

# Submission on: SNA 1 Initial Position Paper 2013

---

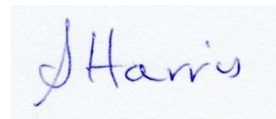
On behalf of: Ashley, Susan, James (7 years) and Kimberley Harris  
(5 years) of Whangarei Heads  
Supporters of Legasea.

Date: 23<sup>rd</sup> August 2013

Signed:



Ashley Harris



Susan Harris

## Table of Contents

1	Introduction .....	3
2	Parties to this submission .....	3
3	Key issues .....	3
3.1	Vulnerability of the fishery .....	3
3.2	Glacial and fragile stock recovery .....	4
3.3	Overly optimistic scenarios.....	4
3.4	Critical information gaps .....	5
3.5	Unsustainable current management by all parties.....	6
3.6	Competitive attitudes.....	6
3.7	Need for change.....	7
4	Relief sought - recommended strategy .....	7
5	Conclusion.....	8
6	Appendix 1: Key observations .....	9
7	Appendix 2: References .....	15

## 1 Introduction

This is a submission on the Ministry of Primary Industries' (MPI's) Initial Position Paper on proposals for sustainability measures and other management controls for SNA 1 for the October 2013/2014 fishing year, MPI Discussion Paper No: 2013/31, July 2013 (IPP).

The submission comprises the following sections:

Section 2: Parties to the submission

Section 3: Key issues

Section 4: Relief sought – recommended strategy

Section 5: Conclusions.

## 2 Parties to this submission

This submission has been prepared by GreenXperts Limited (GreenXperts) for and on behalf of:

- Ashley and Susan Harris of Whangarei Heads;
- Their children, James (7 years) and Kimberley Harris (5 years) of Whangarei Heads;
- Any descendants of Ashley and Susan Harris; and
- Members, affiliates and supporters of Legasea.

The professional analysis, advice, opinions and recommendations contained within this submission have been prepared for the information of the parties to this submission, and are consistent with Legasea's policy to promote the rebuild of snapper stocks in SNA 1. However they do not represent the official position of Legasea or the New Zealand Sport Fishing Council (NZSFC).

## 3 Key issues

### 3.1 Vulnerability of the fishery

The science summarised in the IPP informs us that:

- Snapper are a low productivity stock, and therefore vulnerable to over-fishing;
- SNA 1 snapper grow the slowest in all of New Zealand, and they have weaknesses in their age class structure (certain age classes are missing);
- Snapper growth rates are declining;
- SNA 1 stocks are severely depleted, having suffered an 85% decrease from 1900 to 1997;
- Some discernible recovery in the stocks has occurred in the past ten years following restrictions in total allowable catch (TAC);
- However long term trends indicate that snapper stocks are still declining;
- Habitats of particular importance to snapper are known to exist, but are not well described or protected;
- Snapper experience commercial and recreational fishing pressure when spawning;
- Land use activities pose threats to snapper nursery habitats in estuaries and harbours; and

- Snapper are the most intensively sought after commercial and recreational marine fish in SNA 1.

It can be concluded that the SNA 1 snapper fishery is a very vulnerable fishery that continues to experience intensive predatory pressure from commercial and recreational fishers.

### 3.2 Glacial and fragile stock recovery

The 2013 spawning stock biomass ( $B_x$ ) assessment reported in the IPP informs us that:

- There was a massive 85% drop in stocks from 1900 to about 2000, almost to collapse levels. The fishery was decimated over a period of 100 years, particularly by foreign commercial vessels in the period 1960-1980;
- A very slow recovery occurred from about 1997 onward, following the imposition of catch limits. This recovery has been at a rate of about 0.25% per year;
- At this rate, it would take another 80 years (2093) to recover to target  $B_{40}$  level. That is, a recovery period of about 150 years from the last time the stock was at  $B_{40}$  (pre-WWII<sup>1</sup>);
- Statistically speaking, it could be argued from the presented error and uncertainty analyses that there has actually been very little recovery since 1997, and therefore the fishery is still in a critically vulnerable state;
- It could also be argued that anecdotal reports of recovery in estuaries and harbours are the result of reduced commercial fishing pressure (due to catch limits imposed in 1997), temporary favourable weather conditions within harbours (targeted by recreational fishers), an increasing recreational fishing population (more people on the water therefore more anecdotal reporting), and the enthusiasm of fishers; and,
- The 2013 expert opinion on stock status is that the stock remains over-fished by all fishers.

The data shows that the stock recovery is glacial and fragile, and probably highly sensitive to seasonal environmental conditions and fishing pressure.

### 3.3 Overly optimistic scenarios

Despite the very competent summary and presentation of fisheries science in the IPP (which includes statistical information, modelling, and caveats encouraging caution), some overly optimistic scenarios and management options are proposed, with the science being misapplied.

In particular, a TAC of 9,000 tonnes is proposed over next five years, with a claim that there would be minimal impacts upon the East Northland and Hauraki-Bay of Plenty sub-stocks, since this level of TAC would only last five years. This projection is based upon "recent average recruitment levels", which are themselves a product of a TAC of 7,550 tonnes (less fishing pressure). A TAC based on long term recruitment levels suggests 3,800 tonnes might be sustainable, so it is extremely unlikely that a TAC of 9,000 tonnes would represent a Maximum Sustainable Yield (MSY) for the fishery.

Within the context of the high demand and high expectations on the fishery, it is considered dangerously irresponsible to make such a suggestion. The precautionary principle, an important and accepted principle of sustainability management, should be part of the MPI ethos when managing vulnerable natural resources. Overly optimistic scenarios should not be proposed, as they could create dangerously unrealistic expectations in many quarters.

---

<sup>1</sup> World War II 1939-1945

### 3.4 Critical information gaps

The summary of science reveals a number of critical information gaps that need to be addressed before adequately informed management decisions can be made. The most important gaps are summarised below in Table 1.

**TABLE 1: CRITICAL INFORMATION GAPS**

Topic	Information gap
1. Snapper growth and productivity	Why do snapper in SNA 1 grow the slowest in NZ?  Why are snapper growth rates declining?
2. Effects of climate change <sup>2</sup>	Better recruitment in warmer weather - positive impact of climate change (warming sea)? Balanced against negative impacts of ocean acidification?
3. Value of commercial fishery	Probably under-reported as no work on industry economic multipliers, opportunity costs, asset replacements and influence of technology, export and domestic market demand trends appears to have been done. These are standard economic analyses, and it is surprising that they have not be completed and presented.
4. Value of recreational fishery	Value of the recreational fishery in SNA 1 is extraordinarily under-studied and under-reported given its scientific and political significance. A proper economic assessment of the full economic and social value of recreational fishing to the NZ economy and its community is needed. These demands need to be monitored on a year-by-year basis, and matched to demographic studies on projected population growth and recreational fishing demand.
5. Demographics of recreational fishery – future demand assessments	Research needed on demographics of SNA 1 to help project future fishing demand, in particular recreational demand. It is remarkable that to date, no proper demographic studies have been completed on this critical social and economic aspect.
6. Fishing mortality – non-harvest	Is commercial and recreational non-harvest mortality similar?  Can industry-led research on fishing methods help discover ways to reduce unintentional non-harvest mortality?

<sup>2</sup> 95% certainty of human-induced climate change in latest draft IPCC report [IPPC 2013 Draft Report \[informal\]](#)

Topic	Information gap
7. Habitats of particular significance for fisheries management	Critical to research location and extent of these areas and protect them.
8. Effects of fishing on spawning	Critical to research these effects and protect key spawning areas.
9. Benthic interactions	Critical to research these effects and make management adjustments where necessary.
10. Ecosystem indicators – eg. maximum size of fish in Hauraki Gulf decreasing, declines in fish diversity in shallow waters – these are bad signs	Critical to research these indicators and make management adjustments where necessary.

Source: Appendix 1

Fortunately many of these gaps could be closed fairly quickly over the next two years. Considerable research is already underway, and the topics in Table 1 could be added to existing research projects where practical, or additional research projects commissioned to run alongside them. Some of the topics are relatively short term projects (eg. full value of commercial fishery); others are long term with management monitoring elements (eg. ecosystem indicators). If not covered by existing projects, topics 7-10 could be combined into one research project.

### 3.5 Unsustainable current management by all parties

The 2013 expert assessment provided by the 2013 Fisheries Assessment Plenary concludes that the SNA 1 stock is over-fished by all fishers – commercial and recreational. All parties are responsible for the unsustainable management of the SNA 1 snapper stocks.

The IPP states that there needs to be a 56% reduction in TAC to rebuild the fishery to  $B_{40}$  levels in a 16-24 year period. If such is achieved, it would be towards the end of Ashley and Susan Harris' lifetimes. Their children James Harris would be 26-34 years old, and Kimberley Harris 21-29 years old.

Tragically, based on past fisheries management performance, Ashley and Susan Harris, their children, and grand-children, will not see stocks achieve this level in their lifetimes. That is, it could take four generations to rebuild the stocks to  $B_{40}$ . What an appalling legacy.

That is the prime reason why we are making this submission – we want to make sure that we pass on a better legacy to our children.

### 3.6 Competitive attitudes

A short review of the information and draft submissions on the IPP from Government, commercial fishing and recreational fishing sources reveals unfortunate competitive and blame-shifting attitudes between the commercial and recreational industries: “us versus them”, “it’s their fault, not ours”, “this policy position “X” will ruin our industry (commercial or recreational)”, and so on. The Government position seems to oscillate between appearing to favour the commercial fishers or the recreational fishers, depending upon levels of lobbying and publicity at various times.

Fortunately the current 2013 IPP strikes a reasonable balance between the two.

However it needs to be said that the competitive attitude between the two major stakeholders is frustrating the sustainable management of the resource. It doesn't matter to the fish whose hook kills it – the fish is dead either way and is no longer part of the spawning stock biomass.

Stock depletion issues are so severe with the SNA 1 snapper fishery that if a cooperative attitude is not adopted then the fishery will inevitably collapse and everybody will miss out.

### **3.7 Need for change**

All the best science and policy pretensions will not save the fishery if fishery managers (MPI) and fishery stakeholders (commercial and recreational fishers<sup>3</sup>) do not acknowledge that the stock is currently over-fished by ALL fishers, and agree to take effective action to rebuild the stock over an acceptable time period.

In short, a cooperative attitude is an essential pre-requisite to effective sustainable management of the resource. For this reason we support the MPI proposals to encourage stakeholder input, encourage field research, and develop a long term management strategy over the next two years.

However, we do not support Options 2 or 3, as a 7% increase or decrease in the TAC short term is not likely to benefit the fishery. Nor do we support management options based on recent recruitment levels. Time needs to be allowed to receive critical research results, and then a long term plan must be agreed upon before the first short term steps can safely and sensibly be made.

The SNA 1 snapper stock is probably stable enough at present levels for a two year “pause” to be called to give time for a better informed and united<sup>4</sup> long term management strategy to be devised and actioned. This would not prevent stakeholders from taking voluntary actions (provided these are environmentally, economically and socially sound) to improve the sustainability performance of their industry. Nor would it prevent MPI from taking more effective enforcement actions where required.

## **4 Relief sought - recommended strategy**

The relief we seek from the Minister is as follows:

1. That the Minister delay making a decision to change the TAC, TACC and recreational allowances for two years.
2. That the Minister adopts Option 1 (Status quo) for the 2013-2015 fishing years.
3. That the Minister encourage all parties to adopt a cooperative approach to the management of the SNA 1 snapper resource.
4. That the Minister commission research into the critical information gaps recommended in Table 1 above.

---

<sup>3</sup> Customary fishers are included as recreational fishers

<sup>4</sup> Generally agreed by all stakeholders

5. That the Minister advises stakeholders that he intends to adopt a long term management plan (LTMP) for the fishery to be actioned from the 2015 fishing year onward.
6. That in the meantime, the Minister calls for public proposals from stakeholders for voluntary sustainability programmes, including how their effectiveness will be measured over the next two years.
7. That the Minister advises that he intends to host an “open book” Sustainable Snapper Plenary for the SNA 1 area in August 2015, where the latest research will be presented, and where stakeholders will be invited to present their latest information and views on a Long Term Management Strategy (LTMS) for SNA 1.
8. That the Minister invites all stakeholders to enter discussions with MPI and submit proposals on a possible LTMS by late August 2014. Further cooperative discussions and meetings would occur, with a Draft LTMS to be published in May 2015.
9. That the Minister provides more resources for enforcement activities in targeted areas of known non-compliance.

## 5 Conclusion

We would like to thank the Minister for the opportunity to present this submission. If we can be of any further assistance, or if further information is required, please contact our representative Mrs Susan Harris of GreenXperts, contact details below.

We look forward to the Minister making decisions that will ensure our children and grand-children are able to enjoy fishing for snapper as we have within our lifetimes, and to a greater extent within theirs.

### Contact:

Mrs Susan Harris  
Principal Scientist  
Mob: 022 1544 958  
Email: [susan.harris@greenxperts.co.nz](mailto:susan.harris@greenxperts.co.nz)



GreenXperts Limited  
Clean Technology Centre  
47 Miro Street, Otaki 5512  
PO Box 52, Paraparaumu 5254  
Wellington  
New Zealand



“GreenXperts” Network



## 6 Appendix 1: Key observations

**TABLE 2: SUMMARY OF OBSERVATIONS**

Page	Paragraph	Topic	Observation
<b>BIOLOGY</b>			
11	23	Snapper growth and productivity	① Snapper a low productivity stock – therefore particularly vulnerable to overfishing
11	25	SNA 1 snapper grow the slowest of all in NZ	★ Why?
11	29	Importance of snapper as a food source for other predators poorly understood	★ Research need
12	30	Snapper abundant predator in inshore ecosystem – their importance poorly understood	★ Research need
12	32	Warmer water has positive effects on snapper recruitment	★ Positive impact of climate change (warming sea)? Balanced against negative impacts of ocean acidification?
12	33	Weakness in age class structure - fewer age classes in SNA 1	① SNA 1 recruitment vulnerable because of fewer age classes present?
<b>COMMERCIAL FISHERY</b>			
13	34	Extensive controls already on commercial fishers	Are these effective? Can they be simplified?
15	37	ACE entitlements don't seem to be flexible or financially fair to commercial fishers	Market failure of ACE? Can a better economic instrument be designed? Consult with commercial fishers.
16	38	Figure 3.2 Commercial catch exceeds TACC in most years	① But what are the error limits on this data? Extent of under-reporting and dump at sea?
16	38	TACC	TACC hasn't changed in 16 years (since 1997)
16	41	Drop in commercial fleet to around 200 vessels since 1993	Fleet reduction a result of over-fishing, and introduction of more efficient vessels, not as

Page	Paragraph	Topic	Observation
			a result of the QMS! The QMS followed collapse of the fishery <sup>5</sup> .
18	47	Value of the commercial fishery	This value is under-stated, as it does not include the value of the domestic market (snapper wet fish in supermarkets presently sold at \$40/kg+), or any estimates of economic multipliers to the NZ economy.
<b>RECREATIONAL FISHERY</b>			
19	53	Recreational fishing 85% by boat	❶ How many boats in the recreational fleet? No numbers found in scientific literature search <sup>6</sup> .
21	57	Data quality	Data prior to 2000 may still be useful for trend analysis.
22	63	Table 3.4 Recreational catch estimates 2004-2012	Surprisingly good correlation between aerial access and panel surveys.
24	73	Value of the recreational fishery	★ Value of the recreational fishery in SNA 1 is extraordinarily under-studied and under-reported given its scientific and political significance. The postulate in the IPP that recreational fishing is roughly equivalent in value to commercial fishing has very little support in the scientific literature. <sup>7</sup>
26	81	Fishing mortality	★ Commercial and recreational fishing mortality similar?
<b>2013 STOCK ASSESSMENT</b>			
28	88	Snapper growth rates declining	★ Urgent research need
29	91	Interim biomass target $B_{40}$	Acceptable target
30	93	Spawning stock biomass ( $B_x$ ) history from 1900 to about 2000.	Massive 85% drop in $B_x$ from 1900 to about 2000. Fishery decimated over a period of 100 years, particularly by foreign commercial vessels in the period 1960-1980. <sup>8</sup>

<sup>5</sup> Figure 4, MPI 087\_SNA\_2013

<sup>6</sup> Google Scholar, [www.fish.govt.nz](http://www.fish.govt.nz) and NIWA library search 22 August 2013

<sup>7</sup> See [Kerr and Latham 2011](#) for an interesting recent summary

<sup>8</sup> Figure 4, MPI 087\_SNA\_2013

Page	Paragraph	Topic	Observation
30	94	B <sub>x</sub> from 2000 onward	Very slow recovery from about 1997 onward, at a rate of about 0.25% per year <sup>9</sup> . At this rate, it would take another 80 years (2093) to recover to target B <sub>40</sub> level. That is, a recovery period of about 150 years from the last time the stock was at B <sub>40</sub> (pre-WWII).
32	97	2013 expert opinion on stock status	Stock overfished by all fishers.
32	99	Matching scenarios to options:  Status quo - current actual catch  Option 1 - current legal catch  Option 2 – increase TAC  Option 3 – decrease TAC  No fishing	Scenario number and effect:  1 commercial → recreational → POS ↑ <sup>10</sup>  2 commercial → recreational ↓ POS ↑  3 commercial ↑ recreational ↓ POS ↑  4 commercial ↓ recreational ↓ POS ↓  5 commercial ↓ recreational ↓ POS ↓
33	103	B <sub>x</sub> recovery 1-4% over 5 years	No real change if error levels and uncertainty analysis considered
33	104	Five year projections based on “well above average” recruitment levels in most recent ten years	Dangerously optimistic position given all the relevant caveats stated previously in the IPP.
34	107	“No fishing” leads to recovery to B <sub>40</sub> in eight years	Won’t happen.
36	110	Recovery rate glacial	Cf. page 30, paragraph 94.
36	113	Harvest Strategy Standard (HSS) guideline on stock recovery timeframe	Snapper a depleted stock. Under HSS, need to reduce TAC 56% to achieve rebuild in 16-24 year range. Such a reduction unlikely without major fisher commitment.
<b>OTHER KEY CONSIDERATIONS</b>			
37	117	Habitat of particular significance for fisheries management	★ Critical to research location and extent of these areas and protect them.
37	119	Effects of fishing on spawning	★ Critical to research these effects and

<sup>9</sup> 4% recovery over 16 years calculated from paragraphs 5 and 146.

<sup>10</sup> POS = Pressure on Stock, or catch levels: ↓down ↑ up → same

Page	Paragraph	Topic	Observation
			protect key spawning areas.
39	128	Benthic interactions	★ Critical to research these effects and make management adjustments where necessary.
39	129	Ecosystem indicators – eg. maximum size of fish in Hauraki Gulf decreasing, declines in fish diversity in shallow waters – these are bad signs	★ Critical to research these indicators and make management adjustments where necessary.  If not covered by existing research projects, these four items could be combined into one research project.
<b>PROPOSED RESPONSE</b>			
42	145	Proposed interim target B <sub>40</sub>	OK
44	155	Recovery projections	Recovery slow and fragile.
44	156	TAC of 9,000 tonnes over next five years with minimal impact on sub-stocks - projection based on “recent average recruitment levels”. TAC based on long term levels suggests 3,800 tonnes	TAC of 9,000 tonnes is an outrageous and dangerously irresponsible suggestion, given all the previous information and caveats stated in the IPP.
46	161	SNA 1 high value shared fishery	Yes
46	162,164	SNA 1 is a fully utilized stock	Actually over-utilised. Demand will go up with population growth.  ★ Research needed on demographics of SNA 1 to help project future fishing demand, in particular recreational demand. It is remarkable that to date, no proper demographic studies have been completed on this critical social and economic aspect.
48	172	Recreational catch histories, Figure 6.1.	The Global Financial Crisis (GFC) appears to have had no negative effect on recreational fishing activity.
49	177	Estimates of commercial value	These values are likely to be understated, as no work on industry economic multipliers, opportunity costs, asset replacements and influence of technology, export and domestic market demand trends appears to

Page	Paragraph	Topic	Observation
			have been done. These are standard economic analyses, and it is surprising that they have not be completed and presented.
49	178	Estimates of recreational value	Cf page 24, paragraph 73.  ★Critical research needed to provide a proper economic assessment of the full economic and social value of recreational fishing to the NZ economy and its community. These demands need to be monitored on a year-by-year basis, and matched to demographic studies on projected population growth and recreational fishing demand.
52	192	Remove commercial MLS and require all catch to be landed	Warrants serious consideration
53	194	Fishing method mortality	★Research need – industry led
<b>PROPOSED SNA 1 MANAGEMENT OPTIONS</b>			
54	198	Long term trend shows stock levels still going down	Current management clearly not sustainable.
54	199	Long term $B_x$ will continue to decline unless TAC reduced by approximately 20%	Current commercial and recreational fishing pressures are continuing to deplete the fishery. This is not a “commercial” or “recreational” problem, it is everybody’s problem.
55	203	Only Option 3 – reduce TAC by 500 tonnes – decreases pressure on the fishery	Cf page 32, paragraph 99. However, the biology and uncertainties involved make this reduction of no consequence. A reduction of at least 20% (1,500 tonnes) would be required to be effective.
56-76	205-311	Discussion of Options 1-3  Option 1 - no change  Option 2 – increase TAC 7%  Option3 – decrease TAC 7%	
	211	Short term projections on recruitment levels used again,	The precautionary principle, an important accepted principle of sustainability

Page	Paragraph	Topic	Observation
		despite previous caveats	management, does not appear to be part of the MPI ethos when managing vulnerable natural resources.
	221	Recreational catch exceeds allowance by 31%	Commercial fishers have a right to complain if recreational over-catch is not constrained by MPI!
	234	Recreational bag limit and recreational MLS tools to manage recreational fishing impacts on the resource	Various combinations possible.
	293	Proportional allocations of TAC	Various combinations possible.
<b>FUTURE MANAGEMENT OF SNA 1</b>			
76	313	Stakeholder input critical	Agree
76	314	Development of long term management strategy	Top priority
76	315	Research underway to source important information for decision-making	Support extension of research efforts, given the national priorities associated with the SNA 1 snapper fishery.
77	317	Long term management strategy develop over next two years	Agree with 2015 target date.

Key:    📌 *Key information*  
           ★ *Research need*

Source: MPI 2013a,b,c

## 7 Appendix 2: References

Economic Research Associates Pty Ltd (2010): Cutting the Cake in a Shared Fishery with a Minimally Managed Non Commercial Sector, April 2010, Nedlands, Western Australia.

Bruce W. Hartill, Tim G. Watson & Richard Bian (2011) Refining and Applying a Maximum-Count Aerial-Access Survey Design to Estimate the Harvest Taken from New Zealand's Largest Recreational Fishery, North American Journal of Fisheries Management, 31:6, 1197-1210, DOI: [10.1080/02755947.2011.646454](https://doi.org/10.1080/02755947.2011.646454)

Kerr G N and Latham N (2011): "The Value of Recreational Inshore Marine Fishing", 2011. Proceedings of the New Zealand Agricultural and Resource Economics Society Annual Conference, August 2011, Nelson.

Ministry for Fisheries (2008): Harvest Strategy Standard for New Zealand Fisheries, Ministry of Fisheries — October 2008, Wellington.

Ministry for Primary Industries (2012): Aquatic Environment and Biodiversity Annual Review (2012), Wellington.

Ministry for Primary Industries (2013a): Fisheries Assessment Plenary May 2013: Stock Assessments and Yield Estimates, June 2013 (087\_SNA\_2013), Wellington.

Ministry for Primary Industries (2013b): Fisheries Assessment Plenary May 2013: Stock Assessments and Yield Estimates Volume 1, Wellington.

Ministry for Primary Industries (2013c): Review of sustainability and other management controls for snapper 1 (SNA 1), MPI Discussion Paper No: 2013/31, July 2013, Wellington.

South Australian Centre for Economic Studies (1999): Value of New Zealand Recreational Fishing, November 1999, Adelaide and Flinders Universities.