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Ministry for Primary Industries
Manatū Ahu Matua



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Briefing Note on Sustainability and Management Measures for Highly Migratory Species

Purpose:

This final advice paper asks that you utilise your powers under the Fisheries Act 1996 to amend the catch limits of three highly migratory stocks. The Ministry for Primary Industries (MPI) consulted with stakeholders on 29 June 2012 on a number of sustainability and management measures relating to highly migratory species and now presents the following advice based on the submissions received.

Minister	Action Required:	Minister's Deadline
Minister for Primary Industries	Note the contents of this Final Advice Paper; and Decide on the recommendations contained in this Final Advice Paper.	13 September 2012 to allow time for the preparing and publication of <i>Gazette</i> notices.
Cc: Associate Minister for Primary Industries		

Contact for telephone discussion (if required)

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Executive Summary

1. This briefing summarises changes to catch allowances and other sustainability measures proposed in the attached final advice paper, for the 2012/13 fishing year, for southern bluefin tuna, porbeagle and mako shark stocks.

Southern Bluefin Tuna

2. At its most recent meeting in October 2011, the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) adopted a management procedure designed to rebuild the stock and a range of measures to ensure the total global catch limit is not exceeded. The Commission has agreed on the global catch limits for southern bluefin tuna and country allocations within these totals for a three year period.
3. You recently agreed to an in-season increase to the total allowable catch (TAC) for southern bluefin fishery for the current season (the TAC reverts back to the baseline of 420 tonnes at the end of the current fishing year) from 420 tonnes to 800 tonnes, to reflect the national allocation to New Zealand agreed by the CCSBT. The management procedure adopted by CCSBT now provides some certainty regarding future allocations and MPI proposes that these decisions can now be reflected in an increase to the baseline total allowable catch and total allowable commercial catch (TAC/TACC) on an ongoing basis. CCSBT has also agreed a limited provision for the carryover of uncaught catch from one year to the next subject to conditions. MPI therefore also proposes to reinstate the domestic provision to allow underfishing carry forward for this species to provide greater flexibility to industry in managing its catch against annual catch entitlements.

Recommendation

4. MPI recommends that you set the TAC for 2012–13 to the level of New Zealand's country allocation set by CCSBT for 2013, with allowances for non-commercial fishing, other sources of mortality, and a total allowable commercial catch (TACC) as outlined in Table 1.

Table 1: Current and proposed 2012-13 TAC and sector allocations for southern bluefin tuna

	Total Allowable Catch (tonnes)	Maori Customary Allowance (tonnes)	Recreational Allowance (tonnes)	Other Sources of Fishing-Related Mortality (tonnes)	Total Allowable Commercial Catch (tonnes)
Current	420	1	4	2	413
Proposed	830	1	8	4	817

Porbeagle Sharks

5. Porbeagle shark have been managed within the QMS since 2004. The current TAC of 249 tonnes was set on the basis of historical catch. Since that time, commercial

catches have been substantially lower than the historical levels on which those limits were set. The biological characteristics of the species, such as slow growth and low fecundity, make the porbeagle shark particularly vulnerable to overexploitation and there is continued uncertainty regarding the status of the stock of which the New Zealand fishery is a part.

6. There are concerns that fishing under the current TAC/TACC level would put the stock under considerable pressure should the full allocation be reached and that a more cautious approach to the catch limit should be considered. MPI consulted with stakeholders on a range of options from the most conservative (precautionary) to one that provides for limited expansion of current catch levels.
7. Preliminary consultation with stakeholders indicated they had concerns over the initial options proposed, which may have limited potential for future expansion in the fishery. MPI therefore proposed an alternative option for total allowable catch that better reflects the current fishing effort, and lowers the risk of overexploitation should catches expand from current levels.

Recommendation

8. MPI recommends that you set the porbeagle shark TAC for 2012–13 at 129 tonnes, with allowances for non-commercial fishing, other sources of mortality, and a total allowable commercial catch (TACC) as outlined in Table 2.

Table 2: Current and proposed 2012-13 TAC and sector allocations for porbeagle sharks

	Total Allowable Catch (tonnes)	Maori Customary Allowance (tonnes)	Recreational Allowance (tonnes)	Other Sources of Fishing-Related Mortality (tonnes)	Total Allowable Commercial Catch (tonnes)
Current	249	2	10	22	215
Proposed	129	2	6	11	110

9. MPI also proposes that standard differential deemed values be implemented for the stock whereby catch that is 20% in excess of Annual Catch Entitlement (ACE) incurs a higher rate.

Mako Sharks

10. Mako shark is another species of shark that is considered internationally to be at risk of overfishing because of its low productivity. In New Zealand, catches have been significantly lower than the TAC of 512 tonnes ever since it was introduced into the QMS in 2004 and there is now concern that the catch limits are set at a level that would put the stock at risk should they ever be reached. As with porbeagle sharks, MPI consulted on a range of options and is proposing an alternative TAC/TACC catch level which better reflects the current fishing effort and lowers the risk of overexploitation should catches expand.

Recommendation

11. MPI recommends that you set the mako shark TAC for 2012–13 at 276 tonnes, with allowances for non-commercial fishing, other sources of mortality, and a total allowable commercial catch (TACC) as outlined in Table 3.

Table 3: Current and proposed 2012-13 TAC and sector allocations for mako sharks

	Total Allowable Catch (tonnes)	Maori Customary Allowance (tonnes)	Recreational Allowance (tonnes)	Other Sources of Fishing-Related Mortality (tonnes)	Total Allowable Commercial Catch (tonnes)
Current	512	10	50	46	406
Proposed	276	10	30	36	200

12. MPI also proposes that standard differential deemed values be implemented for the stock whereby catch that is 20% in excess of ACE incurs a higher rate.

Background

Southern Bluefin Tuna

13. Southern bluefin tuna is a highly migratory species that is seasonally present in New Zealand waters where it is valued by commercial and non-commercial fishers. New Zealand cooperates with other countries in conservation and management of southern bluefin tuna because of its highly migratory nature. Since 1994, this cooperation has taken place through the Commission for the Conservation of Southern Bluefin Tuna (CCSBT). CCSBT's objective is to ensure, through appropriate management, the optimum utilisation of southern bluefin tuna.
14. CCSBT meets annually to agree on measures required to achieve this objective, including consideration of reports from its Scientific Committee (which includes an independent panel) and Compliance Committee. At its most recent meeting in October 2011, CCSBT adopted a management procedure designed to rebuild the stock and a range of measures to ensure the total global catch limit is not exceeded. The Commission also increased the Global TAC from 9,449 to 10,949 t for 2013 and agreed country allocations within this total.
15. This proposal looks to implement domestically the measures agreed through the CCSBT including the setting of a TAC which reflects New Zealand's national allocation and the reintroduction of carry-forward provisions.

Porbeagle Sharks

16. Porbeagle sharks are a highly migratory species that can be found in South-west Pacific waters including New Zealand's. There is considerable uncertainty surrounding the status of the stock and information, although improving, does not

currently allow for a stock assessment. Porbeagle sharks were introduced into the Quota Management System (QMS) on 1 October 2004 under a single Quota Management Area (QMA). The original TAC was set at a level that was based on average commercial catches at the time and the Ministry for Primary Industries (MPI) propose that the purpose of the Act can be better achieved now by setting an alternative TAC level.

17. The biological characteristics of the species, such as slow growth and low fecundity, make the porbeagle shark particularly vulnerable to overexploitation. These characteristics, the high level of uncertainty surrounding the stock and obligations under New Zealand's National Plan of Action for the conservation and management of Sharks (NPOA-Sharks) have led the MPI to propose a more cautious approach to the management of this species in New Zealand waters.
18. Regional cooperation on the management of porbeagle shark takes place under the umbrella of the Western & Central Pacific Fisheries Commission (WCPFC) of which New Zealand is a member. As a signatory to the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean, New Zealand must adopt a cautious approach in the domestic management of its highly migratory stocks – including porbeagle sharks.
19. The New Zealand catch of porbeagle sharks comes largely from bycatch in the commercial longline and midwater trawl fisheries. Both recreational and customary catch are considered to be low.

Mako Sharks

20. The shortfin mako shark (*Isurus oxyrinchus*) is a highly migratory species occurring worldwide in tropical and temperate waters. Shortfin mako sharks are primarily caught as a bycatch on tuna longline fisheries operating within New Zealand fisheries waters, and are also targeted recreationally. Shortfin mako sharks are a highly migratory species listed on Schedule 3 of the Act and in order to manage the stock New Zealand must cooperate with other countries in its conservation and management. As noted above, the vehicle for this cooperation has been the Western and Central Pacific Fisheries Commission (WCPFC).
21. Shortfin mako sharks are subject to the Quota Management System (QMS) and were introduced in 2004 along with a range of other highly migratory species taken as target and bycatch of surface longline fisheries. The TAC/TACC set at the time of introduction was intended to limit the potential expansion in catch and ensure that it remained a bycatch fishery based on concerns about declining abundance of shortfin mako shark in New Zealand fisheries waters at that time.
22. It is now seven years since catch controls were placed on shortfin mako shark. During that period, on average, only 20% of the TAC/TACC has been caught and there are signs that shortfin mako shark may be increasing in abundance as a result. This suggests that a TAC/TACC at the level of recent catches may be more appropriate to the fishery given both domestic and international concern regarding the vulnerability of this species.

Consultation

23. MPI released an initial position paper (IPP) for consultation on your behalf on 29 June 2012, which proposed changes to the management of southern bluefin tuna and porbeagle and mako sharks. Ten submissions were received during the consultation period and are available under a separate cover.
24. A number of submitters commended MPI for its collaborative approach in developing these proposals and also welcomed the opportunity to input during the drafting stage.
25. Submissions were received from the following individuals/organisations:
 - New Zealand Sport Fishing Council (NZSFC)
 - NZ Recreational Fishing Council (NZRFC)
 - Aotearoa Fisheries Limited (AFL)
 - The Solander Group
 - Seafood Industry Council (SeaFIC)
 - S.W. Morrison
 - Sanford Limited
 - Ben Turner
 - Royal Forest & Bird Protection Society of New Zealand (Forest and Bird)
 - Te Ohu Kaimoana (TOKM)

Summary of Options

Southern Bluefin Tuna

26. MPI proposed that the TAC for 2012–13 be set to the level of New Zealand's country allocation set by CCSBT for 2013, with allowances for non-commercial fishing, other sources of mortality, and a total allowable commercial catch (TACC) as outlined in Table 4.

Table 4: Options consulted on for STN 1

	Total Allowable Catch (tonnes)	Maori Customary Allowance (tonnes)	Recreational Allowance (tonnes)	Other Sources of Fishing-Related Mortality (tonnes)	Total Allowable Commercial Catch (tonnes)
Current	420	1	4	2	413
Proposed	830	1	8	4	817

27. MPI also proposed reinstatement of provisions for carry-forward of unfished ACE (discussed further under other management issues below).

Porbeagle Sharks

28. In the IPP, MPI consulted on the following options, as outlines in Table 5.

Table 5: Options consulted on for POS1

	Total Allowable Catch (tonnes)	Maori Customary Allowance (tonnes)	Recreational Allowance (tonnes)	Other Sources of Fishing-Related Mortality (tonnes)	Total Allowable Commercial Catch (tonnes)
Option 1	88	2	6	7	73
Option 2	106	2	6	9	89
Option 3	129	2	6	11	110

29. MPI also proposed that standard differential deemed values be implemented for the stock whereby catch that is 20% in excess of ACE incurs a higher rate.

Mako Sharks

30. In the IPP, MPI consulted on the following options, as outlined in Table 6.

Table 6: Options Consulted on for MAK 1

Option	Total Allowable Catch (tonnes)	Maōri Customary Allowance (tonnes)	Recreational Allowance (tonnes)	Other sources of Fishing-Related Mortality (tonnes)	Total Allowable Commercial Catch (tonnes)
Option 1	173	10	30	23	110
Option 2	189	10	30	25	124
Option 3	276	10	30	36	200

31. MPI also proposed that standard differential deemed values be implemented for the stock whereby catch that is 20% in excess of ACE incurs a higher rate.

32. MPI has considered the submissions received on its initial proposals and in relation to:

- a. Southern bluefin tuna notes the support of commercial stakeholders for the increase in TAC, allowance and TACC proposed and the strong support from commercial stakeholders for the reinstatement of underfishing provisions. MPI considers that a unilateral decision by New Zealand to retain the status quo TAC as proposed by non-commercial stakeholders would be to forgo the significant utilisation benefits from the increase proposed for little benefit to the stock of southern bluefin tuna as a whole.

- b. Porbeagle shark, considers that the best balance between the concerns over the impacts on utilisation of the reductions in TAC, allowances and TACC proposed and the need to take a more cautious approach to the setting of a TAC for this vulnerable species is achieved by setting the TAC allowances and TACC at the highest level proposed (Option 3 below).
 - c. Mako shark, considers that the best balance between the concerns over the impacts on utilisation of the reductions in TAC, allowances and TACC proposed and the need to take a more cautious approach to the setting of a TAC for this vulnerable species is achieved by setting the TAC allowances and TACC at the highest level proposed (Option 3 below).
- 33. A more detailed analysis of submissions and evaluation of statutory considerations relevant to your decision are contained in the attached advice papers.

Recommendations

Southern Bluefin Tuna (STN 1)

34. MPI recommends that you:

- a) **Agree** to set the TAC for STN 1 at 830 tonnes for the 2012-13 fishing year under section 14 of the Fisheries Act (**Option 3**) and set the following allowances:
- A customary allowance of 1 tonnes
 - A recreational allowance of 8 tonnes
 - An allowance for other sources of fishing related mortality of 4 tonnes
 - A total allowable commercial catch of 817 tonnes.

Agreed / Not Agreed

- b) **Agree** to the reintroduction of carry-forward provisions for unfished ACE.

Agreed / Not Agreed

Porbeagle Sharks (POS 1)

35. MPI recommends that you:

- a) **Agree** to set the TAC for POS 1 at 129 tonnes for the 2012-13 fishing year under section 14 of the Fisheries Act (**Option 3**) and set the following allowances:
- A customary allowance of 2 tonnes
 - A recreational allowance of 6 tonnes
 - An allowance for other sources of fishing related mortality of 11 tonnes
 - A total allowable commercial catch of 110 tonnes.

Agreed / Not Agreed

- b) **Agree** to the application of standard differential deemed value rates to POS 1.

Agreed / Not Agreed

36. MPI notes that you may alternatively:

- a) **Agree** to retain the *status quo* of 249 tonnes which includes:
- A customary allowance of 2 tonnes
 - A recreational allowance of 10 tonnes
 - An allowance for other sources of fishing related mortality of 22 tonnes
 - A total allowable commercial catch of 215 tonnes;

Agreed / Not Agreed

or

- b) **Agree** to set the TAC for POS 1 at 88 tonnes for the 2012-13 fishing year under section 14 of the Fisheries Act (**Option 1**) and set the following allowances:
- A customary allowance of 2 tonnes
 - A recreational allowance of 6 tonnes
 - An allowance for other sources of fishing related mortality of 7 tonnes
 - A total allowable commercial catch of 73 tonnes;

Agreed / Not Agreed

or

- c) **Agree** to set the TAC for POS 1 at 106 tonnes for the 2012-13 fishing year under section 14 of the Fisheries Act (**Option 2**) and set the following allowances:
- A customary allowance of 2 tonnes
 - A recreational allowance of 6 tonnes
 - An allowance for other sources of fishing related mortality of 9 tonnes
 - A total allowable commercial catch of 89 tonnes.

Agreed / Not Agreed

Mako Sharks (MAK 1)

37. MPI recommends that you:

- a) **Agree** to set the TAC for MAK 1 at 276 tonnes for the 2012-13 fishing year under section 14 of the Fisheries Act (**Option 3**) and set the following allowances:
- A customary allowance of 10 tonnes
 - A recreational allowance of 30 tonnes
 - An allowance for other sources of fishing related mortality of 36 tonnes
 - A total allowable commercial catch of 200 tonnes.

Agreed / Not Agreed

- b) **Agree** to the application of standard differential deemed value rates to MAK 1.

Agreed / Not Agreed

38. MPI notes that you may alternatively:

- a) **Agree** to retain the *status quo* of 512 tonnes which includes:
- A customary allowance of 10 tonnes
 - A recreational allowance of 50 tonnes

- An allowance for other sources of fishing related mortality of 46 tonnes
- A total allowable commercial catch of 406 tonnes;

Agreed / Not Agreed

or

- b) Agree** to set the TAC for MAK 1 at 173 tonnes for the 2012-13 fishing year under section 14 of the Fisheries Act (**Option 1**) and set the following:

- A customary allowance of 10 tonnes
- A recreational allowance of 30 tonnes
- An allowance for other sources of fishing related mortality of 23 tonnes
- A total allowable commercial catch of 110 tonnes;

Agreed / Not Agreed

or

- c) Agree** to set the TAC for MAK 1 at 189 tonnes for the 2012-13 fishing year under section 14 of the Fisheries Act (**Option 2**) and set the following:

- A customary allowance of 10 tonnes
- A recreational allowance of 30 tonnes
- An allowance for other sources of fishing related mortality of 25 tonnes
- A total allowable commercial catch of 124 tonnes.

Agreed / Not Agreed

39. **Note** that you may choose an alternative level of TAC for either of the three species subject to review and within that TAC set allowances for recreational and customary fishing and other sources of mortality, and total allowable commercial catch.

Noted

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/ / 2012

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Southern Bluefin Tuna

STN 1 stock status

40. The global population of southern bluefin tuna has had high levels of fishing since the 1960s, and as a result the spawning biomass is currently at a low level.
41. The advice from CCSBT's Scientific Committee in 2009 was that spawning stock biomass for southern bluefin tuna was about 5% or less of the unfished spawning stock biomass. In response to this advice, global catches were reduced by 20% in 2009.
42. In July 2011, CCSBT's Scientific Committee again considered the status of the stock, based on a review of various indicators. The Scientific Committee's advice on the estimated status of the stock remains unchanged from the advice provided in 2009. The current spawning stock status was noted to be very low, although the Scientific Committee did note a range of factors that suggest there are more young fish than anticipated, giving a more favourable long-term outlook for the stock. In particular, catch per unit effort has increased in a number of longline fisheries, and aerial surveys indicate substantially improved recruitment in recent years.
43. The Scientific Committee's analysis is consistent with indicators from the New Zealand fishery, where catch rates increased in 2010 and 2011. Scientific observers and fishers noted more small fish in the New Zealand fishery, and catch rates were up to twice the level experienced in 2009. While these are positive signs of an end to the series of poor recruitments, it will take some time for these cohorts to mature and increase the size of the spawning stock biomass, which remains at a very low level.

Decisions adopted by CCSBT to address stock status of southern bluefin tuna

44. At its annual meeting in October 2009, CCSBT considered advice from its Scientific Committee that meaningful reductions in catch were required to reduce the risk of stock collapse for southern bluefin tuna.
45. As part of an overall package of measures, CCSBT agreed in 2009 to reduce global catches by an average of 20% (to 9,449t) in each of the next two fishing years. For New Zealand, this decision applied to the 2010 (i.e. 2009–10) and 2011 (i.e. 2010–11) fishing years. At the same time, CCSBT agreed members' allocations, including an increase in allocation for New Zealand. Other members' allocations were reduced further in order to achieve the 20% reduction in global catches whilst accommodating the changes to New Zealand's allocation. This was part of a long-standing agreement to implement a Memorandum of Understanding dating back to establishment of the CCSBT Convention in 1994.
46. The annual CCSBT meeting in October 2011 adopted a science-based management procedure that is designed to respond adaptively to information on stock status and recommend appropriate global catch limits that will allow the southern bluefin tuna spawning stock to rebuild to 20% of its unfished level by 2035 (with a 70% probability).

Adopting this management procedure is a significant advance for CCSBT, as it sets a clear timeframe for rebuilding the stock and ensures decisions on global catch limits are no longer ad hoc but are set according to an agreed and tested management procedure. The management procedure recommends appropriate global catch limits (in three year blocks) that are designed to achieve CCSBT's rebuilding target to the specified probability.

47. CCSBT also reached agreement on allocating the global TAC between members, leading to allocations for New Zealand as outlined in the table below, and on a provision to allow the carry-forward of under-fishing of up to 20% of the annual national allocation within each three-year quota period.

Table 7: Global TACs and country allocations (for New Zealand) adopted by CCSBT at its 18th annual meeting in October 2011

	2012	2013	2014
Global TAC (tonnes)	10,449	10,949	12,449 or the output of the management procedure for 2015–2017, whichever is lesser
New Zealand allocation (tonnes)	800	830	909 ¹

48. MPI has implemented the CCSBT agreements on catch limits through a series of in-season changes to the current baseline TAC of 420 tonnes including most recently for the 2011–12 fishing year, with an in-season TAC of 800t. This figure will revert to the baseline TAC of 420t at the start of the next fishing year (i.e. 2012–13). With the additional certainty provided by the adoption of the management procedure and the three-year quota blocks, MPI proposed that it is appropriate to make a change to the baseline TAC to better reflect New Zealand's country allocation, rather than the historical allocation of 420t.

Summary of Proposals

49. MPI proposed that the TAC for 2012–13 be set to the level of New Zealand's country allocation set by CCSBT for 2013, with allowances for non-commercial fishing, other sources of mortality, and a total allowable commercial catch (TACC) as outlined in Table 8.

¹ In 2014, an additional 10% of the increase in global catch may be made available to Japan, to reflect its desire to return more rapidly to its full nominal allocation. This follows a period in which Japan's catches were reduced, after the discovery of anomalies in its catches. This positive adjustment is subject to an increase in the TAC and a compliance review. This agreement is outlined in Attachment 15 (Resolution on the Allocation of the Global Total Allowable Catch) of the Report of the Eighteenth Annual Meeting of the Commission, 10-13 October 2011, available at www.ccsbt.org.

Table 8: Proposed TAC and allowances for STN 1 for the 2012–13 fishing year

Total Allowable Catch (tonnes)	Maori Customary Allowance (tonnes)	Recreational Allowance (tonnes)	Other Sources of Fishing-Related Mortality (tonnes)	Total Allowable Commercial Catch (tonnes)
Current				
420	1	4	2	413
Proposed for 2012–13				
830	1	8	4	817

50. MPI also proposed reinstatement of provisions for carry-forward of unfished ACE (discussed further under other management issues below).

Analysis of submissions

51. Ten written submissions were received that contained comments on MPI's initial proposal to increase the TAC, allowances and TACC for southern bluefin tuna. Copies of the submissions are available under separate cover.

Total allowable catch

52. Sanford Limited, Solander, Te Ohu Kaimoana, SeaFIC, Stu Morrison, and Aotearoa Fisheries Limited (AFL) all supported the proposed increase in TAC, noting that the adoption by CCSBT of a robust management procedure provides a stable basis for future setting of global and national catch limits for southern bluefin tuna.
53. Ben Turner was concerned that an increase in the southern bluefin tuna TAC will result in an increase in the cost recovery levies charged for this species and submits that current levies are already too high.
54. ACE that is generated by an in-season increase in TAC does not attract cost recovery levies. An increase in the TAC and subsequently the TACC, will therefore generate additional costs for industry. To offset this, industry has a more certain position in relation to the ACE that will be available in a given year and will not have to await the outcome of any in-season review. Industry submissions in support of the TAC increase proposed emphasise these benefits to the fishery.
55. Forest and Bird oppose any increase in TAC for southern bluefin proposing instead that this should be reduced or at the very least kept at its current level. In support of its position Forest and Bird note the low levels of spawning biomass and the “critically endangered” status assessed by the International Union for the Conservation of Nature (IUCN). Forest and Bird consider that the southern bluefin tuna stock is at risk of further decline and even extinction given the proposed increase in TAC.
56. NZSFC and NZRFC also oppose the increase in TAC proposed citing the low spawning stock status and New Zealand's role as a responsible fishing nation. The NZSFC acknowledges the good work New Zealand has done in international fisheries

commissions and notes that progress has been made in a number of compliance, reporting and research areas. However, NZSFC submit that the CCSBT has been responsible for the management of southern bluefin tuna for over 30 years and a few years ago it was assessed to be in a worse state than ever before. NZSFC believe that supporting a significant increase in national and global quota before the spawning stock biomass has increased, based on the assumption the CCSBT has finally got it right this time is irresponsible.

57. NZSFC believe that the fastest way to rebuild spawning stock biomass is to not increase fishing pressure on immature fish before they are able to contribute to population growth. NZSFC suggest that the time to increase quotas is when the rebuild has occurred, not when a particular assessment model predicts it might occur.
58. NZSFC submit that increasing southern bluefin catch when the scientific advice is that the spawning stock is critically low and continuing to decline is not consistent with a precautionary approach and notes that it will promote tag and release of southern bluefin caught by recreational fishers as its contribution to the conservation of this species.
59. As outlined above MPI considers that the low stock status of southern bluefin tuna is addressed through the overall management strategy agreed by CCSBT, including its adoption of a management procedure to assist with its rebuilding strategy, and its focus on strict compliance with agreed quotas.
60. The key feature of the management procedure is that it responds adaptively to a range of signals from the fishery; when information indicates fish are more abundant, it allows more catch to be taken, but when signals from the fishery are poor, the procedure is precautionary and acts to limit catches.
61. A further specific issue raised by Forest and Bird in support of their opposition to the TAC increase proposed, is their view that there continues to be significant non-reporting of catch in the global fishery.
62. MPI has outlined the significant efforts CCSBT members have undertaken in recent years to improve the compliance of member fleets with global and national allocations. The most significant of these is the catch documentation system which is widely considered to have substantially reduced the risk of non-reported catch. Fishing by non-member countries (Forest and Bird raise China as a specific example) remains an issue
63. MPI considers that neither non-reporting of catch or catch by countries that are not members of CCSBT are sufficient reasons for New Zealand to forego the utilisation benefits of an increase in TAC.
64. NZRFC would support the proposed increase in TAC only if not doing so would result in other member states of CCSBT receiving the unfished New Zealand allocation. CCSBT agreed allocation principles at its meeting in 2011, including setting the shares of individual member countries. MPI considers that now that these shares are agreed, there is less likelihood of pressure from other countries to try to claim catch left uncaught by New Zealand. MPI therefore concludes that the submission from NZRFC is in opposition to the increase in TAC proposed.

Allowances

65. Submissions in support of the TAC increase to 830t also supported the proposals for allowances outlined in Table 2, either directly or implicitly
66. Submissions in opposition to the proposed TAC increase supported retention of the status quo TAC and allowances (NZRFC, NZSFC) or a reduction – albeit the amount of this reduction was not specified (Forest and Bird)

TACC

67. Submissions in support of the TAC increase to 830 tonnes also supported the proposal to increase the TACC from 413 to 817t either directly or implicitly.
68. Submissions in opposition to the proposed TAC increase supported retention of the status quo TACC (NZRFC, NZSFC) or a reduction – albeit the amount of this reduction was not specified (Forest and Bird)

Option analysis

69. MPI proposed only one option for consultation but the status quo TAC of 420 tonnes remains an option that is open to you. This option is preferred by NZSFC and NZRFC. Forest and Bird propose a decrease from the status quo levels but suggest that at a minimum the status quo should be retained. In contrast industry submissions and that of Te Ohu Kaimoana support the increase in TAC proposed albeit that the support of Ben Turner is qualified. Te Ohu Kaimoana in particular notes that the “effective status quo” is a TAC of 800 tonnes reflecting your decision to raise the TAC to this level for the current season indicating that the real increase in TAC is 30 tonnes.
70. Having considered submissions MPI remains of the view that the concerns raised in submissions in opposition to the setting of a TAC at the level of the national allocation agreed to by the CCSBT for southern bluefin tuna for 2012-13 can be addressed and that the increase as proposed would not only have substantial utilisation benefits for industry but also meet your obligations to ensure sustainability. This view is further articulated in the following section which assesses the proposal with respect to your statutory obligations under the Act.

Statutory considerations

71. In setting or varying sustainability measures, you must act in a manner consistent with New Zealand’s international obligations to fishing and the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992. New Zealand’s international obligations are met by the proposal to limit its catch of southern bluefin tuna so that it does not exceed the level of its national allocation. You are also not constrained from setting a lower limit.
72. MPI also considers the proposed management options to be consistent with the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (s 5 (b)). Maori commercial interests will benefit from the increased TAC proposed and an allowance for customary use of the resource has been made

73. In making your decision you should take into account the environmental principles outlined in section 9 of the Act: associated or dependent species should be maintained above a level that ensures their long-term viability; biological diversity of the aquatic environment should be maintained; and habitat of particular significance for fisheries management should be protected. Of particular relevance for the southern bluefin tuna fishery is the need to consider the effect of the fishing method (surface longlining) on protected seabirds that may be caught from time to time. Forest and Bird notes their concern that an increase in TAC for southern bluefin tuna will have implications for protected species bycatch and also calls for increased observer coverage in the fishery at the status quo TAC level. MPI acknowledges that tuna longline fishing creates a risk to seabirds. MPI notes that the effective increase in TAC proposed is only 30 tonnes because you have agreed to a TAC for the current season of 800 tonnes. MPI notes that measures are already in place to manage issues associated with these environmental principles for southern bluefin tuna and does not consider additional measures would be required if you choose to increase the TAC to a level similar to the one that applies in the current season. MPI is also moving to a risk based management approach to seabird mitigation and if, as a result an assessment of the risks from surface longline fishing, further management responses are required (including improved observer coverage) these will be addressed in this context.
74. These considerations are also relevant to your requirement under s. 11(1)(a) to take into account any effects of fishing on any stock and the aquatic environment. Forest and Bird has raised concerns over the potential impacts of an increase in TAC on other stocks and sharks in particular. MPI has proposals to address the sustainability measures for the likely shark bycatch species which take into account the potential for expansion in this and other target fisheries.
75. Section 10 of the Act sets out information principles which should be taken into account, that is decisions should be based on the best available information; any uncertainty in information should be considered; and caution should be applied when information is uncertain, unreliable, or inadequate. The absence of, or uncertainty in any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of the Act.
76. MPI considers the advice from CCSBT's scientific committee to be the best available information on which to base your decisions. Uncertainties in some of the inputs to the stock assessment are addressed within the stock assessment process by developing and testing several scenarios considered as plausible alternatives to the base case. Likewise, the management procedure adopted was tested to determine its robustness to alternative plausible scenarios. It is also designed to respond adaptively to any changes in fishery conditions, based on new information collected from the fishery. As noted by NZSFC the scientific committee of CCSBT is now required to incorporate the precautionary approach in its advice to CCSBT.

Total Allowable Catch

77. The TAC for southern bluefin tuna is able to be set under section 14 of the Act. This section provides an alternative mechanism to s13 for setting TACs for stocks specified in Schedule 3 (including southern bluefin tuna) if you are satisfied that the purpose of the Act is better met in this way.

78. Setting a TAC under s. 14(1) of the Act requires consideration of how to best meet the purpose of the Act as outlined in s. 8 – that is, to provide for utilisation whilst ensuring sustainability. MPI considers the obligation to ensure sustainability is met by managing the New Zealand fishery for southern bluefin tuna in line with international agreements reached by CCSBT. In particular, CCSBT has adopted an adaptive management procedure, whereby new data will be used to update the model and recommend new catch limits to respond to information from the fishery. In recognition of the current low stock status, and some residual uncertainties in the science used to assess the stock, CCSBT chose to modify the outcomes of the management procedure in several important ways for the first years of its operation. These modifications include restrictions on the maximum increase in catch that can be allowed in the first period, and an additional scientific review a year earlier than otherwise scheduled (in 2013), which will be used to re-assess the proposed catch limit for 2014.
79. Setting the TAC to the country allocation set by CCSBT would enable maximum utilisation from the fishery, which will have substantial benefits for fishers. As outlined in the IPP, the southern bluefin tuna fishery is a relatively high value fishery. To date increases in the national allocation have been realised by way of in-season increases in TAC which then revert at the end of each fishing year. The benefits of the current proposal to formalise a long term increase in TAC lie in the greater certainty provided to fishers albeit at some additional cost through higher levies. The increase proposed also makes a further 30t available in the 2012-13 fishing year to reflect the increased national allocation to New Zealand in that year.
80. The additional utilisation benefits provided would need to be weighed against concern over the sustainability of southern bluefin tuna, as discussed above. Although setting the TAC at 830t would be in line with the measures adopted by CCSBT, some stakeholders submit that you should take unilateral action to not fish the full allowable national allocation because of the low stock status. MPI considers this approach would lead to New Zealand forgoing substantial benefits from the fishery for only minimal benefits to the global stock.
81. Relevant objectives: National Fisheries Plan for Highly Migratory Species: Section 11(2A) of the Act outlines factors for you to take into account before setting or varying sustainability measures (including TACs), including any relevant fisheries plans. The Minister of Fisheries approved a National Fisheries Plan for Highly Migratory Species under section 11A of the Act in September 2010. The fisheries plan outlines various management objectives for HMS, along with strategies for achieving the objectives, including:
- a) Maintaining a sustainable fishery for HMS within environmental standards, including encouraging management of HMS at specified target reference points. CCSBT has adopted an interim rebuilding target, and confirmed that the biomass that can produce maximum sustainable yields remains the longer term target. The New Zealand allocations set by CCSBT are consistent with these biomass targets.
 - b) Promoting a viable and profitable tuna fishery, including through negotiating favourable country allocations for New Zealand fishers. Implementation strategies include reviewing management arrangements including catch limits as

required to take into account international agreements. The current review is in line with this strategy.

- c) The fisheries plan outlines objectives for non-commercial use of HMS fisheries, including maintaining/enhancing recreational catch rates for HMS gamefisheries, and ensuring abundant HMS for customary use. Provision is made for non-commercial fishers as part of the proposed TAC and allowances. Forest and Bird submit that an increase in TAC is inconsistent with this objective however this position is not reflective of recent increase in availability of southern bluefin tuna to all users in New Zealand waters in recent years
82. Sections 11(2)(c) and (d): Before setting or varying any sustainability measure for any stock, you must have regard to sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000 and any planning document lodged under section 91 of the Marine and Coastal Area (Takutai Moana) Act 2011. Southern bluefin tuna are unlikely to be found within the area of the Hauraki Gulf Marine Park. There are no planning documents under the Marine and Coastal Area (Takutai Moana) Act 2011 that are relevant to this proposal.

Other Management Issues

83. MPI proposed that southern bluefin be removed from Schedule 5A of the Act with the effect that the underfishing provisions outlined in s67A of the Act would apply for this species allowing the carry forward of up to 10% of unfished ACE from one year to the next.
84. All industry submissions and that of Te Ohu Kaimoana strongly supported reinstatement of provisions for carry-forward of unfished quota, noting that these provisions are an important contributor to efficient operations for the industry.
85. The application of underfishing provisions was opposed by NZRFC and NZSFC. NZRFC submitted that fishers should manage the catch to their ACE portfolios within a fishing year. NZSFC do not support a 10% carry-forward of ACE to the following season in the absence of (carry-back) regulations that allow the reduction of ACE the following year where catch has exceeded ACE. NZSFC considers that this is not likely to be much of a problem with southern bluefin tuna but is an issue for a number of other important stocks.
86. MPI remains of the view that the provision to allow 10% underfishing carry forward is an important mechanism to both mitigate the risk of southern bluefin tuna overcatch in the New Zealand fishery and recognise the annual variability in access to the fishery (it is weather dependant) and abundance of southern bluefin in New Zealand waters. The importance of an underfishing regime has now been recognised by CCSBT which has adopted a limited provision for carry forward within a three year quota block.
87. As noted in industry submissions, the southern bluefin tuna fishery is a highly seasonal fishery and after fishing for southern bluefin tuna fishers move into bigeye and swordfish target fisheries where there is a likelihood that southern bluefin will continue to be caught as a bycatch. MPI notes Stu Morrison's strong support for underfishing provisions to apply because of the relationship between bigeye and southern bluefin tuna fisheries. As Solander indicates in its submission, fishers may not retain sufficient ACE to cover the eventuality of bycatch if there is a risk that ACE

that they have purchased will be lost if not caught.. Importantly carry forward relates to ACE rather than quota holdings so those fishers that purchase ACE have greater flexibility in how it is used. Solander points to the fact that “all HMS fisheries are highly volatile and the ten percent buffer gives confidence to the ACE purchaser”.

Porbeagle Sharks

POS 1 stock status

88. Porbeagle sharks (*Lamna nasus*) live mainly in the latitudinal bands 30–50°S and 30–70°N. They occur in a circumglobal band in the Southern Hemisphere. In the South Pacific Ocean, porbeagle sharks are caught north of 30°S in winter–spring only; in summer they are not found north of about 35°S. They appear to penetrate further south during summer and autumn, and are found near many of the sub-Antarctic islands in the Indian and South-west Pacific Oceans.
89. The stock structure of porbeagle sharks in the southern hemisphere is uncertain, however, tagging studies indicate that porbeagle sharks in the south-west Pacific comprise a single stock. There have been no stock assessments of porbeagle sharks in New Zealand nor is it possible to estimate maximum sustainable yield (MSY) for the part of the stock that is found within our fisheries waters however the stock is considered likely to be below the biomass that will sustain $MSY(B_{MSY})^2$.
90. Existing unstandardised catch per unit effort (CPUE) analysis of tuna longline catches recorded by observers show considerable variability – particularly for the domestic fleet. Indices for the domestic fleet are based on low observer coverage and are therefore not likely to reflect stock abundance.
91. Relative to a wide range of shark species, the productivity of porbeagle sharks is very low. Females have a high age-at-maturity, high longevity and low annual fecundity. These factors make porbeagle sharks very susceptible to over exploitation.
92. Faced with considerable uncertainty in the status of the stock and biological characteristics that show potential vulnerability, MPI proposes that a cautious approach be implemented that limits the potential risk of overexploitation by reducing the TAC to a level that is more representative of recent catch and limits the potential for future expansion.

International context

93. Cooperation in the management of the porbeagle shark throughout the western and central Pacific Ocean is facilitated through the Western and Central Pacific Fisheries Commission (WCPFC). Under this regional convention, New Zealand is responsible for ensuring that the management measures applied within our waters are compatible with those of the Commission – domestic measures can be more stringent than the Commission’s standards but cannot be less rigorous.

² 2011 Porbeagle Plenary Report available through www.fish.govt.nz

94. Future stock assessments of porbeagle shark in the region will be reviewed by the WCPFC. The focus of the current WCPFC shark research plan is on other shark species and currently no assessment of the porbeagle stock is planned. The Commission has, however, listed porbeagle as a 'key shark species' with priority given to improved data collection along with research and development strategies for avoiding unwanted shark captures. Recent changes in reporting should enhance our ability to undertake targeted research in the future.
95. Porbeagle has been heavily fished in other oceans and as a result has been subject to a range of proposals for improved conservation status. The IUCN Red List of Threatened Species classifies porbeagle shark as vulnerable globally, critically endangered in the Northeast Atlantic and Mediterranean Sea, endangered in the Northwest Atlantic and near threatened in the Southern Ocean.
96. Migratory species that have an unfavourable conservation status or would benefit significantly from international co-operation organised by tailored agreements are listed in Appendix II to the Convention for the Conservation of Migratory Stocks (CMS), to which New Zealand is a party. The Convention encourages the Range States to conclude global or regional agreements for the conservation and management of individual species or, more often, of a group of species listed on Appendix II.
97. A non-binding Memorandum of Understanding (MoU) and associated draft conservation plan have been developed for shark species listed on Appendix II of CMS, including porbeagle (2011). New Zealand has yet to sign the MoU.
98. Porbeagle was proposed for listing on Appendix II of Convention on International Trade in Endangered Species (CITES) at the 15th Conference of the parties in Doha, Qatar in 2010 and this listing was supported by the Food and Agricultural Organisation of the United Nations (FAO) expert panel providing advice to members, and by the New Zealand delegation. The proposal to list porbeagle did not proceed on grounds other than science, however since that time the European Union has taken unilateral action to list porbeagle on Appendix III of CITES.
99. Article 7 of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean creates an obligation to apply Article 5 principles to waters under national jurisdiction including (but not limited to) the application of the precautionary approach.

Domestic context

100. Porbeagle sharks were introduced into the QMS on 1 October 2004 under a single Quota Management Area (QMA). Porbeagle shark was added to the Third Schedule of the 1996 Fisheries Act (the Act) with a TAC set under section 14 based on its highly migratory nature and the fact that an estimate of MSY for the New Zealand component of the stock cannot be derived. The following allocations were made at the time of introduction and have remained at these levels ever since:

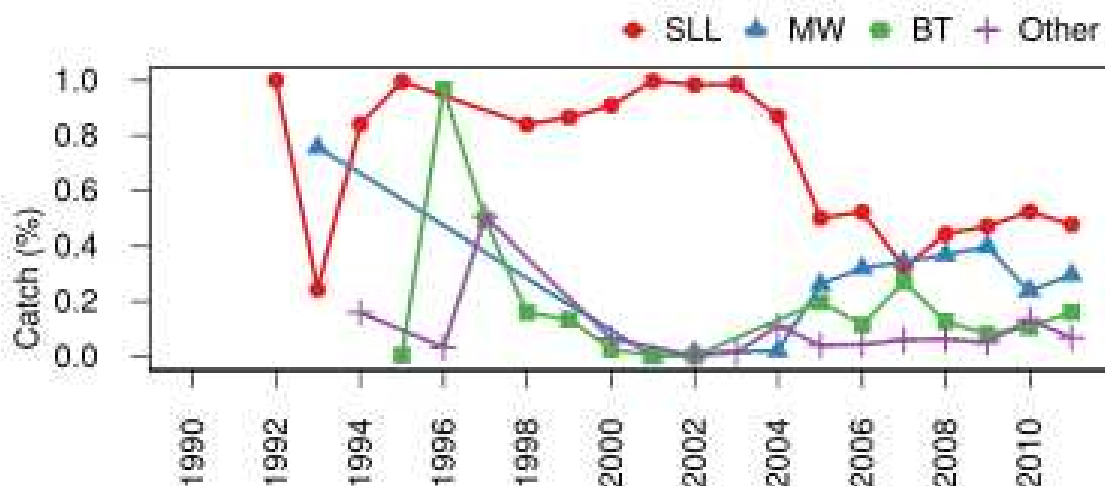
Table 9: Current allowances for porbeagle sharks

Recreational Allowance (tonnes)	Customary Allowance (tonnes)	Other Mortality (tonnes)	Total Allowable Commercial Catch (tonnes)	Total Allowable Catch (tonnes)
10	2	22	215	249

101. Porbeagle shark was also added to Schedule 6 of the Act with a provision that a commercial fisher may return any porbeagle shark to the waters from which it was taken from if:
- That porbeagle shark is likely to survive on return; and
 - The return takes place as soon as practicable after the porbeagle shark is taken.

Commercial fishery

102. There is no target commercial fishery for porbeagle with the majority of the commercial catch taken as bycatch by tuna longliners with the rest largely coming from the mid-water and bottom trawlers – a breakdown by method is provided in Figure 1. During the 2010-11 fishing year, the majority (70%) of the processed catch was landed as fins only. In New Zealand, porbeagle sharks recruit to commercial fisheries during their first year and much of the commercial catch is immature.

**Figure 1: Porbeagle catch percentage by method and year³**

103. Figure 2 illustrates that commercial landings peaked during the 1998-99 fishing season at 240 tonnes but have since been much lower. It should be noted that catches prior to 2004 are likely to have been higher than reported as they are based on the use of a generic conversion factor that was applied at that time on the landing of processed fins. A species specific conversion factor now applies.

³ <http://finz.trophia.com> accessed on 14-06-12

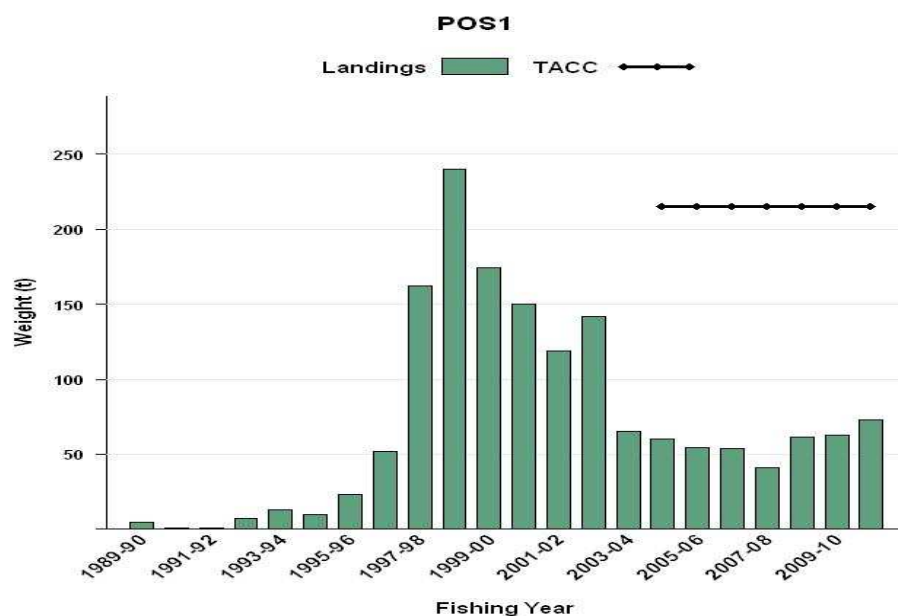


Figure 2: Catch of porbeagle sharks from 1989-90 to 2010-11 within New Zealand waters

104. Part of the decline in landings since 2004, as shown in Figure 3, can be attributed to the decrease in effort that has come from the recent rationalisation of the tuna fleet with the introduction of key longline caught species into the QMS. However, there are no obvious signs of increased catch rates for porbeagle sharks resulting from this reduced effort.

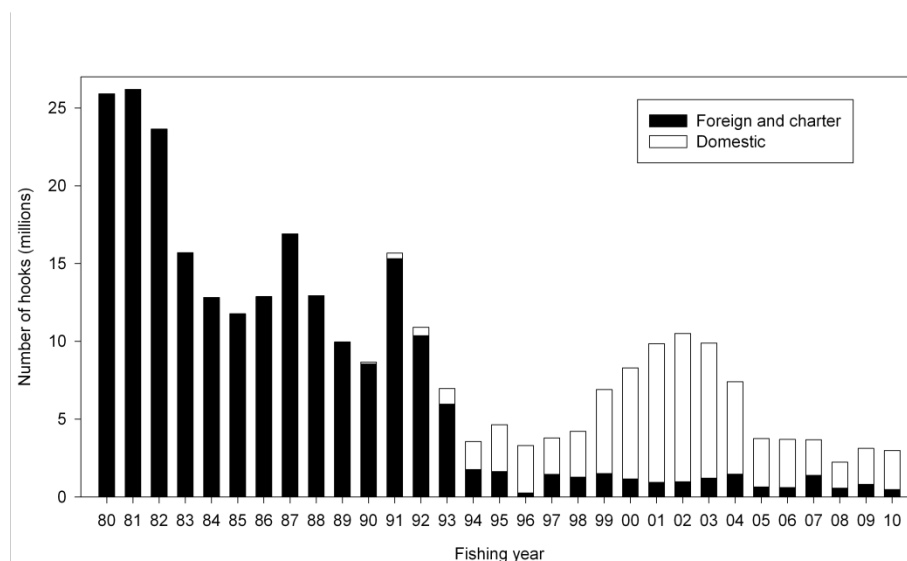


Figure 3: Fishing effort (number of hooks set) for foreign, charter and domestic fleets from 1980 to 2010

105. Table 10 provides the previous five fishing year's catch volumes in relation to the total allowable commercial catch giving some indication of the gap that exists between actual catches and the current limit.

Table 10: Commercial landing of porbeagle sharks (POS1) for last five fishing years⁴

Fishing Year (Oct-Sep)	TACC (tonnes)	Annual Catch (tonnes)	Catch as % of TACC
2006-2007	215	54	25%
2007-2008	215	41	19%
2008-2009	215	62	29%
2009-2010	215	65	30%
2010-2011	215	73	34%

106. There is a strong concentration of quota with a limited number of individuals. The largest quota holder is responsible for 24% of holdings in the porbeagle fishery. In fact, the five largest of the 141 quota holders command more than half of the total quota with the majority of holders carrying minimal quantities. A high number of fishers catching porbeagle sharks do not hold quota and rely instead on ACE purchases.

Recreational fishery

107. An estimate of the recreational catch of porbeagle sharks is not available but it is likely to be small because this species usually occurs over the outer continental shelf or beyond, an area that is infrequently fished by the recreational sector.

Customary fishery

108. An estimate of the customary catch is not available but is also likely to be small for the same reasons that limit recreational catches.

Summary of IPP Options

Option 1

109. Within a TAC of 88 tonnes, set a TACC of 73 tonnes – the highest commercial catch level since the 2004 QMS introduction.

110. This option is based on the reported commercial catch levels from the 2004-2005 fishing year to the 2010-2011 fishing year taking the highest point (2010-11) of that series.

Option 2

111. Within a TAC of 106 tonnes, set a TACC of 89 tonnes – the highest commercial catch level since the 2004 QMS introduction plus 16t to account for the potential for additional effort in the southern bluefin tuna fishery.

112. The TACC associated with this TAC option is set at a level beyond recent catch in recognition of the growth in the target fishery for southern bluefin tuna in which porbeagle sharks are bycatch. The additional 16t was derived by calculating the total catch of porbeagle sharks attributable to vessels targeting southern bluefin tuna during

⁴ Data extracted on April 18th 2012. Figures based on amounts reported in Monthly Harvest Returns.

the 2010-11 fishing year and multiplying that total by the proposed percentage increase in the TAC for southern bluefin.⁵

113. The following assumptions were made in determining the estimated increase related to southern bluefin tuna effort:

- a) That the full increased southern bluefin tuna allocation would be caught;
- b) That bycatch ratios and catch per unit of effort (CPUE) would remain the same; and
- c) That schedule 6 provisions would be used with the same frequency.

114. MPI is particularly aware that the higher abundance currently experienced in the New Zealand southern bluefin tuna will likely affect CPUE figures and therefore influence the appropriateness of the second assumption.

Option 3

115. Within a TAC of 129 tonnes, set a TACC of 110 tonnes based on initial feedback from the commercial sector.

116. MPI suggested this third option to reflect the concerns that arose during preliminary consultation and to present an additional option that allows for a more limited level of expansion in the fishery than the current TAC provides.

Analysis of Submissions

117. There were ten submissions received during the IPP consultation phase. Copies of the submissions are available under separate cover.

Status Quo

118. Although not specifically presented as an option in the IPP, three submitters have stated that they do not support any reduction in the TAC. Sanford Ltd, B. Turner and S. Morrison argue that there are no sustainability issues with the stock and that increasing catch levels in target fisheries will increase the bycatch of porbeagles.

119. SeaFIC was concerned with the timing of proposed reductions suggesting that a review of the TAC/TACC should occur within the NPOA-Sharks review (scheduled for later in 2012).

120. The NPOA-Sharks is a five year plan outlining general overarching objectives that guide MPI to ensure the conservation and management of sharks and their long-term sustainable use. The setting of catch limits is an annual process driven out of the National Fishery Plan for Highly Migratory Species and Operational Management Plan for Large Pelagic Species.

121. MPI believes that although the current catch level is unlikely to pose a threat to the sustainability of the stock, the biological characteristics of the species demand a more

⁵ 42% of the 73t of POS catch during the 2010-11 fishing year was attributable to vessels that targeted STN during the year. This amount was multiplied by the proposed 52% increase in the STN fishery (30.6t * 52% = 15.9t).

cautious approach in setting a maximum catch limit. MPI considers that the current TAC is set at a level that would place significant pressure on the stock if fully caught and therefore must be reduced to ensure long term sustainability.

122. MPI also recognises the likely increase in porbeagle bycatch based on increased effort in the target tuna fishery and has provided options that it believes provide industry with enough room to expand without placing the stock at risk.

Option 1

123. Forest & Bird, the NZRFC and the NZSFC all support Option 1, which is the greatest of the three reductions initially put forward by MPI. Their support for this option stems primarily from concerns over the low productivity of the stock and its vulnerability to overfishing.
124. Forest & Bird also point to growing international pressures aimed at the conservation of porbeagle and other sharks along with the need for a precautionary approach in light of considerable uncertainty and limited information.
125. Both NZSFC and NZRFC argue that, to be effective, a catch limit must be set at a reasonable level and that the current TACC set at nearly three times the commercial reported catch is ineffectual. They also suggest that the lower TACC level found under Option 1 will create an incentive for commercial fishers to utilise the provisions of Schedule 6 and increase the number of porbeagle sharks that are returned to sea.
126. MPI agrees with the Forest and Bird statements regarding the mounting international interest in shark management and considers that all the options presented in the IPP fulfilled the need for caution in the face of uncertainty and limited information.
127. MPI also agrees with the NZSFC argument that the TACC must be set at a meaningful level but believes that both options 2 and 3 also fulfil that obligation. MPI also shares the NZSFC's desire for greater uptake of Schedule 6 provisions and believes that the proposed Code of Practice on shark handling and returns to sea will indeed enhance uptake amongst commercial fishers.

Option 2

128. Option 2 did not receive support from any of the submitters.

Option 3

129. Aotearoa Fisheries Ltd (AFL) support Option 3 acknowledging the need to ensure long-term sustainability based on the biological characteristics of porbeagle sharks and their susceptibility to overexploitation. TOKM also supports Option 3 recognising the need to reduce overall TAC while providing maximum headroom to accommodate the likely increase in bycatch in the target southern bluefin tuna fishery. SeaFIC and Solander conditionally endorse Option 3 but disagree with the immediate need for any reduction in TAC.
130. Solander also argue that the domestic allocation of porbeagle sharks should remain unchanged until such time as stock wide decisions are made at the WCPFC. Solander

further adds that pre-emptive action by New Zealand may compromise our position in future negotiations and limit our ability to manage calls for reductions in catch.

131. Contrary to the suggestion that decreasing our TAC will not favour New Zealand in terms of an international allocation process, MPI believe that New Zealand's sound governance reflected in the implementation of credible sustainable shark management measures will be recognised in Convention processes.
132. MPI further believes that you have an obligation to intervene domestically if you believe that such actions are necessary to ensure the sustainability of the stock even in the absence of agreed regional allocations. The Convention on the Management of Highly Migratory Stocks in the WCPFC also requires that members use a precautionary approach when applying management measures within areas under national jurisdiction.

Deemed Values

133. Only three submitters directly addressed the proposed changes to the deemed values for POS 1 but a number of submitters expressed general concerns at the risk of increased deemed value payments instigated by a lack of available ACE.
134. SeaFIC argue that standard differential deemed values should only be considered under Option 3 since the other options are likely to create a climate where ACE is difficult to source and fishers are unnecessarily penalised through deemed value payments.
135. AFL supports the implementation of standard differential deemed values in the fishery.
136. NZRFC believe that greater emphasis should be placed on prosecuting illegal dumping of fish by commercial operators. NZRFC reaffirms its position that deemed values should not be lowered as a means to allow an increase in commercial catch.
137. MPI will continue to utilise all the compliance tools at its disposal, including prosecutions, to eliminate illegal dumping. None of the options put forward in the IPP suggest a lowering of deemed values and in fact the inclusion of ramping provisions is aimed at ensuring that the commercial catch remains within the limits of the TACC.
138. Since its QMS introduction in 2004, porbeagle shark has had an annual deemed value rate of \$0.15 per kg. Deemed value payments have historically been low which is to be expected in a fishery where the TACC is significantly under-caught.

Table 11: Total deemed value payments, deemed value rate and port prices for porbeagle sharks since 2004 introduction

Year	Total deemed value payments	Annual deemed value rate (per kg)	Port prices (per kg)
2010-11	\$177.75	\$0.15	\$0.36
2009-10	\$493.05	\$0.15	\$0.40
2008-09	\$125.40	\$0.15	\$0.40
2007-08	\$19.05	\$0.15	\$0.40
2006-07	\$73.50	\$0.15	\$0.47

2005-06	\$109.05	\$0.15	\$0.07
2004-05	\$506.55	\$0.15	\$0.69

139. There are some concerns that the high concentration of quota holding in the fishery may make it difficult for some fishers to source necessary ACE under a reduced TACC and MPI therefore does not recommend a change to the deemed value rate as part of this review. MPI does suggest that a standard differential be applied to the stock whereby catch in excess of 20% of ACE incurs a higher deemed value rate⁶ as a means of ensuring that excessive deeming does not occur. MPI will also continue to monitor deemed value payment levels to ensure that they do not become a vehicle to circumvent the TACC.
140. MPI considers that the use of deemed values should remain limited with commercial fishers unlikely to catch the full TACC under Option 3 based on the fact that the proposed catch limit is significantly higher than recent catches. The introduction of differential deemed values aims to prevent fishers from catching substantial quantities without acquiring ACE while still allowing small over-catches to be deemed at a reasonable cost.

Option Analysis

Summary of Options Considered

	TAC (tonnes)	Maori Customary Allowance (tonnes)	Recreational Allowance (tonnes)	Other Sources of Fishing- Related Mortality (tonnes)	Total Allowable Commercial Catch (tonnes)
Status Quo	249	2	10	22	215
Option 1	88	2	6	7	73
Option 2	106	2	6	9	89
Option 3	129	2	6	11	110

Status Quo

141. The status quo was not presented to stakeholders in consultation since, in MPI's view it no longer meets the purpose of the Act of providing for utilisation while ensuring sustainability, however, this option has been raised in some submissions. The biological characteristics of the porbeagle shark make them vulnerable to overexploitation which demands a cautious approach to TAC setting especially when faced with limited information and considerable uncertainty. The current elevated TAC level creates an unnecessary risk to the stock by allowing the potential for a significant expansion in catch. **MPI maintains its view that the status quo does not meet the purpose of the Act as outlined in section 8.**

⁶ Under a standard differential deemed value rate schedule the applicable deemed value rate increases by 20% for every 20% of catch in excess of ACE holdings, up to a maximum 100% increase for all catch 100% or more in excess of ACE holdings.

Option 1

142. Option 1 presents the most significant reduction in TAC and accordingly the highest degree of certainty in its ability to maintain the status of the stock. However, there are some concerns that this approach may unduly affect commercial operators since the most recent year on record serves as the benchmark and catches have trended upward in the previous three years in association with increased catches of target species.
143. This option is based on the 2010-11 catch levels which may not be reflective of a catch ceiling if the upward trend in catch continues. Variations in the effort levels of the target fisheries for which porbeagle sharks are common bycatch will likely impact on the level of porbeagle catch and move catch levels beyond those of recent years.
144. In setting a TAC under section 14 of the Act, you have an obligation to do so in a way that you consider will best meet the purpose of the Act. Noting that your sustainability obligation would be met under the higher TACs outlined in either Option 2 or 3; **MPI considers that utilisation would be unnecessarily constrained under Option 1.**

Option 2

145. This option was put forward in an attempt to quantify and incorporate the potential increase in effort in the southern bluefin tuna fishery for which porbeagle sharks are a bycatch.
146. The TAC and TACC presented in Option 2 rely on a number of assumptions and can only be regarded as an estimate of future catch based on historical information. A number of factors could influence future catch levels beyond the estimates derived under Option 2 which may lead to utilisation constraints in the target fisheries for which porbeagle sharks are a bycatch. These potential factors were raised in the submissions of various commercial stakeholders and were seen as a source of concern for that sector.
- 147. MPI does not recommend Option 2 based on the potential adverse affect on utilisation and the fact that your sustainability obligations could also be met under the higher TAC proposed under Option 3.**

Option 3

148. Preliminary discussions were held with the highly migratory species Fish Plan Advisory Group to discuss the management changes proposed in this paper. At this meeting, industry members of the group raised concerns that options 1 and 2 would overly restrict the availability of ACE in the fishery leading to higher deemed value payments.
149. It was also suggested that the low TAC/TACC levels presented in options 1 and 2 would cause particular hardships to operators should the level of effort in target fisheries, such as bigeye and yellowfin tuna, increase.
150. The TAC in Option 3 still represents a significant reduction from the current level and therefore does limit the potential expansion in porbeagle shark catch to a point that is less likely to put the stock at risk.

151. Of the three options initially put forward, Option 3 has the lowest potential to adversely affect commercial fishing operations in the short term but it also carries a higher degree of uncertainty in its ability to deal with the sustainability concerns that have arisen for the stock.
152. **MPI considers that the proposed reduction in TAC under Option 3 meets your obligations to adopt a precautionary approach to the management of the stock in the face of limited information and uncertainty while still providing for utilisation.**

Allowances and TACC

153. No submissions were received that lead MPI to change its view on the allowances and TACCs associated with Options 1-3.

Assessment against Statutory Obligations

154. MPI considers that all options presented in this paper other than the status quo satisfy your obligations under section 14 of the Act which provides for alternative TAC setting for stocks under Schedule 3. Setting a TAC under section 14(1) of the Act requires consideration of how to best meet the purpose of the Act as outlined in section 8 – that is, to provide for utilisation whilst ensuring sustainability. MPI considers the obligation to ensure sustainability is met by reducing the TAC to a level which better reflects historical catches and reduces the risk of overexploitation. MPI also considers that options 1, 2 and 3 provide for utilisation by minimising the impact on commercial operators and allowing expansion on target fisheries for which porbeagle are a bycatch.
155. In setting or varying sustainability measures, you must also act in a manner consistent with New Zealand's international obligations relating to fishing and the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992.
156. A wide range of international obligations relate to fishing, including use and sustainability of fishstocks; and maintaining biodiversity. MPI considers that the management options for porbeagle sharks are consistent with these international obligations. International obligations of relevance to porbeagle sharks include those found in Article 7 of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean in relation to the application of a precautionary approach when managing highly migratory stocks within domestic waters.
157. MPI also considers the proposed management options to be consistent with the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (section 5 (b)). There is also an obligation to provide for input and participation of tangata whenua and have particular regard to kaitiakitanga (under section 12). Tangata whenua were consulted on these changes and input was obtained in the development of the proposal.

TAC

158. The Act allows you to set a TAC for porbeagle sharks under Section 14 of the Act if you believe that the purpose of the Act would be better served by doing so since the

species is listed under Schedule 3. It is not possible to estimate MSY for the New Zealand component of this highly migratory stock which makes the application of Section 14 appropriate.

Information Principles

159. Section 10 requires that you take into account the information principles these being that:
- a) decisions should be based on best available information;
 - b) you should consider any uncertainty in the information available in any case;
 - c) you should be cautious in making your decisions in instances where the information is uncertain, unreliable or inadequate, and
 - d) the absence of, or uncertainty in, any information should not be used as a reason for postponing or failing to take any measures to achieve the purposes of the Act.
160. MPI recognises that information on porbeagle sharks is limited and unlikely to improve in the near future which is why it has recommended a TAC reduction that reflects a precautionary approach in managing the stock.

Section 11 Considerations

161. In making your decision on sustainability measures for porbeagle sharks you must also have regard to the requirements of section 11 of the Act as follows:
- a) Section 11(1)(a): Before setting or varying any sustainability measure for any stock, you must take into account any effects of fishing on any stock and the aquatic environment. Porbeagle sharks are largely caught as bycatch in commercial surface longline fisheries targeting southern bluefin tuna and to a lesser extent the mid and bottom trawl fisheries. MPI has proposed a TACC level that is significantly higher than recent catches and therefore allows for expansion in the target commercial fisheries for which porbeagle sharks are a bycatch.
 - b) Section 11(1)(b): Before setting or varying any sustainability measure, you must take into account any existing controls under the Act that apply to the stock or area concerned. Standard management controls apply to the porbeagle shark fishery, for example deemed values and fishing method constraints. MPI recommends that you introduce standardised ramping provisions in the application of deemed values but does not suggest changes to their current annual or interim values.
 - c) Section 11(1)(c): Before setting or varying any sustainability measure for this stock, you must take into account the natural variability of the stock. Porbeagle sharks are not thought to be a highly variable with females having a low annual fecundity.

- d) Sections 11(2)(a) and (b): Before setting or varying any sustainability measure for any stock, you must have regard to any provisions of any regional policy statement, regional plan, or proposed regional plan under the Resource Management Act 1991 and any management strategy or management plan under the Conservation Act 1987 that apply to the coastal marine area and you consider relevant. MPI is not aware of any such policy statements, plans or strategies that should be taken into account in the case of porbeagle sharks.
- e) Sections 11(2)(c) and (d): Before setting or varying any sustainability measure for any stock, you must have regard to sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000 and any planning document lodged under section 91 of the Marine and Coastal Area (Takutai Moana) Act 2011. Porbeagle sharks are typically found beyond the continental shelf and are unlikely to be found within the Hauraki Gulf. There are no planning documents under the Marine and Coastal Area (Takutai Moana) Act 2011 that are relevant to this proposal.
- f) Section 11(2A)(b): Before setting or varying any sustainability measure for any stock, you must take account of any relevant and approved fisheries plans. The National Fisheries Plan for Highly Migratory Species has been approved under section 11A. The proposed changes are in line with the plan and its objective of maintaining the reproductive capacity of HMS sharks.
- g) Sections 11(2A)(a) and (c): Before setting or varying any sustainability measure for any stock, you must take into account any conservation or fisheries services, or any decision not to require such services. MPI does not consider that existing or proposed services materially affect the proposals for this stock. No decision has been made to not require a service in this fishery at this time.

162. Section 75 of the Act allows you to set or vary interim and annual deemed values for a stock and section 75(4) allows you to set different annual deemed values with respect to the same stock which apply to different levels of catch in excess of ACE.

Other Management Issues

Utilisation Issues

163. A number of submitters raised concerns over the finning of sharks based on the fact that a significant portion of porbeagle sharks are landed as fins only. This issue is beyond the scope of this paper and the TAC levels proposed are strictly intended to address the sustainability of the fishery in New Zealand fisheries waters. The issue of full utilisation of New Zealand shark fisheries will be addressed through the review of the National Plan of Action – Sharks which is currently under way.

Schedule 6

164. Porbeagle sharks can legally be returned to sea in accordance with the requirements of Schedule 6 of the Act as a means of managing landings against available ACE - limiting the potential for excessive deemed value payments. Observer derived estimates show that in 2010, 55% of porbeagle sharks were alive when caught in the longline fishery while only minimal levels were released alive, which implies that greater use could be made of Schedule 6 provisions.

165. To facilitate the improved use of Schedule 6, MPI proposed the implementation of a Code of Practice to promote proper handling of individuals and support higher survival rates of released sharks. A number of submitters showed support for the development of a Code of Practice with some suggesting that it could be used as an alternative to changes in the TAC. MPI does not believe that a Code of Practice used in isolation provides you with enough certainty to address sustainability concerns for POS 1 but does support its use as a means to improve the implementation of any TAC changes you make.

Mako Sharks

MAK 1 stock status

166. Compared with a wide range of shark species the productivity of shortfin mako sharks is very low. The shortfin mako (hereafter mako or MAK 1) shark is a large, slow-growing and late maturing species with high longevity and low natural mortality. A prolonged sexual maturation time combined with low fecundity results in very low productivity, significantly limiting the ability to sustain fishing pressure.
167. Mako sharks are found around New Zealand but are most common in northern waters especially during colder months. Ageing studies suggest sharks found in New Zealand may live up to 30 years with females maturing at a much later age (19 years) than males (7 years). Observers report that the northern fishery comprises a mixture of juvenile, sub-adult and adult males and juvenile and sub-adult females, whereas the southern fishery comprises mainly sub-adult and adult males and sub-adult females. Very few mature females are caught by either fishery.
168. Tag and release results from New Zealand indicate that long distance movements out of New Zealand fisheries waters are frequent with recoveries as far afield as French Polynesia. The stock structure of shortfin mako shark in the southern hemisphere is uncertain but recent genetic work suggests that shortfin mako sharks found in the south west Pacific are from a single stock.
169. The status of mako in New Zealand fisheries waters and other areas in the WCPFC region is currently unknown. There have been no stock assessments of shortfin mako shark in New Zealand or elsewhere in the world. WCPFC now requires its members to report on catches of mako but to date, data available to assess fisheries trends and indicators has been limited. The Secretariat of the Pacific Community (SPC) is due to complete a stock assessment for mako shark in 2013 as part of WCPFC's Shark Research Plan for the Pacific.

International context

170. The mako shark is listed on Appendix II of CMS (Convention on Migratory Species); Appendix II includes 'Migratory species that need or would significantly benefit from international co-operation'; makos are also listed on the IUCN Red List as 'vulnerable' with a decreasing population trend. A species/taxon with 'vulnerable' status is considered to be facing a high risk of extinction in the wild.
171. Article 7 of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean creates an obligation to apply

Article 5 principles and measures for conservation and management to waters under national jurisdiction including (but not limited to) the precautionary approach.

Domestic context

Commercial fishery

172. Mako sharks are highly vulnerable to longline gears and over 75% of reported landings are caught as a bycatch in bigeye tuna, southern bluefin tuna and swordfish fisheries. From the mid to late nineties, a steady increase in commercial tuna longline effort in New Zealand fisheries waters gave rise to an increase in the tonnage of mako shark landed with reported commercial landings of mako shark reaching their peak in 2000-2001 (319 t).

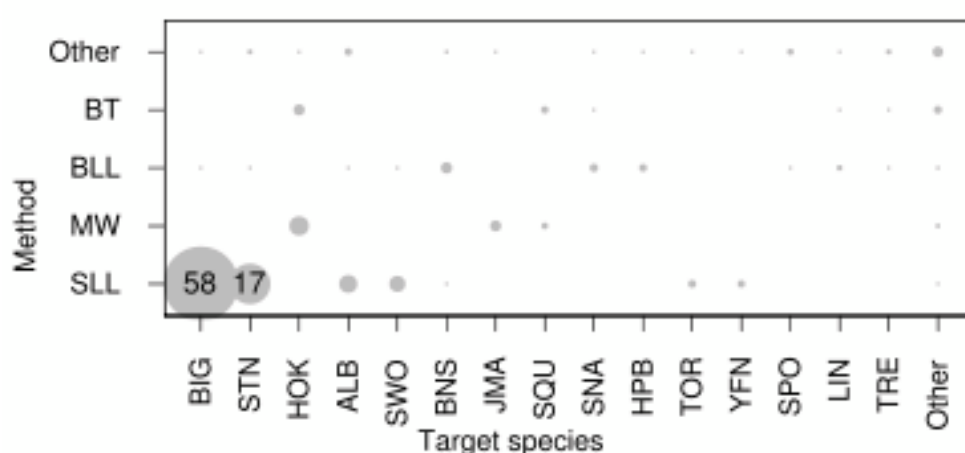


Figure 4: Proportion of landings of the MAK 1 stock taken by each fishing method and target species. The area of each circle is proportional to the percentage of landings taken using each combination of fishing method and target species⁷

173. Greenweight (total weight) is obtained by applying species specific conversion factors to the weight of the fins landed. Prior to introduction to the QMS the species-specific conversion factor for mako was 30 (for fins). At the time of QMS introduction, consideration of international data of mako shark fin to carcass weight ratios suggested that a factor of 30 would be underestimating catch and in the process of setting the TAC for this species catch estimates were corrected for the revised conversion factor of 59 which now applies.

⁷ Percentages are shown for the top 15 target species, or for the target species which comprise up to 98% of the vessel-days, whichever is the less. All other target species are lumped under "Other". Similarly, percentages are shown for the top 5 fishing methods, or for the fishing methods which comprise up to 98% of the vessel-days, whichever is the less. All other methods are lumped under "Other".

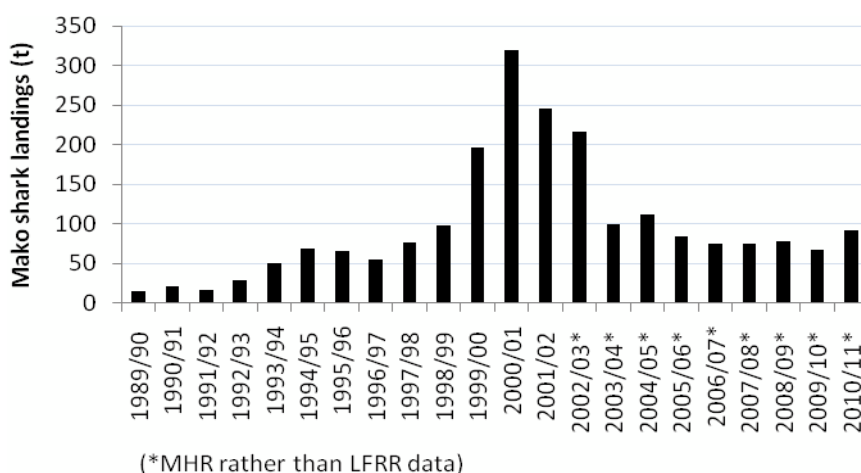


Figure 5: New Zealand commercial landings (t) of mako sharks reported by fishers (CELRs and CLRs) and processors (LFRRs) by fishing year⁸

Recreational fishery

174. Although highly prized as a recreational species, reports from the New Zealand Sports Fishing Council suggest that in recent years there has been less recreational targeted effort for all sharks. However, they are an important bycatch of targeted billfish fisheries. The number of mako sharks tagged has trended upwards noticeably in the past five seasons, with a high proportion of catch by club members tagged and released (92% in the most recent season).

Customary fishery

175. There are currently no estimates of Maori customary catch of mako sharks. Traditionally, makos were highly regarded by Maori for their teeth, which were used for jewellery. MPI have a research proposal for 2012/13 to work with iwi to investigate and understand the unique differences between individual iwi and hapu in the management of HMS. This research is intended to identify the specific relationships (importance and value) of HMS species (including mako) to Maori customary fisheries.

Current Management

176. Concern over peak catches in the late 1990s and early 2000s led to an introduction of mako sharks into the Quota Management System (QMS) in 2004 with the following allocations:

Recreational Allowance (tonnes)	Customary Allowance (tonnes)	Other Mortality (tonnes)	Total Allowable Commercial Catch (tonnes)	Total Allowable Catch (tonnes)
50	10	46	406	512

177. Mako shark was also added to Schedule 6 of the Act with the proviso that a commercial fisher may return any mako shark to the waters from which it was taken if:

- a) that mako shark is likely to survive on return; and

⁸ from: Fisheries Assessment Plenary Report Nov 2011 for shortfin mako http://fs.fish.govt.nz/Doc/22921/07-MAK_2011.pdf.ashx).

- b) the return takes place as soon as practicable after the mako shark is taken.
178. New Zealand also has a NPOA – Sharks as part of its responsibilities as a member state of the Food and Agriculture Organisation of the United Nations (FAO). The overarching purpose of New Zealand's NPOA-Sharks is to ensure the conservation and management of sharks and their long-term sustainable use.
179. Under the NPOA – Sharks, the efficacy of management measures to ensure sustainability is determined by a number of factors appropriate for mako including:
- a) Trends in abundance (CPUE and gamefish tagging rates);
 - b) Trends in catches (i.e. substantially undercaught catch limits);
 - c) The nature of shark catch (i.e. target vs. bycatch).
180. Unstandardised CPUE analysis of tuna longline catches recorded by observers show no long-term trends over the period 1992-93 to 2004-2005; these CPUE indices may not reflect stock abundance as they do not account for variation in the numbers of mako sharks migrating into the New Zealand Exclusive Economic Zone each year, and variation in many other influencing factors (e.g. vessel, gear, location and time of year). More recent unstandardised CPUE analysis of tuna longline catches recorded by observers also shows considerable variability although some general trends may be noted including a gradual increase in CPUE from 2004 (QMS introduction). However, indices are based on low observer coverage and therefore may not reflect stock abundance.
181. Since their introduction to the QMS, there has been no review of catch limits for mako shark. The current TACC of 406t for mako is significantly under caught with an average of 20% of the TACC landed since introduction to the QMS (7 fishing years). Although under-catch of the TACC may be explained in part by a reduction in tuna longline vessel numbers, anecdotal reports from commercial longline fishermen suggest that there is now an increased abundance of mako shark vulnerable to their gear. Recreational gamefishers are also reporting to have seen more sharks in the last few seasons. This anecdotal evidence suggests that the current catch may be more sustainable than the initial TAC set for the fishery and that catch at this level has reversed indications of a declining trend in abundance prior to QMS entry.

Summary of IPP options

182. MPI released an IPP for consultation on your behalf on 29 June 2012, which proposed changes to the sustainability measures and management controls for highly migratory species. The IPP included three options detailing proposals to reduce the total allowable catch, allowances and total allowable commercial catch for mako sharks as follows.

Option 1

183. Reduce the TAC for mako shark (MAK 1) for 2012–13 from 512 tonnes to 173 tonnes comprised of a 30 tonne recreational allowance, a 10 tonne customary allowance, a 23 tonne allowance for other sources of mortality and a TACC of 110 tonnes – the highest commercial catch level since the 2004 QMS introduction.

184. This option is based on the highest reported commercial catch levels for mako since introduction into the QMS (110 tonnes).

Option 2

185. Reduce the TAC for mako shark (MAK 1) for 2012–13 from 512t to 189 tonnes comprised of a 30 tonne recreational allowance, a 10 tonne customary allowance, a 25 tonne allowance for other sources of mortality and a TACC of 124 tonnes – the highest commercial catch level since the 2004 QMS introduction (110t) plus 14 tonnes to account for the potential for additional effort in the southern bluefin tuna fishery.
186. This option allows for an expansion in the target fishery for southern bluefin tuna fishery and an expected associated increase in the bycatch of mako shark. The suggested TACC is derived by combining the highest reported commercial catch level for mako since introduction into the QMS (110 tonnes) with an estimate of potential catch that may result from additional effort in the southern bluefin fishery (14 tonnes).

Option 3

187. Reduce the TAC for mako shark (MAK 1) for 2012–13 from 512 tonnes to 276 tonnes comprised of a 30 tonne recreational allowance, a 10 tonne customary allowance, a 36 tonne allowance for other sources of mortality and a TACC of 200 tonnes.
188. MPI suggested this third option to reflect concerns that arose during preliminary consultation and to present an additional option that allows for a more limited level of expansion in the fishery than the current TAC provides.

Recreational allowances

189. There are no estimates of the total recreational mako catch landed in New Zealand waters. When the mako was first introduced into the QMS, several hundred mako sharks per year were reported landed, with many more tagged and released. Since introduction to the QMS the proportion of the total mako tagged and released by recreational fishers has risen dramatically.
190. Reports from the New Zealand Sports Fishing Council (NZFSC) conclude that there is less targeted effort for mako sharks and an increasing trend in the proportion of catch by club members tagged and released. NZFSC catch records show very high tagging rates by club members of mako with 92% (546 fish) tagged and released for the 2010–2011 season. While the number of mako sharks tagged has trended upwards since 2002–03, the increase has been most noticeable in the past three seasons (2008/09–2010/11). It seems likely that this is a reflection of increased abundance since the low points in the early 2000s.
191. With information on the increasing trend in the proportion of mako tagged and released (less landed) and a revised understanding of the likely level of current fishing activity in the recreational mako shark fishery, MPI proposes that the existing recreational allowance is reduced for MAK 1 to 30 tonnes.

Customary allowances

192. There are no estimates of Maori customary catch of mako sharks. Traditionally, makos were highly regarded by Maori for their teeth, which were used for jewellery. MPI have

a research proposal for 2012/13 to work with iwi to investigate and understand the unique differences between individual iwi and hapu in the management of HMS. This research is intended to identify the specific relationships (importance and value) of HMS species (including mako) to Maori customary fisheries. Current customary allowances for mako sharks are 10 tonnes; MPI proposes that this allowance is retained until such time that better information is available.

Allowance for other sources of fishing related mortality

193. Releases in accordance with Schedule 6 of the Act are permitted for mako sharks, but of those mako sharks released alive it is unknown how many survive. Approximately 75% of mako sharks caught on tuna longlines are assessed alive by observers when brought to the vessel and thus able to be released under Schedule 6.
194. Current allowances for other sources of mortality are 46 tonnes based on 10% of all other allocation at the time of introduction to the QMS. Given the reductions to the TACC proposed, MPI anticipates an increase in live discards by fishers to manage their catch against quota. This anticipated increase in releases, combined with a significant increase in the proportion of tagged-released mako in the recreational fishery suggests a likely increase in incidental mortality associated with fishing.
195. MPI proposes that the allowance for fishing related mortality as a percentage of the TACC and other allowances is increased from 10% to 15%.

Analysis of submissions

196. Ten written submissions were received and are available under separate cover.
197. The only submissions made in relation to changes to the levels of recreational allowance, customary allowance or other sources of fishing mortality were from Forest and Bird who supported the decrease in the recreational allowance and supported the increase to other sources of fishing mortality. MPI therefore, proposes no change to the figures outlined in the three options.
198. Sanford Ltd, S. W. Morrison and B. Turner, were against the idea of reducing the TAC/TACC for mako shark, and although not included as a proposed option, were largely in support of retaining the status quo. SeaFIC and Solander were concerned with the timing of proposed reductions rather than the reductions themselves suggesting that a review to the TAC/TACC should occur within the NPOA-Sharks review (later in 2012) and in the context of decisions made at WCPFC post stock assessment (2013) for mako.
199. MPI believe that information on the status of the stock is unlikely to improve considerably in the immediate future (even given the 2013 stock assessment) and based on the information principles of the Act, the absence of such information should not be used as a reason for postponing or failing to take any measure.
200. The NPOA-Sharks is a five year plan outlining general overarching objectives that guide MPI to ensure the conservation and management of sharks and their long-term sustainable use. The setting of catch limits, although consistent with the 'comprehensive review of shark fisheries' as outlined in the NPOA-Sharks, is an

annual process driven out of The National Fishery Plan for Highly Migratory Species and Operational Management Plan for Large Pelagic Species.

201. Sanford Ltd, S. W. Morrison and B. Turner believe there is currently no proven sustainability issue, whilst other industry members (Solander Group, Aotearoa Fisheries Limited and Te Ohu Kaimoana) shared sustainability concerns expressed over the indicative global stock status. Both Solander Group and SeaFIC, although in favour of retaining status quo, identified their preferred Option (Option 3), should the decision be made to reduce the TAC/TACC as part of this sustainability round.
202. MPI considers that the current TAC (status quo) is set at a level that would place significant pressure on the stock if fully caught and therefore must be reduced to ensure long term sustainability. MPI believes that given the biological characteristics for mako shark it is necessary to apply added caution when setting sustainability measures (including catch limits) for this species.
203. Other primary concerns were in relation to potential effort increases in target fisheries of which mako are a bycatch. MPI also recognises that an increase in mako bycatch based on increased effort in the target tuna fishery is likely and has presented options that it believes provide industry with enough room to expand without placing the stock at risk.
204. Ben Turner voiced concerns about adverse effects on other stocks if increased mako numbers were to lead to an increase in the loss or destruction of gear and or catch. MPI acknowledges this concern and any potential for additional sources of fishing mortality for other species is addressed independently under each species review.
205. S.W. Morrison was in opposition to the reductions proposed and asked why other undercaught highly migratory species had not also been proposed for a TAC reduction. MPI has addressed the sustainability measures for mako and porbeagle sharks as a matter of priority. If there is a need to review other highly migratory species this will occur over time.

Option 1

206. Both NZRFC and Forest & Bird support Option 1, which is the greatest of the three reductions initially put forward by MPI. Their support for this option stems primarily from concerns over the low productivity of the stock and its vulnerability to overfishing.
207. Forest & Bird supports a precautionary approach in light of considerable uncertainty and limited information on the stock status of this species both in New Zealand waters and internationally. They further suggest that Options 2 and 3 do not exercise sufficient caution.
208. MPI agrees with the need for caution in the face of uncertainty and limited information especially for a species where low biological productivity increases concern; however, MPI believe that reductions under Options 2 and 3 also exercise due caution in this regard.

Option 2

209. NZSFC supports Option 2 citing considerable concern at the lack of HMS sharks in the mid 2000s and its view that a gradual rebuild in numbers has occurred in recent years under reduced catch levels. NZFSC believe that Option 2 allows some room for commercial catch to grow as abundance increase, but not without constraint.
210. MPI shares the view of NZFSC that current catch levels are likely to have resulted in a gradual rebuild in recent years, and agree that this suggests current catch levels are more sustainable. MPI however, believe that there also is sufficient constraint to address sustainability concerns under Option 3 which would result in a 46% reduction to the TAC.

Option 3

211. Te Ohu Kaimoana (TOKM) and Aotearoa Fisheries Limited (AFL) both support Option 3 suggesting that closer alignment with current catches allows for moderate increases in catch whilst still reducing the risk of pressure should catch elevate to existing TAC levels.
212. Option 3 provides industry with additional flexibility, offering the maximum buffer to accommodate the likely increase in bycatch in the target southern bluefin tuna fishery (among others), whilst at the same time being a significant reduction in the potential expansion of the fishery towards historical levels.
213. As mentioned above, although primarily in favour of status quo, both Solander and SeaFIC also suggest that Option 3 is workable but disagree with the timing of proposed reductions. Solander believe that MPI management strategy should be based on the fact that for HMS species such as mako, decisions on allocation are taken by consensus within the frameworks of WCPFC, proposing that a decrease in TAC may jeopardise any future allocation of mako shark for New Zealand (should it occur) in the context of WCPFC.
214. Contrary to the suggestion that decreasing our TAC will not favour New Zealand in terms of an international allocation process, MPI believes that New Zealand's sound governance reflected in the implementation of credible sustainable shark management measures will be recognised in Convention processes. As well as setting catch limits to address sustainability concerns, New Zealand's comprehensive reporting requirements improve our ability to monitor the status of our shark fisheries.
215. MPI further believes that there is an immediate need to act and adopt a more cautious TAC level for this stock based on the species' vulnerability to overexploitation. Information on the status of the stock is unlikely to improve considerably in the immediate future and the absence of such information should not be used as a reason for postponing or failing to take any measure based on the information principles of the Act.

Deemed values

216. Submissions included little comment for or against the implementation of differential deemed values. AFL supported the suggestion to implement differential deemed values and SeaFIC suggested that differential deemed values are a sound

management measure but would only be appropriate applied under Option 3 where there is sufficient headroom for fishers to balance their catch against ACE.

217. NZRFC suggested that there should be no decrease to deemed values (not proposed in this paper).
218. Since its QMS introduction in 2004, the annual deemed value rate for mako shark has been \$0.15 per kg (refer Table 12). Deemed value payments have historically been low which is to be expected in a fishery where the TACC is significantly under-caught.

Table 12: Total deemed value payments, deemed value rate and port prices for mako sharks since 2004 introduction

Year	Total deemed value payments	Deemed value rate	Port prices
2010-11	\$256.65	\$0.15	\$0.49
2009-10	\$20.70	\$0.15	\$0.45
2008-09	\$73.05	\$0.15	\$0.45
2007-08	\$67.00	\$0.15	\$0.45
2006-07	\$163.50	\$0.15	\$0.48
2005-06	\$957.00	\$0.15	\$0.48
2004-05	\$525.90	\$0.15	\$0.84

219. Analyses of catch versus ACE for 2010-2011 shows that 73% of fishers are 'ACE fishers' (do not own quota). Of those fishers who do own quota a large majority are catching well within their allocated amount. Of those fishers catching above their allocation, the largest surplus value is approximately 4.6 t and there do not currently seem to be any difficulties in fishers accessing ACE.
220. However, proposed decreases in the TACC are significant, and the disproportional quota holding will mean that reduction in the availability of ACE will not be reflected equally across the fishery. This may make it difficult for some fishers to source necessary ACE, and indeed some submissions expressed general concerns of the risk of increased deemed value payments instigated by a lack of available ACE.
221. MPI therefore does not recommend a change to the deemed value rate as part of this review. MPI suggests that a standard differential be applied to the stock whereby catch in excess of 20% of ACE incurs a higher deemed value rate⁹ to provide incentive for fishers to balance catch against ACE. MPI will also continue to monitor deemed value payment levels to ensure that they do not become a vehicle to circumvent the TACC.
222. MPI believes that even with likely effort increases in target fisheries, commercial fishers are unlikely to catch the full mako TACC under Option 3 as the proposed catch limit is significantly higher than current catches. For this reason, the use of deemed values should remain limited. The introduction of differential deemed values aims to

⁹ Under a standard differential deemed value rate schedule the applicable deemed value rate increases by 20% for every 20% of catch in excess of ACE holdings, up to a maximum 100% increase for all catch 100% or more in excess of ACE holdings.

prevent fishers from catching substantial quantities without acquiring ACE while still allowing small over-catches to be deemed at a reasonable cost.

Option Analysis

Summary of options considered for MAK 1

Option	Total Allowable Catch (tonnes)	Maōri Customary Allowance (tonnes)	Recreational Allowance (tonnes)	Other Mortality (tonnes)	Total Allowable Commercial Catch (tonnes)
Option 1	173	10	30	23	110
Option 2	189	10	30	25	124
Option 3	276	10	30	36	200

Status Quo

223. The status quo was not presented to stakeholders in consultation since, in MPI's view, it no longer meets the purpose of the Act of providing for utilisation while ensuring sustainability. The biological characteristics of the mako shark make it vulnerable to overexploitation which demands a cautious approach to TAC setting especially when faced with limited information and considerable uncertainty. The current elevated TAC level creates an unnecessary risk to the stock by allowing the potential for a significant expansion in catch. MPI still considers that the status quo does not meet the purpose of the Act as outlined in section 8 of the Act.

Option 1

224. This option is the most conservative of the 3 options proposed (a reduction from 406 to 110 tonnes) and thus provides the highest amount of confidence in its ability to maintain the reproductive capacity of mako and meet your sustainability obligations under the Act. However, Option 1 also has the highest potential adverse affect on utilisation. **MPI therefore does not recommend Option 1 on the basis that utilisation may be unnecessarily constrained.**

Option 2

225. This option has attempted to account for the potential increase to effort in the target southern bluefin fishery and therefore has less potential to adversely impact on commercial fishing operations than Option 1. In spite of this inclusion, several industry members have expressed concerns suggesting there is need for further headroom should other fisheries currently experiencing low catch rates expand their effort/catch, in particular bigeye tuna which accounts for approximately 58% of the mako bycatch.

226. Based on the potential for adverse affects on utilisation associated with possible expansion in target fisheries (in addition to southern bluefin), **MPI does not recommend Option 2 based on the potential adverse affect on utilisation and the fact that your sustainability obligations could also be met under the higher TAC of Option 3.**

Option 3

227. During preliminary consultation with stakeholders, industry expressed concern that economic hardship could occur under options 1 and 2 should the level of effort in target fisheries increase, or should increases in bycatch ratios occur from changes to fishing practice/area resulting in overall increased catch of mako shark.
228. Option 3 addresses these concerns by providing industry with additional flexibility, whilst at the same time being a significant reduction in the potential expansion of the fishery towards historical levels. A 46% reduction to the TAC reflects a precautionary approach in dealing with uncertainty and limited information.
- 229. MPI recommend Option 3 believing it best meets your obligations under the Act to provide for utilisation while ensuring sustainability.**

Allowances and TACC

230. No submissions were received that lead MPI to change its view on the allowances and TACCs associated with Options 1-3.

Assessment against Statutory Obligations

231. This section describes the management approach and explains how the best available information has been used to derive the recommended management measures.
232. MPI considers that all options presented in this paper satisfy your obligations under section 14 of the Act which provides for alternative TAC setting for stocks under Schedule 3.
233. In setting or varying sustainability measures, you must also act in a manner consistent with New Zealand's international obligations to fishing and the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992.
234. A wide range of international obligations relate to fishing, including use and sustainability of fishstocks; and maintaining biodiversity. MPI considers that the management options for mako sharks are consistent with these international obligations. International obligations of relevance to mako sharks include those found in Article 7 of the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean in relation to the application of a precautionary approach when managing highly migratory stocks within domestic waters.
235. MPI also considers the proposed management options to be consistent with the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (s 5 (b)). There is also an obligation to provide for input and participation of tangata whenua and have particular regard to kaitiakitanga (under section 12). Tangata whenua were consulted on these changes and input was obtained in the development of the proposal.

TAC

236. The Act allows you to set a TAC for mako sharks under Section 14 of the Act if you believe that the purpose of the Act would be better served by doing so since the

species is listed under Schedule 3. It is not possible to estimate MSY for the New Zealand component of this highly migratory stock which makes the application of Section 14 appropriate.

Information Principles

237. Section 10 requires that you take into account the information principles these being that:

- a) decisions should be based on best available information
- b) you should consider any uncertainty in the information available in any case
- c) you should be cautious in making your decisions in instances where the information is uncertain, unreliable or inadequate, and
- d) the absence of, or uncertainty in, any information should not be used as a reason for postponing or failing to take any measures to achieve the purposes of the Act.

Section 11 considerations

238. In making your decision on sustainability measures for mako sharks you must also have regard to the requirements of section 11 of the Act as follows:

- a) Section 11(1) (a): Before setting or varying any sustainability measure for any stock, you must take into account any effects of fishing on any stock and the aquatic environment. Mako sharks are largely caught as bycatch in bigeye tuna, southern bluefin tuna and swordfish fisheries. MPI has proposed a TACC level that is significantly higher than recent catches and therefore allows for expansion in the target commercial fisheries for which mako sharks are a bycatch.
- b) Section 11(1) (b): Before setting or varying any sustainability measure, you must take into account any existing controls under the Act that apply to the stock or area concerned. Standard management controls apply to the mako shark fishery, for example deemed values, amateur bag limits and fishing method constraints. MPI recommends that you introduce standardised ramping provisions in the application of deemed values but does not suggest changes to their current annual or interim values.
- c) Section 11(1) (c): Before setting or varying any sustainability measure for this stock, you must take into account the natural variability of the stock. Mako sharks are not thought to be a highly variable species with females having a low fecundity.
- d) Sections 11(2) (a) and (b): Before setting or varying any sustainability measure for any stock, you must have regard to any provisions of any regional policy statement, regional plan, or proposed regional plan under the Resource Management Act 1991 and any management strategy or management plan under the Conservation Act 1987 that apply to the coastal marine area and you

consider relevant. MPI is not aware of any such policy statements, plans or strategies that should be taken into account in the case of mako sharks.

- e) Sections 11(2)(c) and (d): Before setting or varying any sustainability measure for any stock, you must have regard to sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000 and any planning document lodged under section 91 of the Marine and Coastal Area (Takutai Moana) Act 2011. Porbeagle sharks are typically found beyond the continental shelf and are unlikely to be found within the Hauraki Gulf. There are no planning documents under the Marine and Coastal Area (Takutai Moana) Act 2011 that are relevant to this proposal.
 - f) Section 11(2A) (b): Before setting or varying any sustainability measure for any stock, you must take account of any relevant and approved fisheries plans. The National Fisheries Plan for Highly Migratory Species has been approved under section 11A. The proposed changes are in line with the plan and its objective of maintaining the reproductive capacity of HMS sharks.
 - g) Sections 11(2A) (a) and (c): Before setting or varying any sustainability measure for any stock, you must take into account any conservation or fisheries services, or any decision not to require such services. MPI does not consider that existing or proposed services materially affect the proposals for this stock. No decision has been made to not require a service in this fishery at this time.
239. Section 75 of the Act allows you to set or vary interim and annual deemed values for a stock and section 75(4) allows you to set different annual deemed values with respect to the same stock which apply to different levels of catch in excess of ACE.

Other Management Issues

Utilisation Issues

240. A number of submitters raised concerns over the finning of sharks based on the fact that a significant proportion of MAK 1 landings are as fins only. The TAC/TACC catch levels proposed are intended to address the sustainability of the fishery in New Zealand fisheries waters. The issue of full utilisation of New Zealand shark fisheries will be addressed through the review of the National Plan of Action – Sharks which is currently under way.

Schedule 6

241. Mako sharks can legally be returned to sea in accordance with the requirements of Schedule 6 of the Act as a means of managing landings against available ACE - limiting the potential for excessive deemed value liabilities and for the TAC to be exceeded under the options proposed. Sustainability benefits may also be achieved in particular by releasing mature females as some will be pregnant.
242. Based on observer reports, approximately 75% of mako sharks are alive when they are retrieved on longline thus providing opportunities for increased live release under Schedule 6. The current numbers of live releases under Schedule 6 are far below their potential and in combination with the proposed TACC levels, MPI proposes the implementation of a 'Code of Practice' (to be developed with industry) to promote

proper handling of individuals and support higher survival rates of released sharks. The 'Code of Practice' would be subject to review and performance monitoring.

243. A number of submitters showed support for the development of a Code of Practice with some suggesting that it could be used as an alternative to changes in the TAC. MPI does not believe that a Code of Practice used in isolation provides you with enough certainty to address sustainability concerns for MAK 1 but does support its use as a means to improve the implementation of any TAC changes you may make.