Ministry for Primary Industries
Manatū Ahu Matua

Initial Position Paper on Sustainability and Management Measures for Highly Migratory Species

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Growing and Protecting New Zealand

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Requests for further copies should be directed to:

Publications Logistics Officer
Ministry for Primary Industries
PO Box 2526
WELLINGTON 6140

Telephone: 0800 00 83 33
Facsimile: 04-894 0300

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Purpose

The Ministry for Primary Industries (the Ministry) seeks feedback from stakeholders on proposed changes to the sustainability measures and management controls for the following highly migratory species:

- **Southern bluefin tuna:** a proposal to increase the total allowable catch, allowances and total allowable commercial catch and to provide for unfished annual catch entitlements (ACE) to be carried forward.

- **Porbeagle sharks:** a proposal to reduce the total allowable catch, allowances and total allowable commercial catch.

- **Mako sharks:** a proposal to decrease the total allowable catch, allowances and total allowable commercial catch.

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For more information or any queries on the content of the documents please contact Arthur Hore at (09) 820 7686 or arthur.hore@mpi.govt.nz

If you would like a hard copy of the documents to be sent to you, please contact Kara McKelvey at (04) 819 4372 or kara.mckelvey@mpi.govt.nz

Please note: The closing date for submissions is Friday 3 August 2012.

Written submissions should be sent directly to:
Kara McKelvey
Ministry for Primary Industries
PO Box 1020
Wellington 6140

or emailed to kara.mckelvey@mpi.govt.nz

Management options for the southern bluefin tuna (STN 1) fishery for 2012–13: Initial Position Paper

EXECUTIVE SUMMARY

1. 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.

2. CCSBT meets annually to agree 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.

3. MPI proposes that these decisions be implemented as follows:

    a) By setting the Total Allowable Catch (TAC) of southern bluefin tuna (STN 1) to 830 tonnes (the country allocation set by CCSBT for New Zealand), with effect from 1 October 2012; and

    b) Enabling up to 10% of unfished commercial Annual Catch Entitlements (ACE) to be carried forward from one fishing year to the next, in line with provisions in section 67A by way of an Order in Council to omit STN1 from Schedule 5A of the Fisheries Act 1996 (the Act).

THE ISSUES

STN 1 stock status

4. 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.

5. 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.

6. 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.

7. 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

8. 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.

9. 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.

10. 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.

11. 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 1: Global TACs and country allocations (for New Zealand) adopted by CCSBT at its 18th annual meeting in October 2011 (tonnes).

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

12. MPI has implemented the CCSBT agreements on catch limits though 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 considers it 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

13. MPI proposes 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 2.

Table 2: Proposed TAC and allowances for STN 1 for the 2012–13 fishing year (tonnes)

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

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

RATIONALE FOR MANAGEMENT PROPOSALS

Total Allowable Catch

15. The TAC for southern bluefin tuna is able to be set under section 14 of the Act. This section provides for alternative TACs to be set for stocks specified in Schedule 3 (including southern bluefin tuna) if the Minister is satisfied that the purpose of the Act is better met in this way. In general, TACs are set in accordance with the provisions of s 13(2) of the Act (i.e. in a manner that would maintain, or move the stock towards, a

[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.

biomass at or above the level that can support maximum sustainable yield – MSY). This is not possible for southern bluefin tuna since it is a highly migratory species and it would not be possible to calculate MSY for the portion of the stock found within New Zealand fisheries waters (s. 14(8)(b)(iv)). Setting a TAC under section 14 also recognises that a national allocation for New Zealand has been determined as part of an international agreement (s. 14(8)(b)(ii)).

16. MPI proposes that the TAC be set to the level of New Zealand's country allocation as set by CCSBT. This has been the default position for setting New Zealand's TAC since southern bluefin tuna was introduced into the quota management system in 2004, with a TAC set at the level of our country allocation at that time. Prior to QMS introduction, competitive catch limits were used to implement New Zealand's country allocation as set by CCSBT.

17. 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.

18. Setting the TAC to the country allocation set by CCSBT would enable maximum utilisation from the fishery, which could have substantial benefits for fishers. The TACC section below (see paragraphs 35-38) provides further detail on these potential benefits.

19. 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 line with the measures adopted by CCSBT, some stakeholders have in the past suggested that New Zealand should take unilateral action to not fish its 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.

20. Relevant objectives: National Fisheries Plan for Highly Migratory Species: Section 11(2A) of the Act outlines factors for the Minister for Primary Industries 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.

21. New Zealand Harvest Strategy: A Harvest Strategy Standard was adopted for New Zealand fisheries in October 2008. The harvest strategy standard outlines classifications of stocks based on their status in relation to target and limit reference points. For highly migratory species (including southern bluefin tuna), the standard outlines that MPI will generally rely on international organisations in which New Zealand participates to determine the status of the species in question – in this instance CCSBT. MPI is satisfied that the advice from CCSBT's Scientific Committee (including an independent panel) represents the best available information to inform management decisions.

22. In addition, the standard outlines that officials will seek adoption of rebuilding strategies that meet or exceed the harvest strategy standard. 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.

23. 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.

TACC AND ALLOWANCES

Recreational and customary allowances

24. Southern bluefin tuna has historically been an occasional target of recreational gamefisheries, with fairly limited catches. More recently, a recreational gamefishery for Pacific bluefin tuna has developed off the west coast of the South Island. This fishery also has a bycatch of southern bluefin tuna from time to time, particularly early in the season.

25. Compulsory charter boat reporting covering this fishery was introduced from 1 November 2010. Prior to that, MPI monitored catches in this fishery through a voluntary reporting arrangement with the recreational charter vessels involved. As part of this scheme, sixteen vessels reported their catches and landings of both Pacific and southern bluefin tuna to MPI, as summarised in table 3 below. Some fish are tagged and released, while others are landed.

Table 3: Available information on recreational catches of southern bluefin tuna

	2007		2008		2009		2010	
	Landed*	Released#	Landed*	Released#	Landed*	Released	Landed*	Released
No. of fish	35	20	3	0	1	-	2	-
Weight (kgs)	4,025	2,171	400	0	130	-	240	-

* Data compiled from Voluntary Reporting Forms

Provisional data compiled from Gamefish Tag Reports – yet to be compiled for 2009 or 2010

\- Not yet available

26. Catches are variable, and are affected by the timing of the season as well as other factors. Reported landings in 2007 were slightly over the allowance of 4t, while landings since 2008 have been well below this level. Vessel numbers and trips since 2009 were possibly reduced from earlier levels because of financial factors. MPI considers on the balance there is some potential for recreational landings of southern bluefin tuna to exceed the current allowance, at least in some years. If choosing to increase the TAC, MPI proposes the Minister allow for 8t of recreational catch and 1t for customary fishing when deciding on the TACC.

27. The customary allowance is primarily to cover catches of southern bluefin tuna that are governed by customary regulations. There is no evidence to date that catches of southern bluefin tuna are made in this way; most if not all non-commercial catches are probably taken in line with general provisions for amateur fishing (rather than under the customary fishing regulations).

Allowance for other sources of fishing related mortality

28. The current allowance of 2t for other sources of fishing related mortality was set based on observer data on the (minimal) level of discards within the southern bluefin tuna fishery.

29. MPI proposes the existing allowance be pro-rated to provide a new allowance within the overall TAC that reflects what other sources of fishing related mortality might be under a higher level of fishing. An amount of 4t (rounded) is proposed within the TAC.

TACC

30. MPI proposes that the TACC be set at 817t for 2012–13. The proposed amount is reached by subtracting the allowances for non-commercial fishing and for other sources of fishing related mortality from the TAC of 830t, in line with the provisions of sections 20 and 21 of the Act.

31. The southern bluefin tuna fishery is a relatively high value fishery for a premium tuna product, with export earnings of around $18.09 million in 2011[2]. The value of making additional catch available is difficult to assess, because it depends on a range of factors including actual catches, and prices achieved in the main export market of Japan. However, using an average price of $38/kg based on the 2011 export figures, the value of the TACC, if fully caught, could be as much as $31 million (allowing for some processing of catch).

[2] This figure is achieved by pro-rating the available export data to the total catch for 2011, using the average value of the two most common export types – chilled whole and frozen whole (note these product types are assumed to in fact involve some minimal processing)

32. The indicative trading price for STN 1 ACE is $7,216 per tonne, suggesting an additional value of around $2.9 million from making an additional 404t of ACE available, assuming the additional ACE traded at similar levels to previous transactions in the fishery[3]. An industry submission made on a previous in-season review suggests $3,000 to $3,500 is a more realistic figure for recent ACE trades; at this value, the additional ACE could generate an extra $1.2 to 1.4 million. The latter figures are probably more realistic, particularly since the availability of additional ACE could lead to somewhat lower prices per tonne.

33. There is considered to be additional capacity within the New Zealand industry to respond to an increase in TAC/TACC, and this is reinforced by catches in 2011, where almost all of the additional ACE made available was caught (total catches were 547t out of an available 558t). However, actual catches tend to be variable and would not be expected to meet the TACC fully every year.

OTHER MANAGEMENT ISSUES

Future country allocations

34. CCSBT's adoption of a management procedure with 3-year quota blocks generally provides much greater certainty on what New Zealand's allocation will be in advance of the fishing year. However, the decision to modify the outcomes of the management procedure to operate more conservatively for the first years of its operation has led to some uncertainty about what the global catch limit and country allocations will be for 2013–14, because this is subject to additional advice from CCSBT's Scientific and Compliance Committees.

35. New Zealand's allocation is currently agreed to be 909t in that year, but it could be reduced (including below 830t) based on the advice of these committees. MPI considers this situation could be managed by running a short process to reduce the catch limit for 2013–14 if it becomes apparent this will be necessary after the Scientific Committee meets in August 2013.

36. If the country allocation of 909t remains in place, an in-season review could be undertaken, but it is not proposed that the baseline catch limit would be reviewed again in 2013.

Carry-forward provisions

37. CCSBT also adopted an agreement on the carry-forward of some unfished catch from one year to the next, within strict criteria[4]. New Zealand has advocated for such rules in the past because of the operational benefits for the New Zealand fishery, including:

    a) As a buffer against seasonal variability (both the availability of fish and the suitability of fishing conditions can vary from year to year); and

[3] This figure is based on the average ACE price of $7,216 per tonne for STN 1 from the 2006/07 fishing year. Insufficient ACE trading has occurred in more recent years to determine a more accurate figure.
[4] This agreement is outlined in Attachment 13 (Resolution on limited carry-forward of uncaught quota) of the Report of the Eighteenth Annual Meeting of the Commission, 10-13 October 2011, available at www.ccsbt.org.

b) To provide better ability to manage bycatch i.e. ACE can be set aside for bycatch later in the season; if it is not caught then it can be carried forward (there is a risk that the high cost of ACE would otherwise encourage fishers to fully catch their allocations, leaving no room for contingencies and creating a potential risk of discarding).

38. There are some differences between the domestic provisions for carry-forward outlined in section 67A of the Act, and the agreement adopted by CCSBT. The CCSBT carry-forward provisions apply within 3-year quota blocks, but not between them at this stage. This creates a potential risk of carried forward ACE exceeding the new catch limit if it is the same as or an increase of less than 10% compared to the TAC set for the previous 3-year block. In general, this situation could be managed by altering the baseline TAC if necessary (the timing would be adequate to do this since the new TAC will be known by mid-October of the year before the new fishing year commences). This is not considered to be a risk for the first year of the next quota block (2014–15), since the baseline TAC is proposed to be set at 830t, whereas the allocation likely to be available to New Zealand for 2013–14 is 909t, as outlined in table 1. Both the CCSBT rules and section 67A preclude any carry-forward from one year to the next if the country allocation or TAC has reduced.

39. The other main difference between the domestic provisions and the CCSBT agreement is that CCSBT allows up to 20% carry-forward from one year to the next, whereas section 67A allows for a 10% carry-forward. It is not proposed to make any domestic changes to address this at this time, although it is noted that in the future additional in-season review processes could potentially be used in order to fully provide for the carry-forward provisions agreed by CCSBT (i.e. up to 20% carry-forward) by increasing the amount of ACE available in the course of a fishing year.

Management options for the shortfin mako shark (MAK 1) fishery for 2012-13: Initial Position Paper

EXECUTIVE SUMMARY

1. 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 Fisheries Act 1996 (the Act) and in order to manage the stock New Zealand must cooperate with other countries in its conservation and management. Since 2005, the vehicle for this cooperation has been the Western and Central Pacific Fisheries Commission (WCPFC). The WCPFC's objective is to ensure, through effective management, the long-term conservation and sustainable use of highly migratory fish stocks in the western and central Pacific Ocean in accordance with the 1982 United Nations Convention on the Law of the Sea and the United Nations Fish Stocks Agreement.

2. 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. At that time there were concerns about declining abundance of shortfin mako shark in New Zealand fisheries waters.

3. New Zealand has prepared a National Plan of Action (NPOA)-Sharks. This plan provides guidance that is consistent with proposals contained in this IPP.

4. 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.

5. The Ministry for Primary Industries (MPI) therefore proposes that the TAC be reduced for shortfin mako shark (MAK 1) for the 2012–13 fishing year from 512 t to either:

   a) 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; or

   b) 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; or

   c) 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.

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

THE ISSUES

MAK 1 stock status

7. Compared with a wide range of shark species the productivity of shortfin mako sharks is very low. The shortfin mako 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.

8. Shortfin 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.

9. 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.

10. The status of shortfin 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 shortfin 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 shortfin mako shark in 2013 as part of WCPFC's Shark Research Plan for the Pacific.

International Context

11. The shortfin 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'; shortfin 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.

12. 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

13. Commercial – shortfin mako sharks are highly vulnerable to longline gears and 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 shortfin mako shark landed with reported commercial landings of shortfin mako shark reaching their peak in 2000-2001 (319 t).

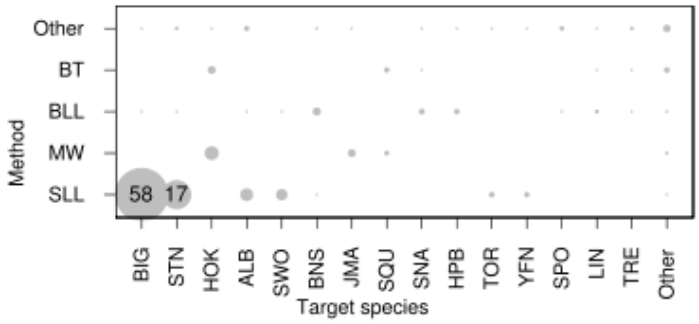


Figure 1: Proportion of landings of the MAK 1 stock taken by each fishing method and target species. The area of each circle is proportional to the percentage of landings taken using each combination of fishing method and target species.[5]

14. 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 shortfin mako was 30 (for fins). At the time of QMS introduction, consideration of international data of shortfin 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.

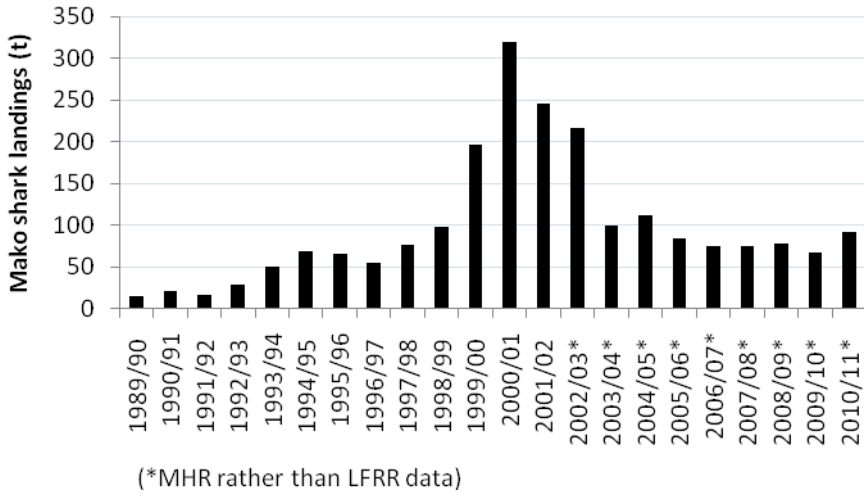


Figure 2: New Zealand commercial landings (t) of shortfin mako sharks reported by fishers (CELRs and CLRs) and processors (LFRRs) by fishing year (from: Fisheries Assessment Plenary Report Nov 2011 for shortfin mako http://fs.fish.govt.nz/Doc/22921/07-MAK_2011.pdf.ashx).

[5] 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".

15. Recreational - 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 shortfin 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).

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

Fishstock	Recreational Allowance	Customary Allowance	Other Mortality	Total Allowable Commercial Catch	Total Allowable Catch
MAK 1	50t	10t	46t	406t	512t

17. Shortfin mako shark was also added to the Sixth Schedule of the Act with the proviso that:

    A commercial fisher may return any shortfin mako shark to the waters from which it was taken if:

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

    b) the return takes place as soon as practicable after the shortfin mako shark is taken.

18. New Zealand also has a National Plan of Action for the Conservation and Management of Sharks (NPOA – Sharks) as part of its responsibilities as a member state of the 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.

19. Under the NPOA – Sharks, the efficacy of management measures to ensure sustainability is determined by a number of factors including:

    a) Trends in catches (i.e. substantially undercaught catch limits);

    b) Trends in size and maturity (i.e. significant juvenile catch); and

    c) The nature of shark catch (i.e. target vs. bycatch).

20. The TAC for shortfin mako sharks was set in 2004 at a level designed to allow for bycatch in associated tuna target fisheries. Since 2003/04, shortfin mako landings have declined to an average of 70-80 t (20% of peak landings). This decline closely coincides with their introduction to the QMS, but also with a significant reduction of the New Zealand longline fishery. 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 shortfin mako sharks migrating into the New Zealand EEZ 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.

21. Since their introduction to the QMS, there has been no review of catch limits for shortfin mako shark. The current TACC of 406t for shortfin 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 shortfin 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 PROPOSALS

22. MPI proposes that the TAC is reduced for shortfin mako shark (MAK 1) for 2012–13 from 512t to either:

    a) 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; or

    b) 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; or

    c) 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

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

RATIONALE FOR MANAGEMENT PROPOSALS

Setting the TAC

24. In general, TACs are set in accordance with the provisions of s. 13(2) of the Act (i.e. in a manner that would maintain, or move the stock towards, a biomass at or above the level that can support maximum sustainable yield (MSY). This is not possible for mako shark since it is a highly migratory species and it would not be possible to calculate MSY for the portion of the stock found within New Zealand fisheries waters.

25. The TAC for mako shark is able to be set under section 14 of the Act. This section provides for alternative TACs to be set for stocks specified in Schedule 3 (including mako sharks) where MSY cannot be calculated for the portion of the stock found within New Zealand waters. 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 while ensuring sustainability.

26. Although empirical data on sustainable yield is lacking, best evidence and anecdotal reports from both commercial and recreational fishers suggest that current and recent catch levels are more sustainable and have resulted in a rebound of shortfin mako numbers since concerns of stock declines in the late 90's early 2000's.

27. Given the known vulnerability of shortfin mako shark, MPI considers the obligation to ensure sustainability is better met by reducing the TAC and all three options proposed reduce the risk of the catch reaching unsustainable levels. These reflect a precautionary approach in dealing with uncertainty and limited information on the status of the stock as required by the Convention on the Conservation of Highly Migratory Species in the Western and Central Pacific Ocean as reflected in the information principles set out in section 10 of the Act.

28. Utilisation is provided by way of setting allowances for commercial, recreational and customary fishers. The TAC options proposed vary in their impact on utilisation particularly commercial utilisation. The proposed levels seek to; minimise the impact on commercial fishers by setting a TACC which better reflects actual catch levels, minimise the risk to the stock of fishing primarily on juveniles and recognise the importance of shortfin mako as a bycatch in other fisheries. Proposals are consistent with guidelines set out in the NPOA-Sharks relating to trends in the catch, size distribution of the catch and impacts on other fisheries.

29. Section 11(2A) of the Act outlines factors for the Minister for Primary Industries 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 (HMS) under section 11A of the Act in September 2010. The fisheries plan outlines various management objectives for HMS, along with operational management plans and actions for achieving objectives.

30. Contributing to 'Maintaining a sustainable fishery for HMS within environmental standards', is the relevant objective in relation to this review including Operational objective 6.4 in New Zealand's HMS Operational Management Plan for large pelagic species which is to maintain the reproductive capacity of HMS shark populations.

31. The National Fisheries Plan for HMS 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.

TACC and allowances

Recreational allowances

32. There are no estimates of the total recreational shortfin mako catch landed in New Zealand waters. When the shortfin mako was first introduced into the QMS, several

hundred shortfin mako sharks per year were reported landed, with many more tagged and released. Since introduction to the QMS the proportion of the total shortfin mako tagged and released by recreational fishers has risen dramatically.

33. Reports from the New Zealand Sports Fishing Council (NZFSC) conclude that there is less targeted effort for shortfin 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 of the total recreational catch of shortfin mako with 92% (546 fish) tagged and released for the 2010-2011 season. While the number of shortfin 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.

34. With information on the increasing trend in the proportion of shortfin mako tagged and released (less landed) and a general understanding of the likely level of current fishing activity in the recreational shortfin mako shark fishery, MPI proposes that the existing recreational allowance is reduced for MAK 1 to 30 tonnes.

Customary allowances

35. There are no estimates of Maori customary catch of shortfin mako sharks. Traditionally, shortfin 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 hapū in the management of HMS. This research is intended to identify the specific relationships (importance and value) of HMS species (including shortfin mako) to Maori customary fisheries. Current customary allowances for shortfin mako sharks are 10 tonnes, MPI proposes that this allowance is retained until such time that further information suggests the need for review.

Allowance for other sources of fishing related mortality

36. Releases in accordance with the Sixth Schedule of the Act are permitted for shortfin mako sharks, but of those shortfin mako sharks released alive it is unknown how many survive. Approximately 75% of shortfin mako sharks caught on tuna longlines are assessed alive by observers when brought to the vessel and thus able to be released under the Sixth Schedule.

37. 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 Sixth Schedule releases (live discards) by fishers in an effort to manage their catch against quota. This anticipated increase in Sixth Schedule releases, combined with a significant increase in the proportion of tagged-released shortfin mako in the recreational fishery suggests a likely increase in the total mortality associated with fishing.

38. MPI proposes that the allowance for fishing related mortality as a percentage of the TACC and other allowances is increased from 10% to 15%.

TACC

39. MPI proposes three TACC options based on the TAC options proposed.

Option 1: Within a TAC of 173 tonnes, that a TACC of 110 tonnes is set – the highest commercial catch level since the 2004 QMS introduction.

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

41. This option is the most conservative of the 3 options proposed (a reduction from 406 to 110 tonnes) and thus has the highest potential for fishers to incur deemed value charges if they are unable to avoid bycatch and ACE is limited. However, commercial catches of shortfin mako shark have not exceeded this proposed TACC since the introduction of this species to the QMS in 2004. This TACC is unlikely to be exceeded in any one year given current levels of effort in the fishery and thus should provide for current utilisation.

Option 2: Within a TAC of 189 tonnes, that a TACC of 124 tonnes is set – the highest commercial catch level since the 2004 QMS introduction (110 tonnes) plus 14 tonnes to account for the potential for additional effort in the southern bluefin tuna fishery.

42. This option allows for an expansion in the target fishery for southern bluefin tuna fishery and an expected associated increase in the bycatch of shortfin mako shark. The suggested shortfin mako TACC is derived by combining the highest reported commercial catch level for shortfin 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).

43. A TACC at this level has less potential to adversely impact on commercial fishing operations than option 1.

Option 3: Within a TAC of 276 tonnes, that a TACC of 200 tonnes is set – a reduction of the TACC to around half its current level

44. The fact that shortfin mako is an unavoidable bycatch of valuable target fisheries for bigeye and southern bluefin tuna means that catch levels are subject to variation in the effort levels in target fisheries, and to a degree, the location of that fishing effort. Preliminary discussions with industry raised concerns around TACC options being reduced to current catch levels given the potential for other target fisheries to expand and/or change in location; such changes may restrict the availability of ACE in the fishery leading to higher deemed value payments.

45. It was suggested that these unknowns may cause particular hardships to operators 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 bycatch of shortfin mako shark. This option 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.

46. The provisions of the Sixth Schedule of the Act allowing live release will be important to allow fishers to better manage catch of ACE.

47. A TACC at this level has the lowest potential to adversely impact on commercial fishing operations of the three proposals put forward, but carries a higher degree of uncertainty in its ability to deal with the sustainability concerns for the stock.

OTHER MANAGEMENT ISSUES

Deemed Value Setting

48. Since its QMS introduction in 2004, the annual deemed value rate for shortfin mako shark has been $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 1: Total deemed value payments, deemed value rate and port prices for shortfin 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

49. 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.

50. 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. 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 rate[6] 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.

Code of Practice

51. Shortfin mako sharks can legally be returned to sea in accordance with the requirements of the Sixth Schedule 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.

52. In the case of shortfin mako shark approximately 75% of sharks are alive when they are retrieved on longline thus providing opportunities for increased live release under Schedule Six. The current numbers of live releases under the Sixth Schedule 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

[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.

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

Full utilisation

53. 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 when the National Plan of Action – Sharks is reviewed later in 2012.

Management options for the porbeagle shark (POS 1) fishery for 2012-13: Initial Position Paper

EXECUTIVE SUMMARY

1. 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). Porbeagle shark was added to the Third Schedule of the 1996 Fisheries Act (the Act) with a total allowable catch (TAC) set under section 14 based on its highly migratory nature and the fact that an estimate of maximum sustainable yield (MSY) for the New Zealand component of the stock cannot be derived. 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.

2. 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 Sharks (NPOA-Sharks) have led the MPI to propose a more cautious approach to the management of this stock.

3. 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.

4. 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.

5. MPI is seeking comments on three potential Total Allowable Catch (TAC) levels:

    a) 88 tonnes comprised of a 6 tonne recreational allowance, a 2 tonne customary allowance, a 7 tonne allowance for other sources of mortality and a TACC of 73 tonnes – the highest commercial catch level since the 2004 Quota Management System (QMS) introduction; or

    b) 106 tonnes comprised of a 6 tonne recreational allowance, a 2 tonne customary allowance, a 9 tonne allowance for other sources of mortality and 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.

    c) 129 tonnes comprised of a 6 tonne recreational allowance, a 2 tonne customary allowance, an 11 tonne allowance for other sources of mortality and a TACC of 110 tonnes.

6. 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.

THE ISSUES

POS 1 stock status

7. 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.

8. The stock structure of porbeagle sharks in the Southern Hemisphere is unknown. 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 MSY for the part of the stock that is found within our fisheries waters, however the stock is considered likely to be below B_{MSY}[7].

9. Existing unstandardised 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.

10. 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.

11. 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

12. 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.

13. 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.

[7] 2011 Porbeagle Plenary Report

14. 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 International Union for Conservation of Nature (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.

15. 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.

16. 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.

17. 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.

18. 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

19. 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 1: Current allowances for porbeagle sharks

Fishstock	Recreational Allowance	Customary Allowance	Other Mortality	Total Allowable Commercial Catch	Total Allowable Catch
POS 1	10t	2t	22t	215t	249t

20. Porbeagle shark was also added to the Sixth Schedule of the Act with a provisions that:

    A commercial fisher may return any porbeagle shark to the waters from which it was taken from if:

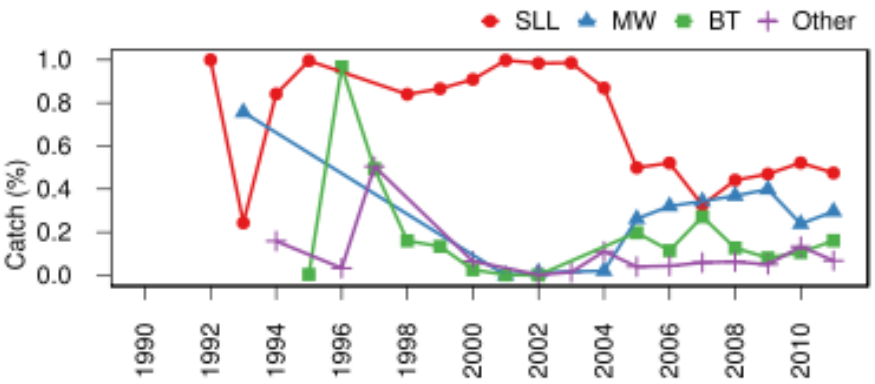
    a) That porbeagle shark is likely to survive on return; and

    b) The return takes place as soon as practicable after the porbeagle shark is taken.

Commercial fishery

21. 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.

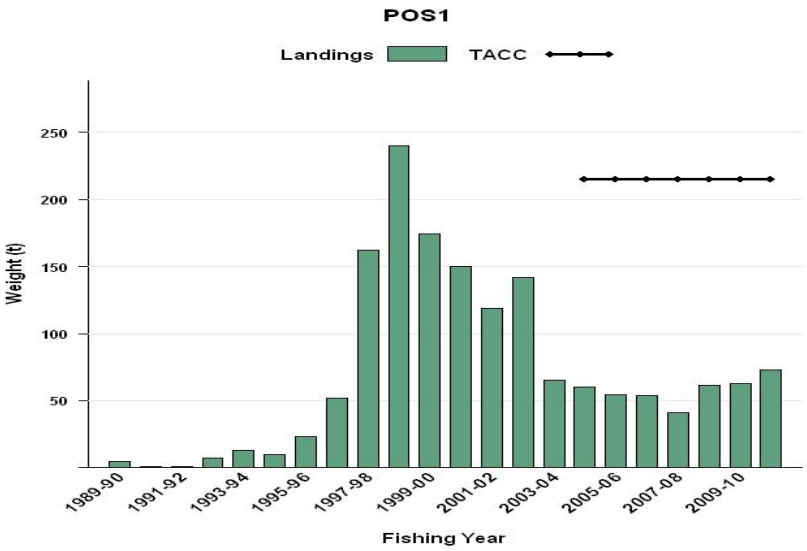
Figure 1 : Porbeagle catch percentage by method and year[8]



22. 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.

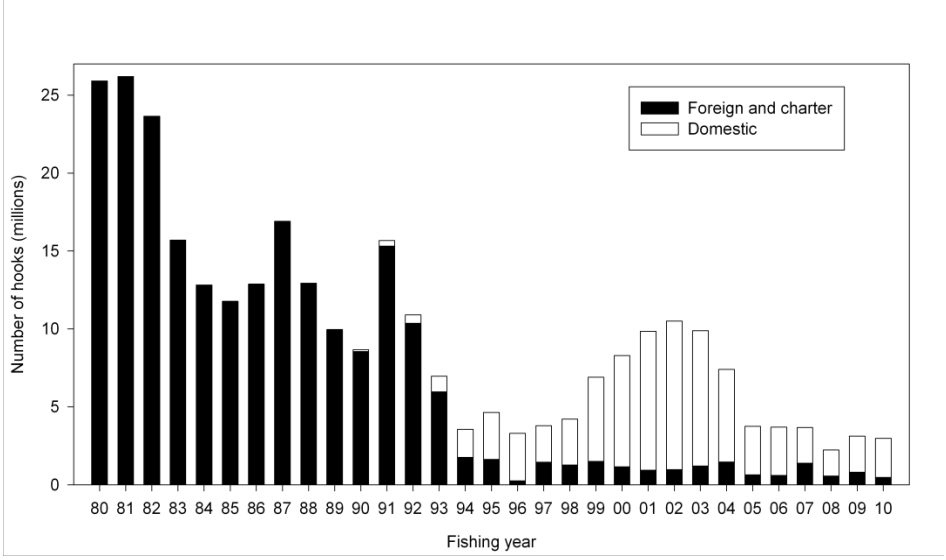
[8] http://finz.trophia.com accessed on 14-06-12

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



23. Part of the decline in catch 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.



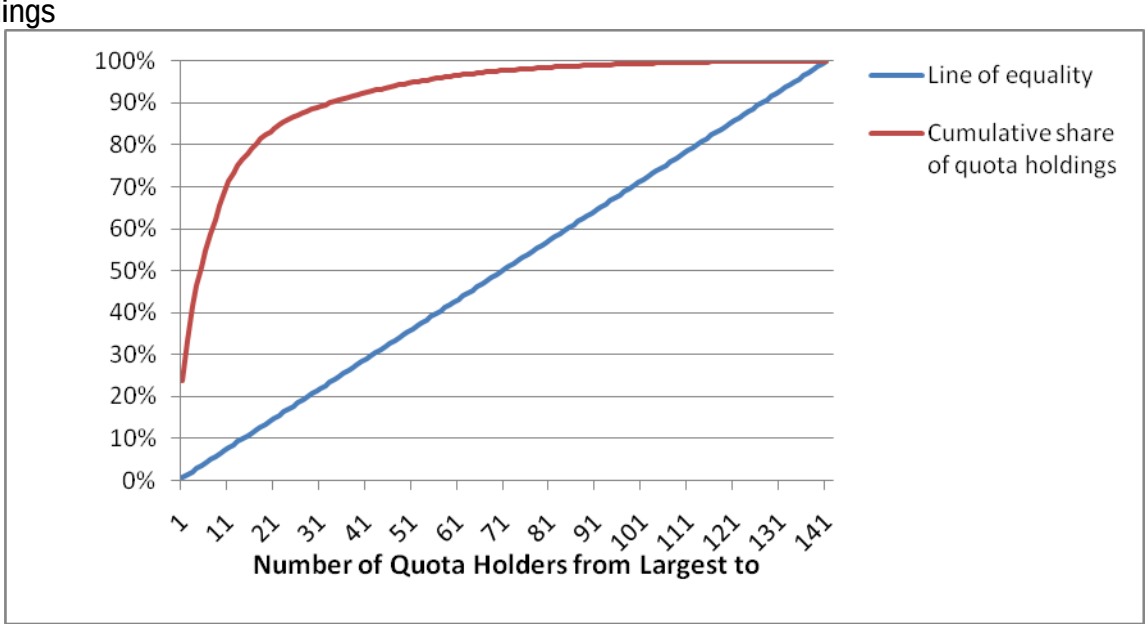
24. Table 2 provides the previous five fishing years' catch volumes in relation to the total allowable commercial catch giving some indication of the gap that exists between actual catches and the current limit.

Table 2: Commercial landing of porbeagle sharks for last five fishing years[9]

Species Code	Species	Fishing Year	TACC (kg)	Annual Catch (kg)	Catch as % of TACC
POS	Porbeagle shark	2006-2007 (Oct) Fishing Year	215,000	53,925	25%
		2007-2008 (Oct) Fishing Year	215,000	40,831	19%
		2008-2009 (Oct) Fishing Year	215,000	61,525	29%
		2009-2010 (Oct) Fishing Year	215,000	64,592	30%
		2010-2011 (Oct) Fishing Year	215,000	73,237	34%

25. Figure 4 demonstrate the strong concentration of quota with a limited number of individuals and in fact the largest quota holder is responsible for 24% of holdings in the porbeagle fishery. In fact, the 5 largest of the 141 quota holders command more than half of the total quota with the vast majority of holders carrying minimal quantities. A high number of fishers catching porbeagle sharks do not hold quota and rely instead on ACE purchases.

Figure 4: Distribution of quota in porbeagle fishery using Lorenz curve based on 2011-12 holdings



Recreational fishery

26. An estimate of the recreational catch is not available but is likely to be negligible because they usually occur over the outer continental shelf or beyond.

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

Customary fishery

27. 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 PROPOSALS

28. MPI proposes that the TAC for 2012–13 be set to either:

    a) 88 tonnes comprised of a 6 tonne recreational allowance, a 2 tonne customary allowance, a 7 tonne allowance for other sources of mortality and a TACC of 73 tonnes – the highest commercial catch level since the 2004 QMS introduction; or

    b) 106 tonnes comprised of a 6 tonne recreational allowance, a 2 tonne customary allowance, a 9 tonne allowance for other sources of mortality and 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.

    c) 129 tonnes comprised of a 6 tonne recreational allowance, a 2 tonne customary allowance, an 11 tonne allowance for other sources of mortality and a TACC of 110 tonnes.

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

RATIONALE FOR MANAGEMENT PROPOSALS

Total Allowable Catch

30. The TAC for porbeagle shark is able to be set under section 14 of the Act. This section provides for alternative TACs to be set for stocks specified in Schedule 3 (including porbeagle) if the Minister is satisfied that the purpose of the Act is better met in this way. In general, TACs are set in accordance with the provisions of s. 13(2) of the Act (i.e. in a manner that would maintain, or move the stock towards, a biomass at or above the level that can support maximum sustainable yield – MSY). This is not possible for porbeagle shark since it is a highly migratory species and it is not possible to calculate MSY for the portion of the stock found within New Zealand fisheries waters (s. 14(8)(b)(iv)).

31. 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.

32. MPI considers the obligation to ensure sustainability is met under all three proposals. The considerable TACC reductions in each scenario reflect a precautionary approach in dealing with uncertainty, limited information on the status of the stock and the likely timeframe before new information becomes available.

33. Utilisation objectives are also taken into consideration under all three scenarios with the proposed levels seeking to minimise the impact on commercial fishers by setting a TACC which better reflects actual catch levels and recognises the importance of porbeagle as a bycatch in other fisheries.

RELEVANT OBJECTIVES

National Fisheries Plan for Highly Migratory Species

34. Section 11(2A) of the Act outlines factors for the Minister for Primary Industries 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.

    b) Promoting a viable and profitable tuna fishery, including through the review of TAC/Cs. The current review is in line with this strategy.

    c) Non-commercial objectives: 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.

New Zealand Harvest Strategy

35. A Harvest Strategy Standard[10] was adopted for New Zealand fisheries in October 2008. The Harvest Strategy Standard states that for highly migratory species a TAC may need to be established under the Fisheries Act (1996) for the New Zealand portion of the stock within its Exclusive Economic Zone when no TAC has been established by an international organisation or agreement. In such a case, the Minister must act in a manner consistent with New Zealand's international obligations and the purpose of the Act.

National Plan of Action - Sharks

36. New Zealand also has developed the NPOA – Sharks as part of its responsibilities as a member state of the FAO. Under the NPOA – Sharks, the efficacy of management measures to ensure sustainability is determined by a number of factors including:

    1. trends in catches

    2. trends in size and maturity; and

[10] The Harvest Strategy Standard is a technical standard to be used by MPI when applying the legal provisions of the Fisheries Act 1996 for the purpose of providing advice to the Minister for Primary Industries related to the setting of TACs, and managing fisheries in accordance with the Minister's decisions. It does not have legal force. Rather, it is a statement of how the Ministry intends to give effect to the obligations in the Act in the context of the practical requirements of managing fisheries.

3. the nature of shark catch

37. MPI believes that the substantial undercatch of porbeagle sharks, in relation to the current limit, along with the significant portion of juvenile catch raise concerns based on the first two factors. MPI concludes that the current management is not as effective as it would be under the limits proposed in this paper based on the guidance provided in the NPOA - Sharks.

TACC AND ALLOWANCES

Recreational and customary allowances

38. There is no information available that would allow for an estimate of either the recreational or customary catch. Porbeagle sharks are not one of the species for which amateur charter vessel reporting is mandatory.

39. Porbeagle shark are not traditionally targeted by the game fishery and are not easily accessible to most recreational or customary fishery which likely limits their catch levels considerably.

40. MPI proposes to lower the recreational allowance to 6 tonnes to reflect the likely catch as assessed in relative terms with more popular species such as blue shark and mako. No changes to the associated bag limits are proposed based on the low likelihood of catch within the sector.

41. MPI proposes to retain the current customary allowance of 2 tonnes.

Allowance for other sources of fishing related mortality

42. The current allowance of 22t (or 10% of TACC) for other sources of fishing related mortality largely reflects the incidental mortality that comes from the release of live porbeagle sharks. MPI proposes to continue setting the allowance for other sources of fishing related mortality using 10% of TACC.

TACC

43. MPI proposes three TACC options based on the TAC options above.

    Option 1: Within a TAC of 88 tonnes, set a TACC of 73 tonnes – the highest commercial catch level since the 2004 QMS introduction.

44. This option is also 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.

45. 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. The 2010-11 levels 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.

Option 2: 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.

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

47. The following assumptions were made in determining the estimated increase related to STN 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.

48. 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: within a TAC of 129 tonnes set a TACC of 110 tonnes.

49. Preliminary discussions were held with the highly migratory species fish plan advisory group (FPAG) 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.

50. It was also suggested that the low 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.

51. MPI has suggested this third option to reflect the concerns that arose during preliminary consultation and to present an additional option that allows for further expansion in the fishery. The TAC in option 3 still represents a significant reduction from the current level and therefore does limit this potential expansion to a point that is less likely to put the stock at risk.

52. Of the three options 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.

[11] 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).

OTHER MANAGEMENT ISSUES

Utilisation Issues

53. A significant proportion of POS 1 landings are as fins only. The TAC 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 when the National Plan of Action – Sharks is reviewed later in 2012.

Deemed value setting

54. 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 3: Total deemed value payments, deemed value rate and port prices for porbeagle sharks since 2004 introduction.

Year	Total deemed value payments	Deemed value rate	Port prices
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

55. 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 rate[12] 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.

56. Porbeagle sharks can legally be returned to sea in accordance with the requirements of the Sixth Schedule 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 the Sixth Schedule provisions.

57. To facilitate this 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.

[12] 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.