fish (snapper and blue cod). One would expect some consistency if the motivation for landing each species was similar. The AWTP for kahawai is 91% greater than for snapper and 22% greater than for rock lobster, although the MWTP for kahawai is less than that for snapper and almost half that for rock lobster. Kahawai has very low commercial value as a table fish, while snapper has the reverse, and the recreational eating values of each species is commonly stated to be the same. I fail to understand how Lindsay & Damania (2000) describe these data as “intuitively plausible” when quite the reverse appears to be the case.

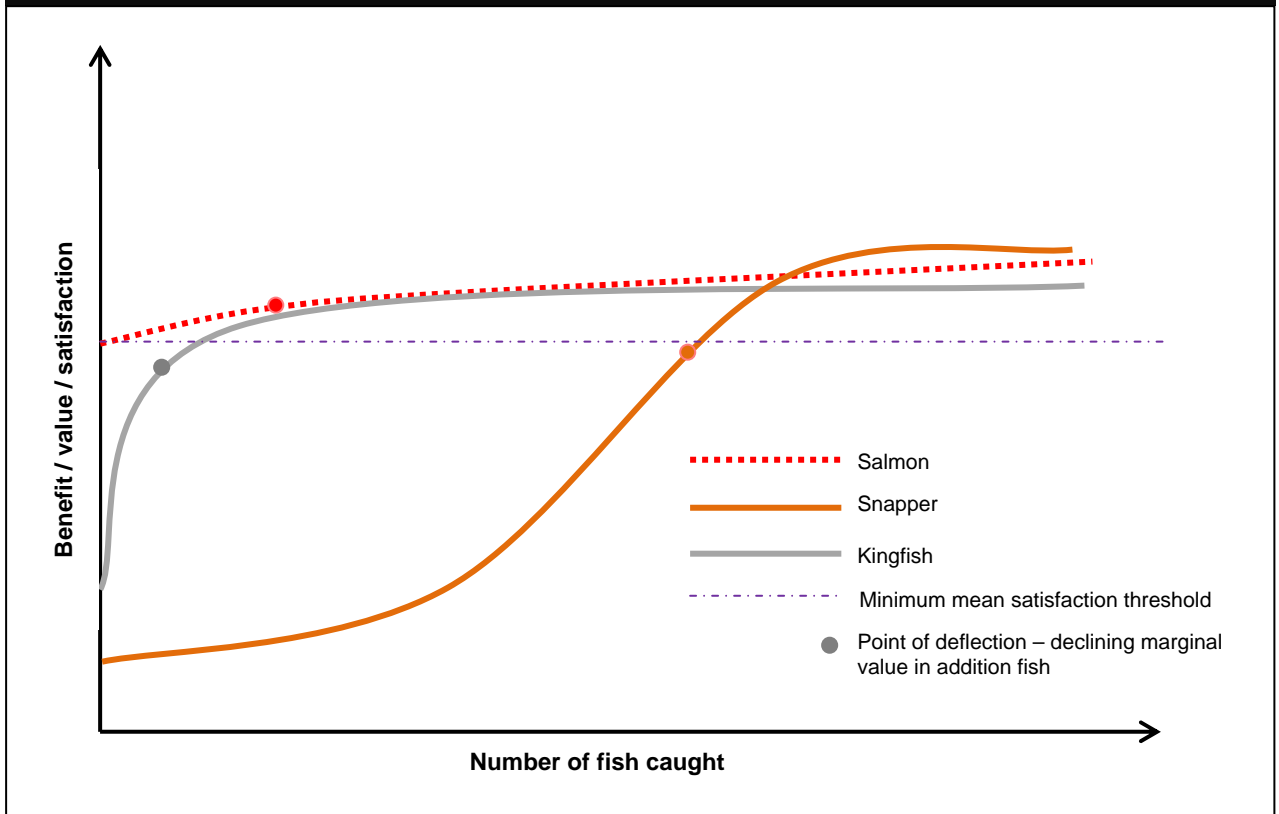
MWTP fails to recognise the change in marginal value of catching one or more fish. A relatively high willingness to pay is likely to apply to the first sports fish caught (a kingfish or marlin), but the second and subsequent fish caught will be of lesser value. For eating fish, there is likely to be a focus on catching ‘enough for a feed’ (see Walshe & Akroyd 2000). The demand curve for each species will differ, with an early point of deflection (where marginal benefits of catching an additional fish begin to decline) for a large sports fish species and a later deflection point for a table fish species (particularly for a relatively small one).

Figure 2 represents this as a modelled demand / supply curve. I have included salmon as an example of a sports fish which anglers might not catch for many seasons and yet still gain a sufficiently high level of satisfaction to continue participating. At some point, an expected catch rate (indicated by where the dotted line intersects with the demand curve for each species) will influence satisfaction and persistence in participation, although this will differ from person to person depending on their motivations, inputs and skill level.¹⁰

I expect that MWTP is most likely to reflect the value of a fish at the point of deflection, where marginal benefits begin to decline. However, applying this marginal value to the value of the total catch does not recognise the true scale of consumer surplus (see Kerr & Latham 2011) generated by the number of fish caught previously (MWTP assumes a straight line demand profile and could better be described as ‘mean marginal willingness to pay’). Accordingly, it appears that the value (consumer surplus) derived from recreational snapper fishing is likely to be greater (possibly much greater) than the estimate used by the Ministry, but is one which will rely on achieving a minimum catch level that has not been identified.

¹⁰ McConnell et al (1995) touches on this issue in relation to angler responses to changes in bag limits.

Figure 2: Stylised demand / supply curve for recreational fishing by species – Value versus number of fish caught



3.3 Importance for SNA 1 review

The Ministry, while recognising the uncertainties in the contingent valuation method applied to recreation fishing values, remains largely in the dark as to the true scale of consumer surplus generated by recreational marine fishing, and has no estimation of the value-added to the NZ economy by the activity (in absolute terms or relative to commercial fishing). The ability to make an informed decision about the most efficient allocation of resources is limited. The quantitative effects of changing bag limits on recreation values (social benefit, consumer surplus, value added) for each species is unknown. While this lack of precision does not preclude the Ministry from making a decision (section 10(d) of the Fisheries Act), the Ministry appears to be relying on data that is largely incapable of supporting sound decision-making, which risks significant non-compliance with the other requirements of section 10 of the Act.

4 Recreation responses – coping mechanisms and rationalisation

In 2007 I led an exploratory research project for the Department of Conservation into the scale and causes of recreation displacement in New Zealand (Greenaway et al 2007). The study was a response to anecdotal accounts that social impacts from increasing participation rates in recreation (crowding) were forcing traditional recreationists to change their activity patterns. The term 'recreation displacement' generally describes the response behaviours of outdoor recreationists who are repeat users of a place, but who change their use of that place over time due to some negative evaluation of changed local conditions.

Our findings were based on 2271 responses to an open public mail-back and on-line questionnaire. We found that reasons for doing recreation activities less were generally life-cycle issues (such as work pressure, changes in interest, cost and family issues). However, reduced use of preferred recreation settings by hunters, fresh water anglers and salt water anglers was most related to less fish, game or kai.

The study identified that, anecdotally, the 'problem' attributed to displacement was that existing users, in a setting that is subject to growing use pressures, are forced out of those areas, sometimes spreading pressures to other places, or withdrawing from their preferred activities. Maintaining participation in the face of changing resource attributes requires the participant to adopt some form of coping strategy, with 'rationalisation' being key. Rationalisation is a personal coping strategy that outdoor recreationists may employ when faced with adverse social, environmental, or managerial conditions. It is a process whereby outdoor recreationists re-evaluate an undesirable situation in a favourable way, minimising the sense of personal loss that could result from a compromised experience (Hall and Cole 2006). This could be represented by, for example, rationalising that, 'although more people are using my favourite place, it is positive to see so many children enjoying the setting'; or, 'although my access to a resource has been limited, this is a fair management decision and better for the resource quality in general'.

We did not analyse other responses to adverse changes in resource settings, but Kerr et al (2003) identified a high level of potential poaching of fishing resources should a fishing licence requirement be implemented. Breaking the rules is also a coping strategy, by which participants maintain their original levels of satisfaction in an activity when access has been restricted. This coping strategy would, of course, impact upon the integrity of the fisheries management system and the long-term sustainability of SNA 1. For example, Horizon Research (2013) indicated that, for those who fish in the SNA 1 area, if the snapper bag limit was dropped to three or four per person as a result of options proposed by the Ministry:

- 18% said they would ignore the new limit,
- 38% would fish for other species,
- 4% would stop fishing for snapper, and
- 5% would stop fishing in the sea altogether (consider the 'minimum mean satisfaction threshold' in Figure 2).

My 2007 study (Greenaway et al 2007) suggested that New Zealanders were quite adept at rationalising adverse change and maintaining participation levels, but that specific instances of potential displacement need assessment on a case-by-case basis. The SNA 1 fishery appears to be one of these cases.

4.1 Importance for SNA 1 review

The Ministry's analysis in the IPP currently has no indication of the potential effects of changing the level of access to the SNA 1 recreational fishing resource. This is surprising given that the importance of SNA 1 to recreational interests, and the Ministry being the single most significant recreation resource manager in New Zealand. Displacement effects may result in the targeting of alternative fish species with adverse stock effects. Where participants are not able to rationalise their loss of access to a resource – which may result if an allocation decision is considered inequitable – then there may be a loss of participation (and a loss of social and economic value to New Zealand), or personal decisions may be made to ignore the restrictions (poaching). Without a more complete review of likely recreation participation responses to an allocation decision, the net benefit of the decision is unclear and the potential unintended consequences are unknown, or at least unquantified.

5 Conclusion

Section 10 of the Fisheries Act requires the Ministry to “take into account the following information principles”:

- (a) decisions should be based on the best available information:*
- (b) decision makers should consider any uncertainty in the information available in any case:*
- (c) decision makers should be cautious when information is uncertain, unreliable, or inadequate:*

The IPP does not evaluate the effect of bag reductions on the values enjoyed by recreational interests, nor does it quantify the values of recreational marine fishing (absolutely or relative to commercial fishing) in any reliable manner. The Ministry recognises the low confidence in the data used to assess recreation value (para 72 of the IPP) but then does not consider how the “considerable uncertainty” in that data might affect resource allocation decisions.

Given the likelihood that the data used to estimate recreational value is flawed and underestimates value, relying on a proportional allocation regime in SNA 1 may result in significant inequalities and inefficiencies in resource allocation, as well as the denigration of the social and recreational value of one of the nation’s prime forms of outdoor recreation.

Section 21 of the Fisheries Act requires the Ministry to ‘allow for’ or ‘take into account’ recreational interests, as well as Maori non-commercial fishing interests, when setting or varying the TACC for any quota management stock. A paradigm shift may be required whereby the Ministry better recognises its role as administrator of the nation’s single most important outdoor recreation resource (all other outdoor recreation resources with higher levels of participation are managed by diverse agencies).

This will require a more considered resource allocation regime, which is likely to include a review of the proportional allocation model as described in the IPP. The regime will need to maximise benefit at the national level, and must therefore take into account the full spectrum of values obtained from recreational marine fishing.

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Appendix 1: Summary CV

My full name is Robert James Greenaway.

I am in practice as a consultant leisure and open space planner. I operate a private Nelson-based consultancy trading as Rob Greenaway & Associates (R&R Consulting (NZ) Limited) and I am a Director of the Pacific-based leisure planning consortium, the Global Leisure Group Limited. I was raised in the Bay of Plenty.

I graduated from Lincoln University in 1987 with a three-year Diploma in Parks and Recreation Management with Distinction, and then completed 18 months of postgraduate study. Between 1990 and 1995 I worked with an international tourism and recreation development consultancy – Tourism Resource Consultants – on a range of large and small development and advisory projects, including ecotourism development planning in Samoa and Malaysia, and for potential World Heritage Sites in the Solomon Islands for the Ministry of Foreign Affairs and Trade, as well as domestic event management and reserve, tourism and recreation management planning.

Between 1995 and 1997 I worked for Boffa Miskell Limited, focusing on recreation planning for local authorities and tourism development planning for private agencies. Since 1997 I have worked independently. The majority of my work is for local and central government, private companies, and environmental and community agencies. I am regularly called as an expert witness in Environment Court consent hearings and have completed many primary research projects.

I have been a member of New Zealand's leading professional leisure management association – the New Zealand Recreation Association (NZRA) – since 1990 and was a member of the Association's National Executive from 2000 to 2006. In 2004 I was awarded the Ian Galloway Memorial Cup by the NZRA, 'to recognise excellence and outstanding personal contribution to the wider parks industry'. I was Chair of the Association's Board of Accreditation to assess candidates for the status of Accredited Recreation Professional (ARPro) up to 2012, and also hold that status (and remain a member of the accreditation board). I am also a member of the New Zealand Association for Impact Assessment (NZAIA) and the Australia and New Zealand Association for Leisure Studies (ANZALS). In 2009 I was appointed to the inaugural Sir Edmund Hillary Outdoor Recreation Council, an advisory panel tasked with assisting Sport NZ in the implementation of the National Outdoor Recreation Strategy, and I served on the Council until it was dissolved in 2013.

In the recent past, as an example, I have worked as either lead, co-lead or sole consultant on recreation, park and sport development strategies, assessment of effects and research programmes for: Meridian Energy Limited (Waitaki, (Aqua, North Bank Tunnel Concept), Manapouri, Mokihinui, Hayes, Waiau (Canterbury), Hurunui wind, Central wind), Contact Energy Limited (Clutha), TrustPower Limited (Arnold, Wairau, Patea, Matahina), King Country Energy Limited (Mokau), Bay of Plenty Energy Limited (Kaituna), Fish and Game New Zealand (Hurunui), MainPower New Zealand Limited (Mount Cass wind), Pioneer Generation Limited (Nevis), Genesis Energy Limited (Castle Hill wind), Mighty River Power Limited (Puketoi wind), the Department of Conservation, Christchurch City Council, Sport NZ, the Royal Forest and Bird Protection Society, Summit Road Society, LandCo, Fiordland Link Experience, Central Plains Water Trust, Christchurch Estuary Association, Port Levy Coastal and Marine Protection Society, Far North District Council, Nelson City Council, Tasman District Council, Infinity Investment Group, Darby Partners, Nelson Cycle Trails Trust, the Canterbury West Coast Sports Trust, Environment Canterbury, and the Whakatane District Council, amongst others.

In the marine environment I am currently assessing recreation and tourism values for the management of the wreck of the Rena (for the insurers), the effects of iron sand mining in the South Taranaki Bight (for Trans-Tasman Resources Ltd) and the consenting of the Whareroa marine outfall (for Fonterra Ltd and the South Taranaki District Council).

Recreationally, my main activity is sailing. I was raised by a furniture manufacturer and boat builder (his photo is on the cover of this report) and I have a 31ft keeler based in Nelson.