Ministry for Primary Industries
Manatū Ahu Matua

Review of sustainability and other management controls for bluenose (BNS 1, 2, 3, 7 and 8)

MPI Discussion Paper No: 2013/21

Prepared for the Ministry for Primary Industries
by the Inshore Fisheries Management Team

ISBN No: 978-0-478-41460-8 (online)
ISSN No: 2253-3907 (online)

July 2013

New Zealand Government

Growing and Protecting New Zealand

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SUSTAINABILITY REVIEW OF FISH STOCKS 2013

This Initial Position Paper (IPP) provides the Ministry for Primary Industries' (MPI's) initial views on proposals for inshore fish stock sustainability measures and other management controls for the 01 October 2013/14 fishing year.

MPI has developed this IPP for the purpose of consultation as required under the Fisheries Act 1996 (the Act). MPI emphasises the views and recommendations outlined in the paper are preliminary and are provided as a basis for consultation with stakeholders.

In August 2013, MPI will compile the Final Advice Paper (FAP) for the attached proposal. This document will summarise MPI's and stakeholder's views on the issues being reviewed, and provide final advice and recommendations to the Minister for Primary Industries. A copy of the FAP and the Minister's letter setting out his final decisions will be posted on the MPI website as soon as these become available. Hard copies will be available on request.

DEADLINE FOR SUBMISSIONS

MPI welcomes written submissions on the proposals contained in the IPP. All written submissions must be received by MPI no later than 4pm on Friday, 23 August 2013.

Written submissions should be sent directly to:

Inshore Fisheries Management
Ministry for Primary Industries
P O Box 2526
Wellington 6011

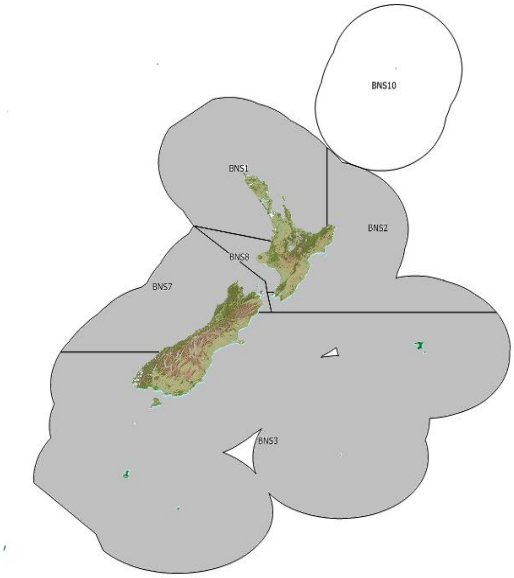
or emailed to FMsubmissions@mpi.govt.nz

OFFICIAL INFORMATION ACT 1982

All submissions are subject to the Official Information Act and can be released (along with the personal details of the submitter) under the Act. If you have specific reasons for wanting to have your submission or personal details withheld, please set out your reasons in the submission. MPI will consider those reasons when making any assessment under the Act.

REVIEW OF SUSTAINABILITY AND OTHER MANAGEMENT CONTROLS FOR BLUENOSE (BNS 1, 2, 3, 7 AND 8)

Figure 1: Quota Management Areas (QMAs) for bluenose



INTRODUCTION

1. The Ministry for Primary Industries (MPI) is seeking tangata whenua and stakeholder information and views to inform a review of catch limits and other management measures for bluenose in Quota Management Areas (QMAs) 1, 2, 3, 7 and 8 (BNS 1, 2, 3, 7 and 8, see Figure 1).[1]
2. MPI proposes the following options for the total allowable catches (TACs), total allowable commercial catches (TACCs) and associated allowances (Table 1).[2]

Table 1: Proposed TACs, TACCs and allowances for BNS 1, 2, 3, 7 and 8, combined

Option	Combined TAC (t)	Combined TACC (t)	Combined Allowances		
			Customary Māori (t)	Recreational (t)	Other sources of fishing-related mortality (t)
Option 1 (Status Quo)	1195	1100	9	63	23
Option 2	704	620	9	63	12

1 BNS 10 has a TACC of 10 tonnes and no reported catches.

2 For Option 2, reductions are to be spread proportionately across the BNS QMAs. Proposed options for individual QMAs are set out in full in Table 1.2.

CONTEXT

3. The combined TACs for the bluenose QMAs are not considered to be sustainable. When assessed as a single biological stock within NZ fisheries waters, current bluenose stock size ($B_{CURRENT}$) is below the target (40% B_0)[3] and as likely as not[4] to be below the soft limit (20% B_0).[5]

4. The reduction proposed in this paper is the final of a series of three phased reductions begun in 2011. The phased reduction approach is designed to provide industry time to adjust to large management changes over time and to provide clear indication (although each management decision is made separately) of future management direction.

5. TACs for bluenose management areas are set under section 13 of the Fisheries Act 1996 (the Act). Section 13 requires the Minister for Primary Industries[6] (the Minister) to set TACs for each of the five bluenose management areas (BNS 1, 2, 3, 7 and 8) that enable them to be maintained at, or move towards, a level at or above the level that will produce the maximum sustainable yield[7] (B_{MSY}).

6. The available information on BNS 1, 2, 3, 7 and 8 is insufficient to enable reliable estimates of B_{MSY}. Where reliable estimates of B_{MSY} are not available, s 13(2A) of the Act requires the Minister to use the best available information to set a TAC that is not inconsistent with the objective of moving the stock towards or above B_{MSY}. Current TACs may result in a slower rebuild and may be inconsistent with maintaining stocks at, or moving them towards, B_{MSY}.

7. As bluenose in NZ fisheries waters is considered to be a single biological stock, discussion in this paper will largely refer to combined TACs, TACCs, and allowances. However, s 13 requires the Minister to make separate decisions for each bluenose stock (see Table 3).

Rebuild Plan

8. The *Harvest Strategy Standard for New Zealand's Fisheries*[8] (the *Harvest Strategy Standard*) provides guidance for targets and limits to be set for fisheries and fish stocks. According to the *Harvest Strategy Standard,* where a stock size is below the soft limit, a formal time-constrained rebuilding plan is required. The *Draft Operational Guidelines for New Zealand's Harvest Strategy Standard*[9] (the *HSS Guidelines*) set out the recommended timeframe for such rebuilding plans. This is expressed relative to the time that it would take the stock to return to the target level in the absence of fishing (T_{MIN}). The *HSS Guidelines* suggest the plan should allow stocks to be rebuilt to the target level between T_{MIN} and $2xT_{MIN}$.

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3 B_0 is the virgin biomass; the average biomass of the stock in the years before fishing started.

4 'As likely as not' means there is a 40 to 60% probability of the stock being below the soft limit. Current stock size has been estimated at 14-27% B_0.

5 The Harvest Strategy Standard default soft limit for bluenose.

6 The Minister for Primary Industries exercises the powers and responsibilities of the Minister of Fisheries under the Act.

7 Maximum sustainable yield is defined in s 2 of the Act as: '...the greatest yield that can be achieved over time while maintaining the stock's productive capacity, having regard to the population dynamics of the stock and any environmental factors that influence the stock'.

8 Ministry of Fisheries 2008.

9 Ministry of Fisheries, 2008.

9. In 2011, the then Minister of Fisheries and Aquaculture agreed to a plan aimed at rebuilding bluenose stocks to the target[10] within $2xT_{MIN}$ (20-26 years). This involved a three-year phased reduction to catch limits (see Table 2). The first and second stages have already been carried out, with reductions to TACs, TACCs, some allowances and changes to recreational bag limits,[11] and increases to deemed values to incentivise fishers to balance catch with annual catch entitlement (ACE). However, separate decisions are required in regard to catch limits for 2013/14.

Table 2: 2011 Rebuild Plan – TACs, TACCs and allowances, by year

Year	Total Combined TACs (t)	Total Combined TACCs (t)	Total Combined Customary Māori Allowances (t)	Total Combined Recreational Allowances (t)	Total Combined Other Sources of fishing-related Mortality (t)
2010/11	2477	2325	42	63	47
2011/12	1685	1580	9	63	33
2012/13 (Current Settings)	1195	1100	9	63	23
2013/14	704	620	9	63	12

10. Although this paper presents an option to continue with the rebuild plan described above, it is open to the Minister to decide on another approach, including phasing in the final reduction over another period of time, for example. MPI invites submissions on any alternatives that stakeholders would like the Minister to consider when making his decision.

Management Approach

11. Bluenose stocks are managed under the draft National Fisheries Plan (the Finfish Plan) for Inshore Finfish.[12] The Finfish Plan is an MPI policy document in use July 2011. It sets out management objectives for inshore finfish stocks, including bluenose. Within the Finfish Plan, stocks are grouped based on the characteristics of biological vulnerability and desirability to fishers. The management approach and objectives are tailored accordingly.

12. Bluenose stocks are Group 3 stocks within the Finfish Plan. Objectives for the Group 3 stocks include:

- Stock sustainability: Maintain relative stock abundance at or above a target reference level.

13. The Finfish Plan's strategies for managing Group 3 stocks include establishing stock- or fisheries-specific harvest strategies that are compatible with the *Harvest Strategy Standard*.

14. The harvest strategy for bluenose will establish a target reference level of abundance. However, a harvest strategy is not yet developed for bluenose. In the interim, the *Harvest*

10 40% B_0 - see below for further.

11 The change in recreational bag limit r mean that limit is now 5 for all areas. The change came into effect in May 2012.

12 The Fisheries Plan has not been formally approved under the Act.

Strategy Standard default proxy for B_{MSY} for low productivity stocks (like bluenose) has been used. That default proxy is 40% B_0.[13]

Previous Review

15. Bluenose TACs were last reviewed in 2012. In October 2012, the combined TACs were reduced from 1685 tonnes (t) to 1195 t, the combined TACCs were reduced from 1580 t to 1100 t and the combined allowances for other sources of fishing-related mortality were reduced from 33 t to 23 t. The combined customary Maori allowances and recreational allowances remained unchanged, at 9 t and 63 t, respectively. The 2012 review was the second of three planned reviews, the first being in 2011.

Biological Characteristics of Bluenose

16. Bluenose is a long-lived species, with an estimated maximum age of 76 years, and has a low natural mortality.[14] These biological characteristics (high longevity and low natural mortality) indicate that bluenose is a low productivity stock.

17. Males and females are thought to mature around 15 to 17 years of age and lengths between 60 and 65cm. Spawning probably peaks from February to April, annually. No distinct spawning grounds have been identified for bluenose in New Zealand waters.

18. Bluenose distribution ranges from near surface to depths of 1200 metres, with numbers highest at around 400 metres depth. Depth distribution changes with size, with individuals generally moving to deeper waters as they grow. Bluenose may also migrate to shallower waters during the day to feed.

19. This paper assumes a single biological stock for bluenose in New Zealand waters. Biological stock boundaries are not known for New Zealand bluenose, but similarities in catch-per-unit-effort (CPUE) trends between each of the five bluenose QMAs suggests there may be just one biological stock across all these areas, or a strong relationship between the fish in these areas. Tagging studies have shown the species is capable of extensive migration, which suggests the single stock hypothesis is plausible. However, there is no conclusive information available to confirm this hypothesis or alternate hypotheses of stock relationships.

Stock Status

20. The level of stock that can support the maximum sustainable yield (B_{MSY}) is not known for bluenose. However, MPI will work with stakeholders to develop a harvest strategy for bluenose. This will confirm a minimum target reference level, and hard and soft limits.[15] In the interim, a proxy for B_{MSY} – 40% B_0 – has been accepted by the Plenary (and MPI, pending further discussion with stakeholders) as the minimum target reference level. This is consistent with the *Harvest Strategy Standard* guidance on low productivity stocks.

13 MPI has accepted 40% B_0 as the target for bluenose pending further discussion with stakeholders.

14 The Plenary considers natural mortality rate, M, is unlikely to be great than 0.1.

15 A stock's soft limit is the biomass limit below which the requirement for a formal, time-constrained rebuilding plan is triggered.

21. A stock assessment in 2011 assessed current stock size for bluenose at below 40% B_0 and as likely as not (40 to 60% likelihood) below the soft limit reference point (20% B_0).[16] The stock assessment assumed a single New Zealand biological stock. Model projections indicated that the TACs prior to October 2010 would cause the stock to continue to decline and that it would fall below the hard limit.[17]

22. The 2011 stock assessment provides the best available information on stock status and how future stock size is expected to change under different catch levels. Model uncertainties (for example, the rate of natural mortality and the assumption of a single stock) are considered when determining appropriate management options.

23. The commercial fishing industry has instituted a catch sampling programme for bluenose stocks. The programme aims to gather catch-at-age data to enable estimations of year class strength, so as to help monitor the status of bluenose stocks in future. However, information is not yet available from that programme to inform management options. Industry has also undertaken management strategy evaluation work for bluenose. This is due to be presented the Northern Inshore Science Working Group (the Working Group) on 20 June 2013. This information will be noted in final advice to the Minister.

BNS FISHERIES

Commercial

24. The commercial fishing sector harvests the greatest portion of bluenose. Total reported landings of bluenose by the commercial sector are shown below in Figure 2. Total reported landings by QMA are shown in Appendix 1 (Figure 2).

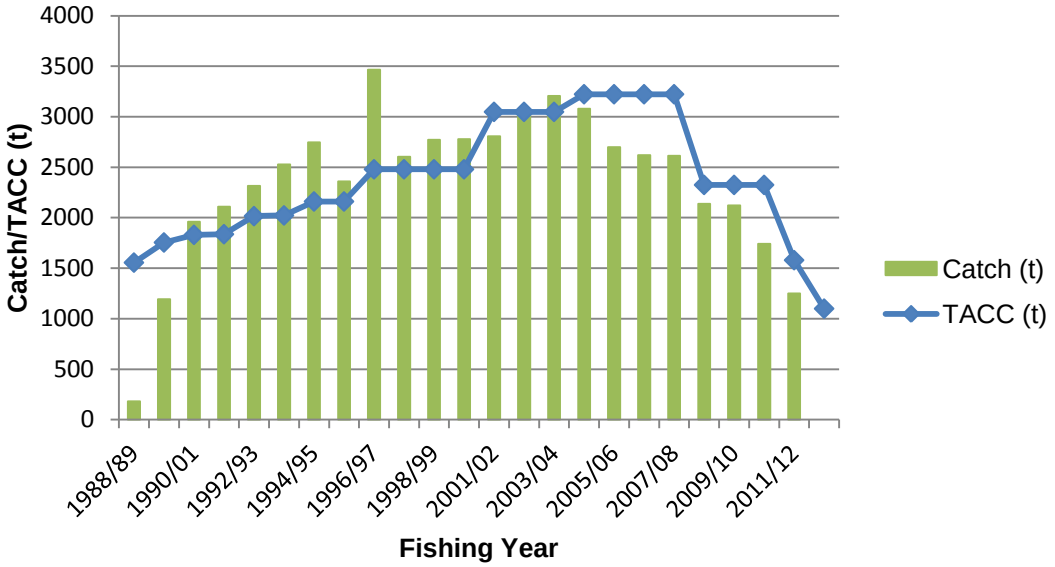
25. BNS 1 and BNS 2 are the two largest of the five bluenose fisheries. In BNS 2, bluenose is primarily taken by target bottom longline fishing. There is also a substantial target line fishery for bluenose in the Bay of Plenty and off Northland (BNS 1).

26. Target line fisheries for bluenose exist off the west coast of the South Island (BNS 7) and the central west coast of the North Island (BNS 8). Bluenose in BNS 7 is also taken as bycatch in the hoki trawl fishery.

16 Current biomass was estimated by the stock assessment to be between 14 and 27% B_0.

17 A hard limit is the biomass limit below which fisheries should be considered for closure. The *Harvest Strategy Standard* default hard limit for BNS is 10% B_0.

Figure 2: Combined Reported Catch Landings and TACCs (t) for BNS 1, 2, 3, 7 and 8 from 2001/02 to the 2011/12 fishing year



27. In BNS 3, although historically a bycatch in ling and hapuku target fisheries, target bluenose lining has predominated since 2003/04. There has been a consistent bycatch of bluenose in the alfonsino target bottom trawl fishery and bluenose has been targeted in a mid-water trawl fishery since the early 2000s. The bottom trawl fishery in BNS 3 has diminished.

28. A small amount of target setnet fishing for bluenose occurred in the Bay of Plenty until 1999, and occurs sporadically in BNS 2. Setnet catches off the east coast of the South Island have been a mix of target and bycatch in ling and hapuku target sets.

29. Between 1992 and 2009, all bluenose fishstocks were included, for at least some of the time, in Adaptive Management Programmes (AMPs). The goal of the AMP was to increase commercial utilisation in low knowledge stocks while providing a cost-effective way of obtaining more information on stock size.

30. Under AMPs, the bluenose combined TACCs increased by over 1000 t (Figure 2). In response to information suggesting declines in abundance in BNS 1, 2, 3, 7 and 8, TACCs in these QMAs were reduced in 2008 to a combined TACC of 2480 t and additional research was initiated. This included the stock assessment, which forms the basis of the management response and rebuild plan.

31. Commercial harvest levels were identified as a key driver of the decline in stock abundance. The Plenary noted other drivers such as recruitment and environmental factors may also have contributed.

Recreational

32. The total combined recreational allowances for all bluenose QMAs is 63 t. This allowance level is based on 2000/01 diary survey estimates of recreational catch. However, information on recreational catch of bluenose is uncertain.[18] Anecdotal information from Recreational Forum members suggests recreational fisher interest in bluenose may have increased in recent years.

33. Due to the need for better information on recreational harvests, in 2011/12 MPI commissioned new recreational research (a large-scale, multi-species study, LSMS) to obtain better harvest estimates for a range of stocks. Estimates from the LSMS are available, but have yet to be finalised and are subject to change. The estimates for bluenose are based on a relatively small number of events and fishers, and as a result are subject to a relatively high uncertainty. They also do not include amateur catch taken on charter vessels or by commercial fishers under s111 approvals.[19] The interim estimates have been released at this time only for use as background information for the purposes of this discussion paper and should not be used for any other purposes.

34. The interim LSMS estimate for BNS 1, 2, 3, 7 and 8 combined is 34.8 t. This suggests that across these QMAs, the 2011/12 recreational catch was well within the combined allowances set for those areas. However, the interim estimate for BNS 1 is 28.15 t (CV[20] 40%) and the s111 reported catch was 1.06 t If accurate, this would put recreational catch in excess of the recreational allowance for that area. Finalised estimates will be available to include in the final advice to the Minister.

Māori Customary

35. Before making a decision about changing the TAC, the Minister is required to provide for the input and participation of tangata whenua and to have particular regard to kaitiakitanga (s12 (1) of the Act).

36. Information on customary Māori catch of bluenose is incomplete and uncertain. For those tangata whenua groups operating under the customary fishing regulations,[21] Tangata Tiaki/Kaitiaki are required to provide MPI with information on customary harvest of fish. This includes information about customary fishing authorisations granted and the species/quantities of fisheries resources taken under those authorisations. However, for those tangata whenua groups still operating under regulations 27 and 27A of the Fisheries (Amateur Fishing) Regulations 1986, reporting is not mandatory.

18The Recreational Technical Working Group has indicated its concerns with telephone/diary surveys. The following summarises that group's views on the estimates:

"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."

19 Section 111 of the Act allows for recreational take from commercial vessels with prior approval from MPI's Director-General.

20 Coefficient of variation: a statistic commonly used to represent variability or uncertainty. For example, if a harvest estimate has a CV of 40%, this means that the error in the estimate will typically be about 40% of the estimate. So, the true value in this case will likely be within the range 28.15 ± 11.26 tonnes (11.26 being 40 % of 28.15).

21 Fisheries (Kaimoana Customary Fishing) Regulations 1998 and Fisheries (South Island Customary Fishing) Regulations 1999.

37. There is one reported authorisation for BNS 7 in the Cook Strait for the April-June 2011 quarter; the quantity approved was 30 (with no unit of measure given) and no actual quantity harvested was declared. There is also one reported authorisation for BNS 3 for the October-December 2012 quarter; the quantity approved was one (also with no unit of measure) and it was declared as harvested. No other customary authorisations have been reported for bluenose in any QMA since 2007. This may indicate that tangata whenua use of customary Māori harvesting rights for taking bluenose (as opposed to commercial or recreational) is low at this time or it may indicate there is an impediment (eg lack of appropriate vessels or gear) to customary fishers accessing bluenose.

38. Iwi fisheries forums, and the plans they develop, provide for iwi input and participation into fisheries planning processes. Bluenose stocks are part of various iwi fisheries management plans as follows:

- BNS 1 – is included in the Te Hiku o Te Ika Fisheries Management Plan (the Te Hiku Plan). The Te Hiku Plan was ratified in March 2012 by iwi representatives of the Te Hiku Fisheries Forum.[22] For Te Hiku o Te Ika, bluenose is identified as a taonga species.
- BNS 2 – There is currently no iwi forum plan that includes BNS 2. However, MPI has invited local iwi to provide information or comments on the proposals in this paper.
- BNS 3 and 7 – are found in the area covered by the Te Waipounamu Iwi Forum Fisheries Plan 2011/16 developed by Te Waka a Māui me Ona Toka Forum.[23] Te Waka a Māui me Ona Toka regard all species as taonga species.[24]
- BNS 8 – Te Tai Hauāuru Fisheries Forum[25] have also finalised an iwi forum plan. BNS 8 fall within the area to be covered by that plan. Te Tai Hauāuru regard all species as taonga species.

39. Species that are priorities for iwi for management action will be identified through ongoing dialogue between iwi and MPI as part of MPI's annual fisheries planning processes. No additional actions have been proposed for bluenose.

Other Sources of Fishing-Related Mortality

40. Quantitative estimates of other sources of fishing-related mortality are not available for bluenose. The combined allowance for other sources of fishing-related mortality is currently set at 23 t, 2% of the TACC. The proposed decreases (to 12 t) in allowances for other sources of fishing-related mortality approximately retain this proportion.

22 Te Hiku o Te Ika Fisheries Forum comprises mandated representatives from: Ngati Kuri Trust Board Inc., Te Urungi o Ngati Kuri Ltd, Te Runanga Nui o Te Aupouri Trust, Te Aupouri Fisheries Ltd, Nga Taonga o Ngai Takoto Trust, Ngai Takoto Holdings Lltd, Te Runanga o Te Rarawa and Te Waka Pupuri Putea Ltd.

23 Te Waka a Māui me Ōna Toka Forum includes representatives of Ngāti Toa, Te Atiawa, Ngāti Rarua, Ngāti Apa ki Te Ra To, Ngāti Kuia, Rangitane, Ngāti Koata, Ngāti Tama and Ngāi Tahu.

24 However, bluenose is not specifically identified as such in the Forum's plan.

25 Te Tai Hauāuru Fisheries Forum is made up of mandated iwi representatives from all of the iwi between the Mokau river and Waikanae. However, some iwi are not currently in a position to engage and have not signed the Forum's plan. Those members of the Forum who signed the Forum's plan include: Ngati Mutunga, Te Ati Awa, Te Ati Haunui a Paparangi, Ngati Apa, Ngati Hauiti, Rangitaane o Manawatu, Muaupoko, Ngati Raukawa and Ati Awa Ki Whakarongotai.

41. This allowance covers such things as incidental mortality caused by fishing methods and unreported discarding of unwanted catch. MPI has no information to suggest that the current proportion (around 2% of the TACC) needs to be changed.

OTHER KEY CONSIDERATIONS

42. When making a decision concerning the TAC for a stock, the Minister for Primary Industries [26] (the Minister) must have regard to the interdependence of stocks, the biological characteristics (discussed above) and any environmental conditions affecting the stock. MPI is unaware of any environmental conditions affecting bluenose stocks that are of relevance to the Minister's decision.

43. Bluenose is preyed upon by other fish species, such as broadbill swordfish. The significant decline in bluenose biomass may be having an impact on predator species like broadbill swordfish, subject to the availability of alternative food sources. A decline in abundance may also affect other complex interactions within the ecosystem. For example, bluenose is likely to be an important predator, feeding on tunicates, fish, squid and crustaceans. A change in predation pressure may alter competitive interactions between these species. MPI cannot quantify the scale of the impact of low abundance of bluenose on species interactions, but rebuilding bluenose stocks should improve any existing imbalance.

44. The Minister must also have regard to the provisions of sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000 when dealing with stocks in the area of the Hauraki Gulf Marine Park. Section 7 recognises the national significance of the Hauraki Gulf, including its capacity to provide for the relationship of tangata whenua with the Gulf and the social, economic, recreational and cultural well-being of people and communities. Section 8 sets out objectives for the management of the Hauraki Gulf. Objectives of relevance include: the protection and enhancement of the natural, historic, and physical resources of the Hauraki Gulf; the protection and enhancement of those resources of the Hauraki Gulf with which tangata whenua have an historic, traditional, cultural and spiritual relationship; and the maintenance and enhancement of the contribution of the resources of the Hauraki Gulf to the social and economic well-being of the people and communities of the Hauraki Gulf and New Zealand. Resources of the Hauraki Gulf would include bluenose. So, rebuilding the bluenose stock is consistent with these objectives.

26 The Minister for Primary Industries exercises the powers and responsibilities of the Minister of Fisheries under the Fisheries Act 1996.

PROPOSED RESPONSE

45. As bluenose has been assessed as being below the target, the primary management objective of the TAC review is to rebuild the stock size. MPI considers setting TACs for BNS 1, 2, 3, 7 and 8 at a level that will allow the stocks to rebuild to 40% B_0 is consistent with s 13 of the Act and the Finfish Plan objectives[27] for bluenose.

46. MPI's management approach and the rebuild plan is based on a single stock model, as assumed by the stock assessment. However, under the Act, bluenose is managed as five areas for the purpose of management (BNS 1, 2, 3, 7 and 8). MPI is considering the option of reducing the TAC for each QMA to a level that ensures that the combined TACs do not exceed the maximum estimated catch that will allow for a rebuild of the New Zealand stock within $2xT_{MIN.}$ This timeframe is guided by the *Harvest Strategy Standard* and *HSS Guidelines* for rebuilding a stock. However, MPI notes this guidance does not override the provisions of the Act that the Minister must consider when setting TACs.

47. The stock assessment in 2011 estimated that T_{MIN} for bluenose is between 10 and 13 years. It estimated the maximum combined catch (TACs) that would allow for a rebuild to 40% B_0 in $2x\ T_{MIN}$ (20 to 26 years) ranged between 574 and 840 t.

48. Along with setting TACs, the Minister is required to set TACCs. This is done under s 20 of the Act. In setting TACCs, the Minister must, under s 21, make allowances for customary non-commercial fishing interests, recreational interests, and all other mortality to the stock caused by fishing.

49. The best available information to inform TAC setting for BNS 1, 2, 3, 7 and 8 is the 2011 stock assessment. Current combined TACs (1100 t) are higher than the maximum catches that will allow the stock to rebuild within $2 \times T_{MIN}$. Option 2 would reduce total combined TACs to 704 t to provide for stocks to rebuild within $2 \times T_{MIN}$.

50. Based on the best available information, Option 2 is more consistent with the objective of moving the BNS 1, 2, 3, 7 and 8 stocks towards, or maintaining them above, the level that can produce the maximum sustainable yield. Option 1 is less likely to be consistent and will require future reductions in TACs to levels lower than proposed under Option 2 in order to ensure bluenose stocks rebuild within $2 \times T_{MIN.}$

51. However, the Act requires the Minister to have regard to such social, cultural and economic factors as he considers relevant, when he is considering the way and rate at which a stock is moved towards or above B_{MSY} (s 13(3)). This means, he may delay or reduce the level of further cuts (and potentially increase the time required for the stock to rebuild or allow the stock to decline further in the interim) if he considers the short-term impacts on commercial fishers need to be mitigated, for example.

27 See above, under Need to Act and Management Approach.

Summary of Options

52. MPI is consulting on the following management options for setting TACs, TACCs and allowances for BNS 1, 2, 3, 7 and 8 (Table 3):

Table 3: Proposed TACs, TACCs and allowances for BNS 1, 2, 3, 7 and 8 (combined and by stock)

Stock(s)	Option	TAC (t)	TACC (t)	Recreational allowance (t)	Māori customary allowance (t)	Allowance for other sources of fishing related mortality (t)
Total combined for BNS 1, 2, 3, 7 and 8	1 Status quo	1195	1100	63	9	23
	2	704	620	63	9	12
BNS 1	1 Status quo	425	400	15	2	8
	2	251	230	15	2	4
BNS 2	1 Status quo	474	438	25	2	9
	2	279	247	25	2	5
BNS 3	1 Status quo	194	171	18	2	3
	2	114	93	18	2	1
BNS 7	1 Status quo	69	62	3	2	2
	2	40	34	3	2	1
BNS 8	1 Status quo	33	29	2	1	1
	2	20	16	2	1	1

OPTION 1 (STATUS QUO)

53. Option 1 proposes retaining current TACs, TACCs and allowances for fishing-related mortality as follows (and see Table 4):

- Retain the combined TACs of 1195 t:
- Retain the combined TACCs of 1100 t:
- Retain the combined allowances for other sources of fishing-related mortality of 23 t (around 2% of TACCs); and
- No changes to allowances for Māori customary and recreational allowances.

54. At this combined TAC, the stocks are not projected to rebuild to 40% B_0 within $2xT_{MIN}$. This may mean that further reductions will be required in future. But, this option allows for more information to be gathered that might support an alternative management approach. It also reduces short-term economic impacts and gives fishers more time to adjust to lower catch limits. As noted above, under the Act, the Minister must consider socio-economic factors such as these when deciding the way in which and the rate at which a stock is moved towards or above B_{MSY} (s 13(3))

55. Current catch limits are likely not to be within the range that would allow for a rebuild to the target of 40%B_0 within the time suggested by the *Harvest Strategy Standard* and *HSS Guidelines*. If so, further reductions would be necessary in the short-term. Therefore, in the absence of new information, MPI would likely seek to review bluenose stocks again in the near future under this option.

56. Previously, some in the commercial fishing industry disagreed about some of the assumptions used in the stock assessment. Option 1 allows time for more information to be gathered that could help to confirm or refute those assumptions in the context of current levels of utilisation. For example, the Plenary notes alternative stock hypotheses (to the single stock hypothesis) have not been explored.

57. However, under the Act, the Minister must take into account the principle that absence of, or uncertainty in, any information should not be used as a reason for postponing or failing to take any measure (including reducing TACs) to achieve the purpose of the Act (s 10). Having taken that principle into account, the Minister may decide to await new information that might be available within a reasonable timeframe before making any further cuts. Any available relevant information from the industry's catch sampling or management strategy evaluation work will be considered in MPI's advice to the Minister.

58. Option 1 would also allow more time for commercial fishers to adjust to reduced catch limits. Though, MPI notes that further reductions were signalled by the rebuild plan for this year and fishers may have already made provisions for cuts, including making business or investment decisions in anticipation. Short-term economic costs would be least under this option. However, short-term gains may be at the expense of longer-term losses, as stocks will possibly not rebuild as quickly if further reductions are delayed.

59. For 2013/14, Option 1 provides for fishers to land an additional 480 t compared to Option 2. Based on 2011/12 port prices, this would be worth approximately an additional $2.3 million compared to Options 2. MPI notes that these figures may not be realised in reality because TACCs may not be fully caught under any option. However, they do provide a useful relative comparison between the options in terms of potential short-term economic costs and benefits. Further socio-economic information is provided in Appendix 2, including information for each of BNS 1, 2, 3, 7 and 8.

60. Under Option 1, TACCs may eventually have to be reduced to lower levels than under Option 2 to ensure a rebuild within $2xT_{MIN}$. Lower catch limits would mean even less available annual catch entitlement (ACE) to cover bycatch compared to Option 2. This could exacerbate problems for fisheries where bluenose is taken as bycatch, such as hoki, ling, alfonsino and hapuku. This might result in reduced utilisation of those fisheries or in illegal discarding of bluenose.

61. The sustainability risks to the stocks are greatest under Option 1 as it may delay the rebuild and stocks will likely remain at low levels for longer. MPI cannot say whether or not there would be further declines in stock size under Option 1, as no projections have been run for this option. Delaying provides the least certainty of a stock rebuild and is less likely to result in bluenose stocks rebuilingd within $2xT_{MIN}$ than Option 2. Any rebuild could be contingent

on further reductions in the short-term, the level and timing of which have yet to be determined.

OPTION 2

62. Option 2 proposes further cuts to TACs, TACCs and allowances for fishing-related mortality, the third and final reduction in the three year phase plan, as follows (and see Table 4):

- A reduction in the combined TACs by 41% from 1195 t to 704 t;
- A reduction in the combined TACCs by around 44% from 1100 tonnes to 620 t;
- A reduction in the combined allowances for other sources of fishing-related mortality from 23 t to 12 t (maintaining it at around 2% of TACCs); and
- No changes to allowances for Māori customary and recreational allowances.

Table 4: Proposed total combined TACs, TACCs and allowances under Option 2

Year	Total Combined TACs (t)	Total Combined TACCs (t)	Total Combined Customary Māori Allowances (t)	Total Combined Recreational Allowances (t)	Total Combined Other Sources of Fishing-Related Mortality (t)
Current settings	1195	1100	9	63	23
2013/14	704	620	9	63	12

63. Option 2 proposes completion of the phased reductions begun in 2011, with the final of three proposed consecutive cuts. This phased reduction is based on the maximum commercial catch predicted by the stock assessment model that would allow the stocks to rebuild to $40\%B_0$ within 14-28 years, which is within 2 x T_{MIN}.[28]

64. Compared with Option 1, the rebuild will likely be initiated sooner, further reductions in stock size are less likely, and the stocks remain at levels that may be below the soft limit for less time under Option 2. Therefore, this option has the lowest sustainability risk of the two options. However, this option has the highest short-term socio-economic costs and it does not allow further time for fishers to adjust to lower catch limits.[29]

65. As it has previously been signalled, Option 2 should be expected, and planned for, by the commercial fishing industry. The phased reduction has provided quota owners, fishing companies, and ACE holders time to adjust their budgets and activities, including their ACE distribution or harvesting plans. It has also reduced the risk that TACCs will be over-caught,

28 Option 2 projects bluenose stocks to rebuild to BTGT within 2 x TMIN – 14-28 years. This is based on taking the projections from the 2011 stock assessment of 16-30 years and deducting two years, as the first two steps in the phase reduction were taken in 2011 and 2012. MPI considers the most likely actual rebuild timeframe from 2013 will be around 18-24 years.

29 However, the proposed further reductions were signalled in 2011. So, fishers should already be aware of the potential to need to make further adjustments.

as management of bycatch is less likely to be an issue in the first few years and the phased approach has provided time to plan for the change.

66. However, reducing the combined total TACC is likely to reduce target bluenose fishing in most areas and may impact bluenose bycatch fisheries in some areas. In recent years, for some bluenose stocks (BNS 3 and BNS 7), bycatch levels were close to or exceeded the proposed TACCs under Option 2 (see Appendix 1, Figure 4). This could mean target fisheries such as hoki, ling, alfonsino and häpuku/bass are constrained by the availability of bluenose ACE. MPI is not able to quantify this impact on target fisheries where bluenose is a bycatch. MPI notes if bycatch exceeds the TACCs this could impact the timeframe required for rebuilding bluenose stocks.

67. For Option 2, it is proposed the TAC cuts be borne by the commercial sector via reductions to TACCs. The commercial sector takes the greatest proportion of bluenose overall and has benefitted from TAC increases in the past. As bluenose is considered to be one biological stock, Option 2 proposes that the cut is spread proportionally across the TACs (and TACCs) from all the QMAs. However, there are other choices that could be made for how the cut is spread across QMAs.

68. In 2012, some commercial industry submissions suggested the reductions should not be spread proportionately across the five bluenose stocks, in part because of concerns about the impact on other target fisheries. Under the assumption that there is one biological stock, redistributing any reductions should not change the overall outcome in terms of the rebuild. However, as there are differences in ACE and port price (see Appendix 2), overall economic losses could be greater under a non-proportional reduction across all QMAs.

69. Based on recent bycatch levels, proportional reductions proposed under Option 2 will have the greatest impacts on BNS 3 and BNS 7. Redistributing the reductions would redistribute the impacts to other bluenose stocks. Depending on how reductions are redistributed, the overall impacts could be increased. There is currently insufficient information on which to base a redistribution of the proposed reductions. But the distribution of reductions could be changed if there is evidence to support this.

70. In 2011, the initial position paper noted the following in regard to potential impacts from bluenose TACC cuts on commercial fishers:

- In 2009/10, 134 fishers landed bluenose. For the majority of these fishers (77%), bluenose made up less than 10% of their total landed catch weight. This suggests the majority of fishers currently taking bluenose are not overly dependent on bluenose landings and may be able to absorb the impact of the proposed reductions.
- For some fishers, bluenose landings represent a significant proportion of their catch and income. The reduction in the availability of ACE is likely to force these fishers to either target other stocks or stop fishing altogether. In 2009/10, there were 15 fishers for whom bluenose represented over 30% of the weight of their total landed catch. The Seafood Industry Council (SeaFIC) estimated that around 18 companies were financially dependent on target bluenose bottom-line fishing.

- Many affected fishers may initially transfer effort to other long-line fisheries. SeaFIC noted that, with long-line catches of hapuku/bass and ling already being a high proportion of the TACCs in these fisheries, there is little capacity in those fisheries to absorb transfer of effort from the bluenose fishery.

71. As the current TACCs only came into effect in October 2012, MPI does not yet have data to assess the actual impacts on commercial fishers. Therefore, MPI considers that the above information is currently the best available information about the potential impacts on commercial fishers of Option 2.

72. Compared with Option 1, Option 2 has higher short-term costs; an additional 480 t would be cut from the combined TACCs, also worth around $2.3 million.[30] Longer-term costs could be lower, if a rebuild is achieved sooner than under Option 1.

73. Customary Māori allowances and recreational bag limits have already been reduced as a result of decisions made by the Minister of Fisheries and Aquaculture in 2011. MPI has no information that suggests further changes are needed for the customary Māori or recreational sectors, either to allowances or bag limits. MPI considers that the recently reduced bag limit (to 5 for all QMAs) will constrain overall recreational take within the existing combined allowances.

OTHER MANAGEMENT MEASURES

74. Since 1 October 2012, bluenose from all areas have been included in catch reporting requirements for charter vessels providing services to recreational fishers. Information from catch reporting could be a potential opportunity for monitoring the recovery of bluenose.

75. As noted above, a harvest strategy is to be confirmed for bluenose, in consultation with stakeholders. This will confirm a target reference level and hard and soft reference points.

76. Deemed value[31] rates were increased and recreational daily bag limits were decreased, as a result of decisions made by the Minister of Fisheries and Aquaculture in 2011. MPI does not propose any changes to deemed value rates for 2013/14. MPI does not propose any other management measures at present.

FUTURE CONSIDERATIONS

77. The decreases to the TACs and TACCs proposed under Option 2 are likely to result in changes to fishing practices, such as the withdrawal of vessels and changes in the spatial and temporal distribution of fishing effort. This may affect the ability to monitor the fishery effectively as there is an increased risk of disrupting the continuity of the CPUE series, which is currently used as the indicator for bluenose abundance.

30 Based on port price. These figures should be taken as comparative only, as TACCs may not be fully caught.

31 Deemed values apply to commercial fishers that do not hold sufficient annual catch entitlement (ACE) to cover their catches. Deemed value rates are generally set at levels intended to incentivise fishers to balance catch with ACE.

78. As stocks rebuild, the amount of bluenose taken as bycatch may increase. This is most likely to occur in BNS 2, 3 and 7 where the historical bycatch has been known to exceed the level of catch proposed under Option 2 (see Appendix 1, Figure 4). Where increases are not easily accommodated within catch limits, this can create an incentive for dumping and/or misreporting. Should bycatch levels threaten rebuild of the bluenose stock, management measures for bluenose or associated fisheries may need to be reviewed. However, MPI considers that any such situation is likely to be some years away, given the expected slow rate of increase in abundance.

CONCLUSION

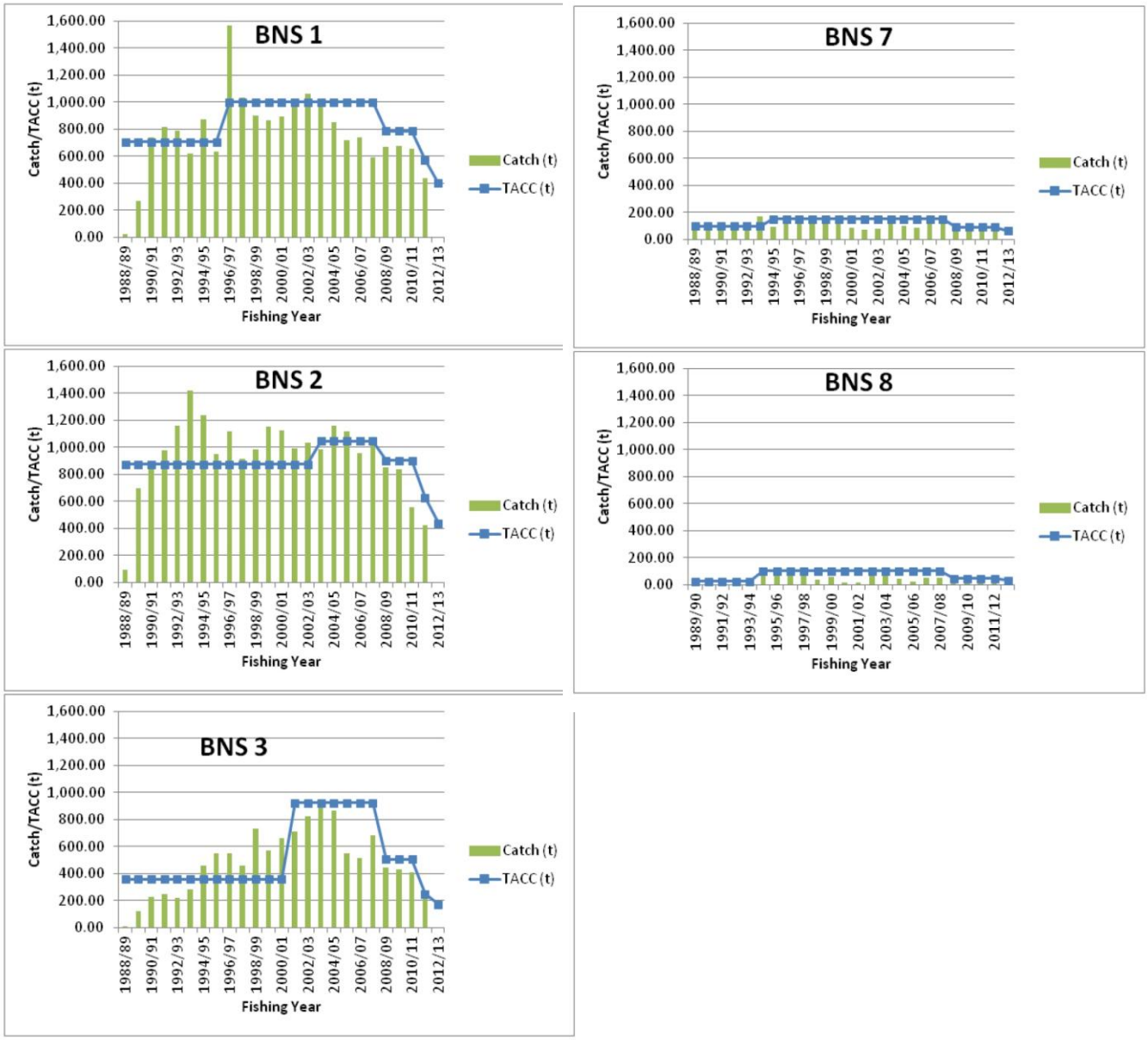
79. The combined TACs for bluenose stocks are not considered to be sustainable. When assessed as a single biological stock, B_{2010} was below 40% B_0 and biomass may not rebuild within 2 x T_{MIN} under current TACs.

80. MPI is seeking tangata whenua and stakeholder views and information to inform the review of catch limits for BNS 1, 2, 3, 7 and 8. In particular, MPI is seeking information about the extent of the impacts, so far, of the TACC reductions in 2011 and 2012, as well as views on the likely impacts of the two options presented in this paper, both for bluenose as a whole, and for each area (BNS 1, 2, 3, 7 and 8). In addition, MPI is seeking information about the appropriate allocation of any further reduction in catch limits across BNS 1, 2, 3, 7 and 8.

81. It is important to note that the Minister has broad discretion in exercising his powers of decision-making. He will make his own independent assessment of the information presented to him by both MPI and stakeholders before determining making a final decision.

APPENDIX 1 – CATCH INFORMATION

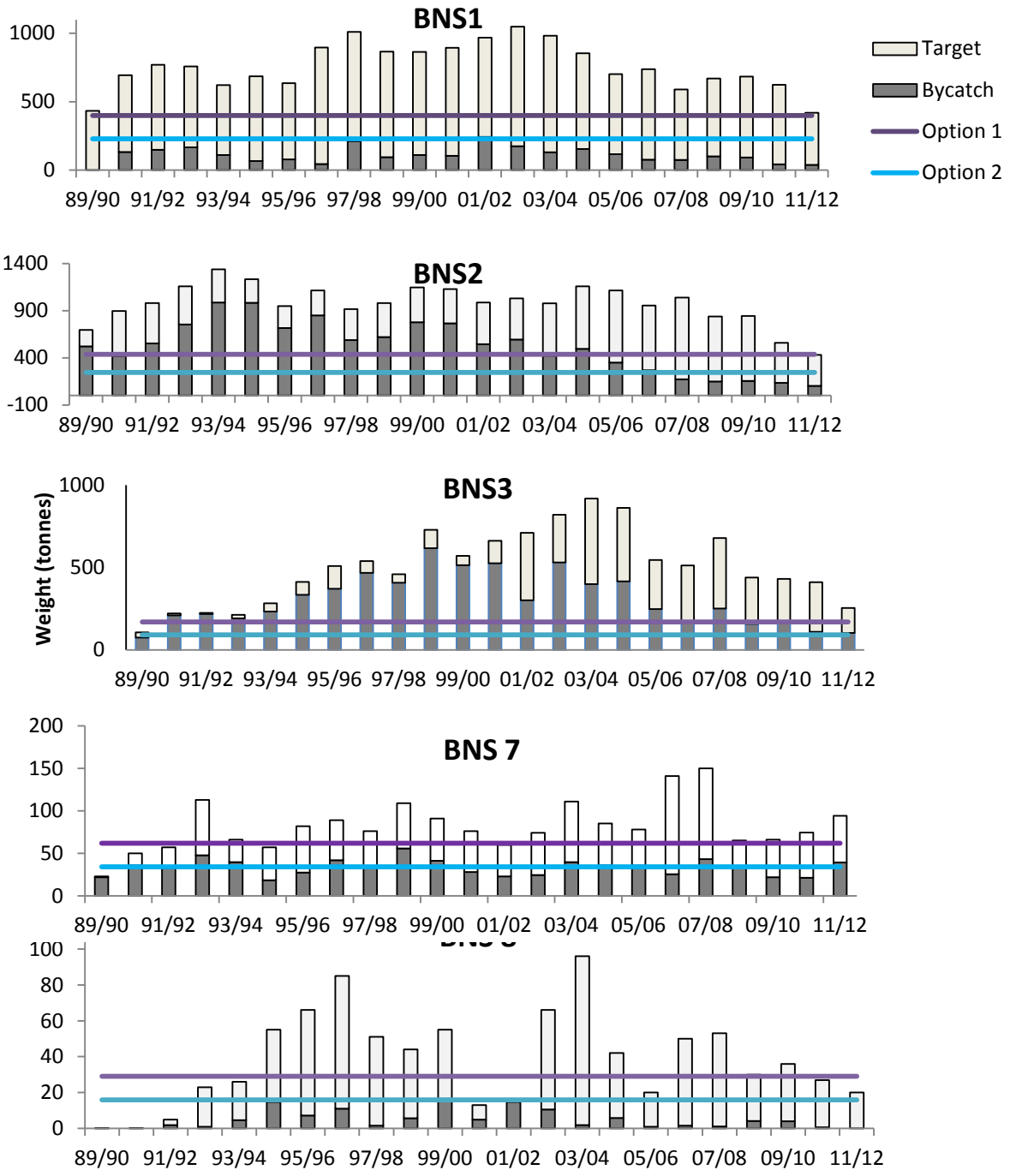
Figure 3: Bluenose catch (tonnes) versus TACC (tonnes) by QMA and fishing



Bycatch

Figure 4 is based on a figure taken from the bluenose characterisation report. Data has been updated using catch landing data linked to target and bycatch species through the trip key. The bars show the weight of bluenose caught commercially in tonnes as either target (light grey) or bycatch (dark grey). The lines show the TACC (t) under Option 1 (purple) and Option 2 (blue).

Figure 4: Bycatch and target catch (tonnes) by QMA, overlaid by TACCs proposed for each option



APPENDIX 2 – SOCIO-ECONOMIC INFORMATION

The nature of the economic impact to each BNS fishery can be examined by looking at the current indicators of the value of the fishery (Table 5).

Table 5: Current indicators of the economic value of the BNS fisheries

QMA	2012/13 Port Price ($/kg)	2012/13 Export Price ($/kg)*	2012/13 ACE Price ($/kg)**	2012/13 Quota Price ($/kg)***
BNS1	$5.53	$8.67	$2.40	$27.48
BNS2	$5.12	$8.67	$2.31	$28.57
BNS3	$3.03	$8.67	$1.60	$10.49
BNS7	$3.43	$8.67	$1.56	$13.92
BNS8	$4.75	$8.67	$1.13	N/A****

* Greenweight export price for H&G BNS from October 2012 to March 2013.

** Average price from October 2012 to March 2013.

*** Average price from October 2001 to March 2013.

**** Not enough quota trades of BNS8 to determine a valid quota price.

Port price is the price that fishers are paid when landing their fish to a Licensed Fish Receiver (LFR). Port prices are calculated by surveying Licensed Fish Receivers (LFRs) annually to see what they are paying for each species of fish landed to them. However, the following limitations are known about port prices:

- Survey replies may be skewed because industry know they are used to set cost recovery levies.
- Does not differentiate harvest method – fish caught by one method over another may command a price premium.
- Ownership structure can influence port price – port prices change depending on whether the LFR is catching and landing the fish themselves, using contract fishers or taking fish from an independent fisher.
- Does not reflect price differential for different grades of fish – fishers receive different landed prices depending on the size of the fish caught.

The 2012/13 port prices were based on a survey carried out during the 2011/12 fishing year so the port prices are out of date by a year. The 2013/14 port prices will be finalised in June 2013. Therefore MPI has included the greenweight export price for headed and gutted (H&G) BNS to provide a picture of what price LFRs are getting from exporting BNS. MPI believes the true landed value of BNS lies somewhere between these two figures so both will be used in the analysis of potential changes to landings revenue from the proposed options.

The projected potential changes in landings revenue in 2013/14 is summarised below in Table 6. The values have been calculated based on:

- The change in the TACCs from Option 1 (Status Quo) and those being proposed in Option 2 (this assumes the whole TACC is being caught in each QMA); and
- The 2012/13 port price[32] and the 2012/13 export price.

Table 6: Summary of potential changes to landings revenue in 2013/14

	Option 1		Option 2	
QMA	**Port Price**	**Export Price**	**Port Price**	**Export Price**
BNS 1	$0	$0	-$940,100	-$1,473,900
BNS 2	$0	$0	-$977,920	-$1,655,970
BNS 3	$0	$0	-$236,340	-$676,260
BNS 7	$0	$0	-$96,040	-$242,760
BNS 8	$0	$0	-$61,750	-$112,710
TOTAL	**$0**	**$0**	**-$2,312,150**	**-$4,161,600**

Option 2 will have an impact on fishers who land BNS. The impact will be felt the hardest in BNS 1, BNS 2 and BNS 3.

MPI has calculated the potential impact on ACE holders and traders from the options in this paper. Some quota holders do not fish their own ACE and generate revenue by selling their ACE to other parties. Any changes to the TACC level for these BNS fisheries will have an impact on the revenue these quota holders can generate from selling their ACE. It should be noted that ACE prices will likely increase due to lower supply of ACE, but MPI does not believe this will offset the loss from the reduction in ACE generated by their quota holdings.

Table 7: Summary of loss of ACE revenue in 2013/14 – based on 2012/13 ACE price

QMA	Option 1	Option 2
BNS1	$0	-$408,000
BNS2	$0	-$441,210
BNS3	$0	-$124,800
BNS7	$0	-$43,680
BNS8	$0	-$14,690
TOTAL	**$0**	**-$1,032,380**

The impact on quota values will be harder to predict. The TACC reductions proposed in Option 2 will lower the overall quota value of the BNS fisheries in the short-term. However, if the management strategy is viewed as positive and likely to lead to better catches in the future (and possible TACC increases), then quota prices may increase over the medium to long-term.

The obvious trade off in any fisheries management decision involving potential TACC reductions is trading short-term losses in term of forgone catch and ACE revenue for longer-term gains in catch and

32 Port price is the surveyed average price paid by licensed fish receivers ('LFRs') to independent fishers for fish landed to those LFRs, as set or updated by rule 12 of the Fisheries (Cost Recovery) Rules 2001 (see rule 3: Interpretation). It has not yet been set for 2012/13.

possible TACC increases. Quota value is the best tool to examine this trade off as quota value reflects the net present value of future earnings from ACE. If fishers believe that the TACC reductions will work, quota trading and quota prices would not be expected to increase over the medium-term. This would mean there will be little quota trading and quota prices available for analysis.