

# SUMMARY OF SUBMISSIONS

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- 1 Submissions on the draft NPOA-Sharks (NPOA) were received from;
  - i) French Pass Safaris (FPS)
  - ii) Karl Bennett (Bennett)
  - iii) James McGlone (McGlone)
  - iv) Bob Lowe (Lowe)
  - v) Aaron Napier (Napier)
  - vi) Marcus Cameron (Cameron)
  - vii) Chris & Carolyn
  - viii) Simon Aiken (Aitken)
  - ix) Simon Tredgett (Tredgett)
  - x) Veronica Friedlander (Friedlander)
  - xi) Motupipi Fishing Company Ltd. (Motupipi)
  - xii) Hetty Vink (Vink)
  - xiii) New Zealand Big Game Fishing Council (NZBGFC)
  - xiv) Simon Pierce (Pierce)
  - xv) Solander Group (Solander)
  - xvi) National Institute of Water and Atmosphere Ltd. (NIWA)
  - xvii) Northern Fisheries Management Stakeholder Company Ltd. (NFMSCL)
  - xviii) Peter Brierley (Brierley)
  - xix) SeaDragon Marine Oils Ltd. (SeaDragon)
  - xx) New Zealand Seafood Industry Council Ltd. (SeaFIC)
  - xxi) WWF- New Zealand (WWF)
  - xxii) Andrew Penniket (Penniket)
  - xxiii) Royal Forest and Bird Protection Society of New Zealand (Forest & Bird)
  - xxiv) Robert Pollock (Pollock)
  - xxv) Humane Society International (HIS)
  - xxvi) Lesley Read (Read)
  - xxvii) Te Ohu Kaimoana Trustee Ltd. (Te Ohu)
- 2 In addition to these submissions, four letters addressing shark issues were sent to you and an additional four emails were received through the MFish feedback system. The authors of these communications were advised that their concerns would be considered in finalising the NPOA. These additional

communications were received from:

- i) Jan Baker (Baker)
- ii) Pauline Fowler (Fowler)
- iii) Barry Hawes (Hawes)
- iv) Jenny and Tony Enderby (Enderby)
- v) Sarah Hope (Hope)
- vi) Tavita's Tours (Tavita)
- vii) Denise Joyce (Joyce)
- viii) Maureen King (King)

## GENERAL COMMENTS

- 3 A number of submitters provided general expressions of support for the NPOA although all submitters proposed changes to aspects of the NPOA as detailed in the following sections.
- 4 Forest & Bird, NIWA and WWF, all support development of the NPOA and consider that the NPOA provides a good overview of existing shark management in New Zealand, particularly in regard to the quota management system. NIWA and WWF also consider that the NPOA provides a concise, informative summary of the diversity and distribution of New Zealand's sharks. Both of these submitters consider that the NPOA provides a good base for building a comprehensive management strategy for sharks. Pierce considers that the NPOA provides an extremely important summary of recommended conservation and management measures for New Zealand shark stocks.
- 5 From a commercial fishers perspective Solander considers that the NPOA provides a good description of the commercial fishery and the status of shark stocks in New Zealand. Both Solander and SeaFIC support the management principles outlined in the NPOA, with SeaFIC fully endorsing New Zealand's existing management system as the primary framework to ensure the conservation and management of sharks and their long term sustainable use.
- 6 HSI is pleased that New Zealand has developed an NPOA but considers it disappointing that while global momentum is building towards ameliorating the decline in shark populations, New Zealand continues to lag behind in the areas of shark finning prohibitions and species conservation.
- 7 Several submitters, notably WWF and NIWA, identified some factual errors and what they considered to be misleading statements in the NPOA. NIWA and WWF also suggested that the background section be expanded to better describe shark biology which is the crux of their vulnerability. NIWA offered to draft some additional wording and WWF provided some additional text.

*MFish note the broad support for development of an NPOA for New Zealand. Factual errors and misleading statements noted by submitters have been checked and updated as appropriate.*

## PART 1 NEW ZEALAND SHARK SPECIES

### Stock status

8 NIWA and WWF submit that the NPOA lacks a summary of available information on the current status of New Zealand shark populations. They submit that the inclusion of this information would:

- reveal that the status is unknown for most stocks of all species
- focus attention on future research and management needs
- serve as a benchmark against which future advances can be measured

9 Forest & Bird recommends that an initial assessment of all shark species be completed by the end of 2008.

*The status of QMS shark stocks was summarised in Appendix 1 of the NPOA. This section has been updated to include available information on the current status of these shark stocks. Where there is information available on stock status of non-QMS sharks this has also been included. In most cases however information on these stocks is limited to catch data. Catch data for the last five completed fishing years is summarised in Appendix 2 for all shark species reported by commercial fishers.*

*MFish also note that the research and monitoring programme that is a key action under the NPOA is designed to allow the effectiveness of the management of sharks to be assessed.*

*The timeframe for implementation of actions under the NPOA is addressed later in this paper but research planning requirements mean that this information will not be available in the timeframe requested by Forest & Bird. However MFish will continue to monitor stock sustainability for all QMS species, including the QMS shark species, and will take action to address any sustainability concerns that arise.*

## PART 2 SHARK MANAGEMENT IN NEW ZEALAND

### Section A Management frameworks

#### *QMS management framework*

10 NIWA and WWF agree with statements in the NPOA that the QMS is a good fisheries management tool, and that many of our common shark species are included within it. They note that for rig, school shark and elephantfish, all of which have been in the QMS since 1986, catches have been sustained for 20 years. They contend that this must be regarded as a success, because few shark fisheries overseas have shown such long-term resilience. Without the QMS both NIWA and WWF consider that it is unlikely that there would be fisheries for any of these species in New Zealand.

11 However NIWA and WWF note that the system still requires considerable improvement before it can achieve its goal of managing catches of shark stocks at the level of maximum sustainable yield. Both NIWA and WWF contend that the tone of

the NPOA in relation to the QMS is unrealistically optimistic in its ability to conserve and manage shark stocks, and that there are many shortcomings, limitations and even some failures in the current system. They therefore recommend precautionary management of shark stocks under the QMS.

- 12 Specifically they contend that the effectiveness of the QMS in ensuring sustainability of shark populations relies on the following:
- i) *Availability of accurate catch data (including discards) to determine fishing mortality* – Specific issues relating to the reporting framework are addressed in detail later in this paper.
  - ii) *Understanding the biological productivity of the species* – NIWA and WWF concede that the biological productivity is reasonably well understood for QMS shark species as a result of a series of MFish research projects conducted over the last decade. However they consider that there remain issues relating to aging (e.g. porbeagle), length of reproductive cycle (e.g. mako) and fecundity of egg-laying sharks.
  - iii) *Knowledge of each stock's geographic range* - although tagging data show that our school, great white, mako and blue sharks move well beyond the New Zealand EEZ the degree to which New Zealand sharks mix with those elsewhere is generally poorly understood.
  - iv) *Stock monitoring tools* - Although fishery-independent monitoring is less susceptible to bias they contend that these techniques are seldom applied to sharks as they are prohibitively expensive. Trawl surveys have been used to monitor stock size for spiny dogfish and to a lesser extent rig. However, trawl nets probably do not sample the larger, more powerful sharks adequately. Consequently the fishery-dependent method of CPUE analysis is often the only tool that can be applied to sharks.
  - v) *Stock assessment to determine current status of each stock and sustainable yields* – NIWA and WWF note that the only quantitative stock assessment for a New Zealand shark species is an assessment for SPO 7 presented to the MFish Inshore Working Group. Consequently they submit that it is not currently possible to determine quantitatively the status of any New Zealand shark stock, or to estimate the maximum sustainable yield with any confidence.
- 13 Although Forest & Bird concedes that the QMS could ensure the conservation and management of sharks and their long-term sustainable use if it were correctly and appropriately implemented, it considers that current QMS management is grossly inadequate. Specifically it notes that there is no critique of the quality of stock assessments or how up-to-date they are for QMS species, and that there is a paucity of information available for some of the threatened shark species managed under the QMS. Forest & Bird includes porbeagle and mako sharks in this latter category.
- 14 Forest & Bird considers that effectiveness of the QMS relies on assessments of the current status of each stock and estimates of sustainable yields. It notes that there is little information to sufficiently meet these requirements for any shark species and it is not possible to adequately estimate the maximum sustainable yield of any shark

species in the QMS. While acknowledging the difficulty of obtaining this information, Forest & Bird considers that the NPOA should at least detail:

- a simple review of current information
- species which have had stock assessments
- the quality of these assessments
- the risk of stock collapse
- the impact on associated and dependent species and ecosystems
- gaps in knowledge required to accurately assess stock status.

*MFish note the general support for the ability of the QMS to manage shark species by these submitters, and in particular the contention by NIWA and WWF that the longevity of New Zealand's primary commercial shark fisheries is a reflection of the success of this management system for these species. MFish also notes submitters concerns with the specifics of how the QMS is applied to shark stocks - specifically how the status of shark stocks is monitored and how sustainable catch limits are set. Submitters point to a paucity of information on productivity, geographic distribution, and catch as areas of particular concern.*

*Information on the stock status of QMS species has been updated in Appendix 1 of the NPOA to better reflect what is known about shark stocks. MFish accepts that there is generally sparse data on these stocks, driven largely by their low economic value, few target fisheries and generally low catches. Specific actions under the NPOA have been designed to address concerns regarding productivity, spatial distribution and catch reporting.*

#### *Catch limits for QMS stocks*

- 15 NIWA and WWF contend that a more precautionary approach needs to be taken in setting TACs for shark species. The biomass at which maximum sustainable yield (MSY) is achieved is probably much higher for sharks than for bony fishes due to sharks very low productivity, and the close relationship between recruitment and the number of breeding females. NIWA and WWF suggest an urgent a review of current assessment processes and management of sharks to determine whether they are appropriate, and that TACs are sustainable in the long-term. Forest & Bird go further and recommend that unless there is robust scientific data available to adequately assess MSY for QMS shark species that the TAC should be set at zero. Penniket contends that the concept of MSY is not relevant to any New Zealand shark species because they are highly mobile, often transitory and there is little information on population parameters such as fecundity.
- 16 Forest & Bird note that section 13 requires the biomass of a fish stock to be retained at, or above, a level that can produce the MSY, having regard to the interdependence of stocks. It also notes that MSY is defined as being the greatest yield that can be achieved over time while maintaining the stock's productive capacity, having regard to the stock's population dynamics and any environmental factors that influence the

stock. Forest & Bird submit that both the interdependence of stocks and the environmental factors that influence the stock are either not known or not considered when estimating MSY for sharks. In its view requirements under section 13 are therefore not being adequately met and all shark species managed under section 13 should be reviewed.

- 17 WWF also submits that, as far as it is aware, no consideration is given to the "interdependence of stocks" or the role of sharks in the ecosystem when estimating MSY for sharks and that the NPOA should include proposals and measures to correct this omission.

*MFish does not agree that the concept of MSY is less appropriate for shark stocks than for other species. What is clear, however, is that the low productivity typical of shark species is an important consideration in determining the biomass that can support the maximum sustainable yield.*

*MFish also accepts that many shark stocks are apex predators and as such the interdependence of stocks may be of particular significance when the Minister is advised on sustainability decisions relating to shark species. Similarly environmental conditions may be of significance to shark stocks particularly those which utilise harbours for pupping.*

*Ultimately decisions relating to the sustainability risks faced by sharks stocks, and the appropriate management response to address that risk are for the Minister to determine. The Minister is required, under section 10 of the Act to base such decisions on the best available information and ensuring that the Minister is apprised of the best available information is a key responsibility of MFish. While MFish acknowledges that there are gaps in the information relating to sharks (including that relating to the interdependence of shark stocks with other species and the environmental conditions of particular significance to shark), addressing these data deficiencies is one of the primary focus's of the NPOA. MFish will continue to ensure that the Minister is aware of the best available information when determining appropriate TACs for QMS shark stocks.*

*MFish agrees with Penniket that the concept of an EEZ based MSY may not be relevant to highly mobile and transitory shark species. This has been addressed by the inclusion of blue, porbeagle and mako sharks on Schedule 3 of the Act. The TACs for stocks on this schedule may be set other than in accordance with the MSY if this would better meet the purpose of the Act. One of the rationale by which stocks can be included on this schedule is if they are a highly migratory species.*

#### *Limit reference points*

- 18 HIS considers the absence of overfishing thresholds for any shark species is alarming given their vulnerability to overfishing, the increasing value of shark fins and their life history characteristics. HIS submit that overfishing thresholds for target and bycatch shark species should be considered as a matter of priority and incorporated into the NPOA.

*MFish is developing a Harvest Strategy Standard to guide the setting of catch levels for QMS stocks. This standard is likely to require the setting of target, threshold, and*

*limit reference points for all QMS fishstocks. Limit reference points define a biomass level below which the stock is considered overfished and a rebuilding strategy must be implemented.*

### *Section 14B*

- 19 NIWA and WWF consider that, given their inherent vulnerability and the lack of any reliable MSY estimates for sharks, section 14B is not a sufficiently precautionary management approach for shark species. Along with Forest & Bird they oppose the use of section 14B of the Fisheries Act to manage shark species and recommend that the NPOA state that section 14B will not be used to manage sharks.

*MFish agrees that the low productivity of shark species means that section 14B is unlikely to constitute a suitable management framework for shark species. MFish does not however consider it necessary to explicitly exclude the use of s 14B for the management of shark species.*

*While MFish considers it unlikely that sharks will be managed under section 14B, there are a number of safeguards to ensure the long-term viability of species managed under section 14B explicit in the legislation. This includes setting the TAC at a level that maintains the stock above a level that ensures its long-term viability and, if applied to sharks, the productivity of a species would be an important component of this determination. In addition the Minister must be satisfied that quota owners have taken, and will continue to take, all reasonable steps (including but not limited to, modifying fishing methods, fishing areas, and times of fishing) to minimise take of the stock. Taken together these two provisions would ensure the long-term viability of shark stocks should they be managed under section 14B. MFish also note that these two provisions decrease the likelihood of section 14B management being applied to shark species.*

*The wording in the NPOA relating to section 14B has therefore been retained.*

### *Section 11 measures*

- 20 Several submitters, notably NIWA, WWF and Forest & Bird, consider that the NPOA could be enhanced and strengthened by being more innovative in the use of statutory management tools. In particular NIWA and WWF consider that section 11 sustainability measures have been used infrequently for the management of sharks, and where they have been used, have frequently been applied in an ad hoc and uncoordinated way. Forest & Bird consider that a review of current literature shows that gear restrictions, catch limits and area closures are important tools for the conservation of sharks. It recommends a comprehensive assessment of current gear limits and catch limits and that modification to current management practices is implemented where applicable.
- 21 Specific examples cited in submissions include:

**Amateur bag limits** – WWF, NIWA and Forest & Bird consider these have been applied inconsistently across species and areas and are too high for a number of species. WWF and NIWA also consider them to be untargeted for some species having been implemented as a combined bag across several species. For example

although bronze whaler and hammerhead sharks are northern species they are included in the amateur bag limit in the Southeast, Southland and Sub Antarctic area. These species probably occur very rarely, if at all, in these areas.

**Set net mesh limits** – WWF, NIWA and Forest & Bird note the inconsistency in mesh size across different regions. NIWA and WWF specifically contend that the set net mesh size limit of 125 mm for rig in the Auckland and Kermadec Areas is far too low and should be raised to the 150 mm limit applied elsewhere to reduce the considerable mortality of immature rig in smaller mesh nets. Pierce considers that restrictions on mesh size are an effective technical measure for managing shark fisheries. They have been widely employed in Australian waters to ensure sustainability of catches through preferential selection for juvenile sharks.

- 22 WWF and NIWA also propose additional section 11 measures that could be usefully employed in the management of sharks species. They consider that there is considerable opportunity for improving the conservation status of many neglected shark species through the implementation of these measures:

**Maximum/minimum size limits** - Evidence from overseas shows that protection of large breeding females maintains recruitment levels.

**Area/seasonal closures** - Closed areas could be used to protect breeding females and juveniles on nursery grounds and areas where large females aggregate.

**Gear restrictions** - WWF and NIWA consider that not mentioning gear restrictions is a serious oversight and recommend that the NPOA promotes research into methods for modifying fishing gear in ways which reduce shark bycatch while having minimal impact on the target species catch. They also note that reducing the impact of fishing methods on the seabed could have important benefits for many demersal sharks, both directly for those species that are caught or killed by heavy trawl gear, and indirectly for species that rely on the seabed for food or shelter.

*MFish agrees that section 11 sustainability measures may be appropriate for the management of shark stocks and notes that there are numerous examples (as noted by submitters) of the application of such measures to shark fisheries, or fisheries where incidental capture of shark species occurs. Application of appropriate section 11 measures is a consideration in any sustainability decision relating to a QMS species. The application of additional section 11 measures for the management of shark species, plus remedying the inconsistencies in existing measures noted by submitters, will also be considered in the development of fisheries plans. Specific concerns noted by submitters will be communicated to the relevant MFish fisheries managers.*

*MFish also notes that consideration of section 11 measures is required when the Minister addresses sustainability concerns for non-QMS species. Under section 17B of the Act a sustainability concern for such a species must be addressed through its introduction to the QMS unless a section 11 measure would better meet the purpose of the Act.*

## Schedule 6

- 23 SeaFIC and Te Ohu, believe that there is significant merit in considering Schedule 6 listing of all QMS sharks species to allow individuals to be returned if likely to

survive. This would give fishers discretion to return sharks, particularly live pregnant females, pups or juveniles, for which they have no market. In their opinion current practice reduces utilisation, increases waste and undermines sustainability of shark species. Forest & Bird also supports the listing of species caught alive and are likely to survive on Schedule 6. WWF supports the use of Schedule 6 to allow the release of live porbeagle, blue and mako sharks. It also considers that there may be merit in including rough and smooth skates on Schedule 6 as they are hardy and may be released alive following short trawl tows.

- 24 HIS, NIWA and WWF consider that the release of only sharks that are “likely to survive” under Schedule 6 of the Act is open to interpretation, and requires a significant commitment to enforcement that is not elaborated in the NPOA.
- 25 Submissions relating to the specific Schedule 6 provisions for spiny dogfish are considered under the species specific section later in this paper.

*There is significant divergence of opinion relating to the listing of shark species on Schedule 6 of the Act and in several instances individual submitters have argued both for and against such listings in different parts of their submissions. Most submitters agree that allowing the live release of incidentally caught sharks managed under the QMS has benefit both to the sustainability of shark stocks and to the economic return of fishers. What is contentious, however, is whether allowing the release of sharks ‘likely to survive’ opens the door to the widespread discarding of dead or nearly dead sharks. The difficulty of interpretation of ‘likely to survive’ was noted by submitters along with the significant enforcement commitment required to ensure that dead sharks were not being discarded under this perceived loophole.*

*MFish considers that the situation currently in operation is a pragmatic solution to this issue and that the QMS shark species currently listed on Schedule 6 are appropriate. These include the large pelagic sharks which are typically taken in the surface longline fishery and may therefore survive capture. Contrary to the WWF submission it also includes rough and smooth skate.*

*MFish acknowledges that allowing unwanted live QMS shark species to be released would have a sustainability benefit – particularly in the case of pregnant females. An action to consider wider application of Schedule 6 provisions to shark species has been included in the NPOA.*

*The level of observer coverage clearly has implications for compliance with Schedule 6 requirements. This is addressed elsewhere in this paper. Specific issues relating to spiny dogfish provisions under Schedule 6 are also addressed elsewhere in this paper.*

### **Open access**

- 26 Both NIWA and WWF contend that “open access” is a euphemism for zero management, noting, along with Forest & Bird, that only 11 of the 112 known New Zealand shark species are currently managed under the QMS. None of these submitters support open access as a management option for sharks. NIWA, while not suggesting that the remainder should all be introduced into the QMS (note that this is somewhat contradictory to statements below), believe that they require greater

attention in terms of monitoring, and in many cases active management using non-QMS tools.

27 NIWA and WWF disagree with the statement made in the NPOA that catches of bycatch shark species may be limited by limiting catch of target species. As target species are more abundant and more biologically productive than most sharks, they consider that bycatch shark species are likely to decline regardless of how well the target species is managed. They, along with Forest & Bird, further note that inadequate observer coverage and research trawl survey coverage means that open access shark species could disappear without being noticed. NIWA and WWF recommend that:

- MFish urgently review management of all open access shark species
- Open access shark management be phased out within five years
- The NPOA should devote greater attention to non-target shark catch, and improving efforts to reduce it.

28 Pierce submits that many open access species are highly vulnerable to exploitation and notes that there are reasonably large catches of several open access species.

*MFish disagree that the open access frameworks equates to no management and notes that NIWA advocates the use of monitoring and active management using non-QMS tools. MFish considers that the core concerns of these submitters regarding the open access framework is their perception that there is insufficient monitoring of shark species to inform appropriate application of non-QMS tools. Consequently they consider that these tools are not applied. Specific areas of concern that are discussed elsewhere in this paper include:*

- *Monitoring of non-QMS sharks species (which occurs through the reporting framework and application of the QMS introduction process standard)*
- *Measures included in the NPOA to improve the monitoring of non-QMS sharks species (the identification guide, reduction in the use of generic codes etc.)*
- *The application of non-QMS (i.e. section 11) tools.*

*MFish disagrees that the catch of bycatch shark species is not limited by the catch limit of the target species. Clearly if effort in a target fishery decreases due to a decreased TAC then incidental catch of other species will also decrease. While acknowledging that incidental catch of low productivity shark species may be a concern, whether it is or not depends on how large this incidental catch is in relation to the size of the shark stock in question. Improvements in the monitoring of shark catch will address this issue.*

#### *Schedule 4C – Permit moratorium*

29 Forest & Bird, NIWA and WWF recommend that the NPOA bring all open access shark species into the QMS or list them on Schedule 4C until quantitative research and stock assessments are undertaken.

- 30 Forest & Bird also notes that, although sharpnose sevengill shark is listed on this schedule, catch has increased over the last few years, and recommends a management review of this species. NIWA and WWF support retaining hammerhead and sevengill sharks on Schedule 4C until a better management tool is identified

*Schedule 4C lists a group of stocks and species subject to a moratorium on the issuing of new fishing permits. Effectively this means that fishers may not target these species, although they may be taken as the inevitable consequence of the legal targeting of another species. Schedule 4C was created at the time of the establishment of the QMS as a temporary holding place for a group of species considered to face a sustainability risk if a target fishery developed before appropriate management controls could be put in place. It was never intended as a long term management framework and the QMS introduction process standard sets out a process for the systematic consideration of these species for either QMS introduction or removal from the schedule.*

*MFish does not, therefore, consider that listing additional shark species on Schedule 4C is either desirable or appropriate. All targeted shark species are currently managed under the QMS and, should target fisheries develop for other species in future, introduction to the QMS is likely to be the appropriate management response. Listing of bycatch shark species on Schedule 4C will have no impact on levels of incidental capture.*

*Sharpnose sevengill shark was considered as a candidate for QMS introduction in 2007. At that time MFish decided that, although there was some concern in regard to this species, it would not proceed with any further steps to introduce this species into the QMS. Rather it was considered that better information derived from implementation of the NPOA would indicate more definitively whether these species should be considered for introduction to the QMS in the future.*

*Hammerhead shark was recently considered as a candidate for QMS introduction. Although final decisions have yet to be made following consultation, it is recommended that the permit moratorium remain in place for this species until consideration is given to its possible protection. This essentially concurs with the NIWA and WWF position.*

## **Section B Supporting frameworks**

### ***Reporting and observer coverage***

#### ***Reported catch***

- 31 A number of submitters expressed doubts as to the accuracy of reported shark catches.
- 32 NIWA and WWF note that accurate catch data are available for species that are targeted or highly sought after and the QMS catch tracking system and penalty regime works well for these species. NIWA and WWF contend that unwanted shark bycatch for which fishers have no market and no ACE (particularly spiny dogfish and deepwater sharks and skates), is routinely discarded at sea and, unless an observer is present, much of this discarded catch is never reported by fishers on their fishing returns.

- 33 NIWA and WWF consider that the statement in the NPOA that the 11 species of shark in the QMS make up 84-89% of the reported shark landings is highly misleading and consider that non-QMS species undoubtedly comprise a much higher proportion of the New Zealand shark catch. They recommend that the NPOA identifies and reports the problems inherent in the QMS system in a more accurate and balanced way, and that statistics showing the proportions of shark landings represented by various management measures should be qualified by a statement saying they are biased because of unreported discards.
- 34 SeaFIC advocates the need for a comprehensive review of the wider reporting framework based on an examination of the proper information needs for fisheries management. As an example SeaFIC notes that non-QMS species do not have to be landed and unless they appear in the top five bycatch species there is no record of catch.
- 35 Pierce considers that reporting and monitoring of species that are caught primarily as a bycatch, including recreational catch, is required.

*New Zealand's commercial catch reporting system involves a series of interrelated reporting requirements by both commercial fishers and licensed fish receivers that are reconciled to ensure the accuracy of reported catch. Further checks are made by scientific observers deployed across the fleet. Amongst other tasks, observers monitor the unloading of catch, the transshipment of fish and inspect the hold of vessels for catch.*

*While submitters note that only QMS species need to be landed it is not true that there is no reporting requirements for non-QMS species that do not feature in the top five species caught. This is the situation on the catch effort form where fishers estimate the greenweight catch of the top five species caught in any one fishing event. However, fishers must also complete a landing return where all species caught must be recorded and a destination type code provided. This includes species that are discarded (destination type code of D or A), eaten on board (E), used as bait (U or B) etc. Species listed on Schedule 6 that are released alive are reported against a destination type code of X.<sup>1</sup> Schedule 6 species considered unlikely to survive return to the sea must be retained on board and must be reported against the appropriate destination type code. The only exception is spiny dogfish. This species may be discarded either alive or dead but must be reported against destination type code M.*

*MFish acknowledge that there remain issues with the reporting framework. Of particular concern in relation to shark reporting include the accuracy of reported bycatch landings where a species is typically discarded, the accuracy of landings of Schedule 6 shark species reported against destination type code X, and uncertainties as to whether Schedule 6 sharks that are unlikely to survive are discarded and either reported against destination type code X or not reported at all. The wording in the NPOA has been altered to reflect uncertainties inherent in the current reporting framework but, in the absence of better information, this information is retained as the basis for the analysis of shark catch.*

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<sup>1</sup> Destination code X was introduced to the Fisheries (Reporting) Regulations 2001 on 1 October 2006.

### *Observer coverage*

- 36 NIWA, WWF and Forest & Bird submit that poor or non-existent observer coverage in some major New Zealand fisheries that take large numbers of sharks, notably the domestic tuna longline fishery, inshore trawl, set net and longline fisheries, and (in some seasons and locations) middle depth and deepwater trawl fisheries, is not acknowledged.
- 37 Specifically NIWA and WWF question the veracity of statements made in the NPOA that observer coverage in the tuna longline fishery has approached 100% for several years. They submit that only the Joint Venture component of the tuna longline fishery receives near-100% observer coverage, and these 2–4 vessels have accounted for 20% or less of the fishing effort in this fleet in recent years. Furthermore, they contend that the observer coverage in the domestic fleet peaked at 4.9% in 2004–05 and has rarely exceeded 3%. They also contend that coverage is generally higher in the southern bluefin tuna component of this fishery meaning that coverage in the bigeye tuna longline fishery is lower than these figures.
- 38 NIWA and WWF consider current observer coverage in the tuna fishery to be totally inadequate to monitor bycatch, discards, and whether Schedule 6 releases are limited to live sharks. NZBGFC also note that coverage of the domestic tuna fleet is extremely sparse, and data from the foreign and charter fleets cannot be reliably used with respect to domestic operators. Forest & Bird contends that the low observer coverage in New Zealand tuna longline fisheries is inadequate to assess the effects of fishing on shark stocks, to conduct research on sharks in New Zealand and to assess the efficacy of current fisheries management in meeting the objectives of the NPOA.
- 39 NIWA, WWF and Forest & Bird therefore recommend that:
- The NPOA acknowledge and quantify the large gaps in observer coverage in fisheries where sharks are taken in large numbers.
  - The observer coverage required to achieve the objectives of the NPOA be assessed, and a timeframe for raising coverage to these levels be established, in all fisheries that catch sharks. WWF propose that at least 10% observer coverage is required in all significant shark fisheries within two years.

*MFish acknowledge that the NPOA discussion relating to observer coverage in the tuna fishery was misleading in that it referred to coverage in the foreign charter fleet as if it applied across the entire tuna fleet. The table below details the percentage of observed fishing days by fishery and these figures have been used to correct and update the NPOA.*

*This table also identifies which fisheries are under-observed in terms of shark interactions and, as noted by submitters, the domestic tuna fishery is one of these. However, in terms of the reported greenweight of shark catch that remains unobserved it appears from this simple analysis that this fishery is better served than both trawl fisheries and other longline fisheries.*

*The percentage of observer coverage across fisheries has recently been reviewed – primarily to address issues with seabird and marine mammal interactions. Additional*

*funding has been provided to support a significant increase in observer days. The initial focus of this funding will be on inshore vessels in areas where Hector's and Maui dolphins occur.*

**Table 1. Observer coverage and reported shark catch for the period 1 January 2002 to 31 December 2006.**

Fishery	Total number of days fished	Total number of fishing days observed	Percentage observer coverage	Total reported shark catch (greenweight t)	Total unobserved reported shark catch (greenweight t) **
Inshore trawl	145,851	2,733	1.9 %	37176	36470
Deepwater/middle depth trawl	76,448	7,376	9.6 %	20595	18618
Set net	123,660	148	0.1 %	15026	15011
BLL by vessels 28m or over	4,680	1,098	23.5 %	4800	3672
Bottom longline by vessels less than 28m	57,181	534	0.9 %	3113	3085
Domestic tuna surface longline	23,495	393	1.7 %	753	740
Danish Seine	7,219	0	0.0 %	250	250
Potting (excl Eels)	160,618	0	0.0 %	26	26
Domestic tuna troll*	33,022	10	0.0 %	4	4
Purse seine	3,605	107	3.0 %	1	1
Foreign chartered tuna surface longline	1,439	1,548	100 %	75	0

\* Observer coverage only started in this fishery in the 2006/07 fishing year

\*\* Assuming reported shark catch evenly distributed across days fished

### *Reported shark catch by landed state*

- 40 NIWA and WWF expressed concern over the accuracy of reported shark catch generally and raise specific concerns over the veracity of data included in Appendix 5 of the NPOA. They recommend that these data be carefully investigated and corrections made where required.

*MFish have updated the information in Appendix 5 (now Appendices 4-10) to address submitters concerns and to include the most up to date information.*

## **Section D Other policy frameworks**

### ***Standards***

#### *Prohibited utilisation standard.*

- 41 Forest & Bird, NIWA and WWF strongly support development of the prohibited utilisation standard and its application to shark species; and recommend that these actions be given high priority. WWF recommends that the NPOA specify a timeframe for implementation of the prohibited utilisation standard.
- 42 In contrast SeaFIC and Te Ohu consider that the utilisation purpose of the Fisheries Act does not sit easily with the prohibition of utilisation of a fishstock. SeaFIC believes that shark species which require protection (i.e. as a consequence of

international agreements; which naturally have particularly low productivity, small populations, a small distribution range; or a distribution within regions of high anthropogenic impact for which non biological removals would place the long term viability of the species at risk) should be protected via listing on Schedule 7A of the Wildlife Act 1953. SeaFIC considers that such species would not include those with an identified sustainability risk where management under the Fisheries Act would allow restoration of the species for future use. These latter species should be subject to management controls based on whether or not the species should be subject to the quota management system under section 17B of the Fisheries Act.

- 43 SeaFIC therefore proposes that MFish should engage with the Department of Conservation, SeaFIC and other interested parties to develop a process and criteria (based on IPOA guidelines) for identifying those species which should be candidates for protection under the Wildlife Act.
- 44 Te Ohu is very cautious about supporting the development of a prohibited utilisation standard that is intended to permanently prevent utilisation of fisheries resources such as sharks. It contends that Government should carry out a process to both identify species such as basking shark at particular risk and to gain agreement to the modes of management that can provide that special protection. This process must include Iwi/Maori input and participation and may ultimately result in such species being managed under another more appropriate statute.

*MFish considers that the proposed prohibited utilisation process standard is a close fit to the process envisaged by both SeaFIC and Te Ohu. The standard will essentially provide a robust and consistent framework to ensure that appropriate decisions are made and that stakeholders are provided with an opportunity to engage in the process.*

*Development of the standard will be led by MFish in consultation with DOC. While details are yet to be determined it is envisaged that this standard will operate in much the same way as the QMS introduction process standard. A range of criteria will be established to identify stocks that may be threatened, endangered or otherwise unsuitable for any significant utilisation in the future. Once this list is established stakeholders, including Maori, recreational fishers, industry and environmental NGOs, will have an opportunity to review and recommend changes to the list and the supporting information.*

*Subsequent to this process species considered unsuitable for utilisation will be formally considered for protection using the most appropriate tools available under the Wildlife Act and/or the Fisheries Act. Stakeholders will be given the opportunity to comment on the appropriateness or otherwise of proposed protection measures. The latter part of this process was used to absolutely protect the great white shark using provisions under both statutes.*

#### *QMS introduction standard*

- 45 SeaFIC are frustrated that the NPOA presents the QMS introduction process standard as final, referring to the concerns made in its submission on the draft standard.

*The basis of SeaFIC's concerns relate to the interpretation of section 17B of the Act. As noted in the final advice on the QMS introduction standard, the debate with SeaFIC over this interpretation is not new and was first covered in some detail in the Final Advice Paper (FAP) on species proposed for QMS introduction dated 10 December 2004. The basis of the MFish position has not changed and this position has been clearly articulated to SeaFIC on a number of occasions.*

*The NPOA was released for consultation following completion of consultation on the draft QMS introduction standard. You approved the standard for the identification of candidate stocks for QMS introduction (previously referred to as the QMS Introduction Process Standard) in May 2008.*

## **Environmental policies**

### **MPAs**

- 46 Several submitters consider that MPAs are a valuable tool to protect habitat and species and wish to see critical habitats to sharks identified and protected from anthropogenic impacts (FPS, Pierce, Forest & Bird, NIWA and WWF). WWF and NIWA note the value of marine protection depends on the size, location and design of MPAs and MPA networks. Forest & Bird, NIWA and WWF recommend that the NPOA gives greater recognition to the positive role that marine protection can play in shark conservation and note that MPAs also have potential to provide protection to many other sharks, especially if they are part of an integrated network, or used in conjunction with additional time-area closures.
- 47 Forest & Bird notes that existing closed areas that overlap with shark distribution, such as fisheries closed areas and marine reserves are given very little mention in the NPOA and have not been assessed in relation to the value they provide to different shark species.
- 48 NIWA, WWF and Forest & Bird note that protected areas would particularly benefit shark species that, at one or more stages of their life cycle exhibit limited spatial range, limited mobility, or restricted habitat requirements. Species that these submitters note would clearly benefit from such protection include inshore sharks that live part or all of their lives in estuaries, harbours and shallow coastal waters; species which enter such habitats during pupping; species that aggregate in certain areas to breed; and for some of the deepwater species taken in southern and central New Zealand.

### **BPAs**

- 49 NIWA, WWF and Forest & Bird question the benefits of the existing BPAs for protecting shark habitat. Forest & Bird consider them to be far offshore, difficult to reach and mostly unfished and will therefore have very little impact on avoiding, remedying or mitigating the current effects of fishing on shark species. NIWA and WWF contend that the BPAs are unrepresentative of the EEZ as they are biased towards areas that are too deep or rocky for trawling, and areas that have low productivity and support few fish. As a consequence they consider that the current BPAs are inadequate for protecting a representative sample of shark habitat.

- 50 Forest & Bird contends that the statement that ‘*habitats of particular importance to sharks will be incorporated in the BPAs*’ is totally unfounded and must be justified by a robust analysis of shark species assemblage. It contends that such a review would be easy to do using numerical models of occurrence and abundance of demersal fishes developed by Leathwick *et al* (2006). Both NIWA and WWF cite research (Leathwick *et al* in review) that demonstrates that alternative spatial distribution of the BPAs could increase their conservation benefit by 2–3 times while reducing the cost in lost fishing opportunities. All three submitters agree that the NPOA should include an objective of expanding and improving the existing BPAs to improve conservation of sharks.

*The NPOA, in line with the IPOA, has a clear focus on the effects of fishing on shark species. Broader concerns related to anthropogenic effects will be considered in later versions of the plan and may consider measures to protect critical habitats for sharks, such as estuaries, harbours and shallow coastal waters. MFish acknowledge that MPAs will likely benefit sharks as they are to cover representatives of each habitat type.*

*Given that the BPAs cover 30% of the EEZ and incorporates areas from a range of broad habitat types MFish considers the statement in the NPOA that, although not a specific driver for deriving the closed areas, habitats of particular importance for sharks will be incorporated in the BPAs to be appropriate.*

#### *Other policy initiatives*

- 51 Forest & Bird consider that a number of policy initiatives not discussed in the NPOA, such as the seabird and benthic protection standards and the Hector’s dolphin Threat Management Plan, will have effects on some shark species. It recommends that MFish undertake a review of existing and pending policies and incorporate them into the NPOA as tools that will have effects on the conservation and management of some shark species and populations.

*MFish considers that the policy initiatives discussed in the NPOA are appropriate. While there are a number of additional policy initiatives under development their final form and operational detail remains unclear. It is too early to determine how many of these initiatives may impact on the conservation and management of shark stocks and MFish considers it inappropriate to reference them in the NPOA at this time.*

*Subsequent to consultation on the NPOA, however, you have agreed to the implementation of set net bans in a number of inshore areas to protect the endangered Hector’s and Maui dolphins. This initiative has been included in the final NPOA.*

### **PART 3 FINNING**

- 52 The issue of shark finning generated considerable attention in submissions. Of the 27 submissions received 11 related solely to shark finning (McGlone, Lowe, Napier, Chris & Carolyn, Cameron, Aitken, Tredgett, Friedlander, Vink, Pollock and Read) and only two (Bennet and Pierce) did not comment directly on this issue. All eight of the additional correspondence received related to the shark finning issue. General

comments relating to finning included that it is a disgrace that we condone such practice (FPS), that the NPOA appears to condone current finning practices (Lowe) and that MFish should work with stakeholders towards an orderly phasing in of a total ban on shark finning (Lowe).

### *Definition of finning*

- 53 Forest & Bird, NIWA and WWF submit that the NPOA should better define what constitutes shark finning. They recommend that the NPOA use the term finning to mean the removal of fins from a shark and the discarding of the remainder of the carcass.

*MFish agree that this is the universally accepted definition of finning and have amended the NPOA to incorporate this definition.*

### *Waste*

- 54 The wastage aspect of shark finning whereby the fin is retained and the trunk of the shark is discarded was addressed by 15 submitters (FPS, Lowe, Napier, Cameron, Chris & Carolyn, Aitken, Tredgett, Friedlander, NZBGFC, NIWA, Brierley, Keeley, WWF, Forest & Bird, Pollock and HIS). Seven of the additional corresponders also addressed waste (Baker, Fowlerm Hawes, Enderby, Hope, Tavita and Joyce). Typical comments included that finning is wasteful (FPS), grotesquely wasteful (Tredgett), incredibly wasteful (Pollock) and that the waste is unacceptable (NZBGFC).
- 55 Forest & Bird quote figures from the NPOA that it considers shows finning to be the predominant practice for carpet sharks, basking sharks, blue sharks and porbeagle sharks, where percentage of total catch reported as finned (with the rest of the shark discarded) is 94%, 92%, 90% and 84% respectively.
- 56 Eleven submitters (Lowe, Napier, Cameron, Chris & Carolyn, Aitken, NZBGFC, NIWA, Brierley, WWF, Forest & Bird and HIS) support, or strongly support, requiring the fins to be attached to the trunk at the time of landing. Forest & Bird also recommend that New Zealand encourage other states to adopt this position. NIWA and WWF recommend a complete ban on finning of non-QMS species, coupled with a requirement to land fins and carcasses of QMS species together at the first point of sale.
- 57 Eight submitters (Lowe, FPS, Friedlander, NZBGFC, NIWA, WWF, Forest & Bird and Pollock) noted that other countries<sup>2</sup> and a number of RFMOs<sup>3</sup> have introduced similar measures. Many of these submitters express the sentiment that New Zealand was lagging behind other jurisdictions in this regard and NIWA considers that the position taken in the NPOA in relation to finning may not adequately reflect changing attitudes. NIWA and WWF contend that requiring fishers to land fins and carcasses would have two possible consequences:

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<sup>2</sup> including Brazil, Canada, the eastern Australian States, European Union, Italy, USA and South Africa

<sup>3</sup> including International Commission for the Conservation of Atlantic Tuna, Inter-American Tropical Tuna Commission, Indian Ocean Tuna Commission, Northwest Atlantic Fisheries Organisation, Southeast Atlantic Fisheries Organisation and North East Atlantic Fisheries Commission

- Fishers would discard whole fish at sea and land neither the fins nor carcasses; this would result in a higher proportion of sharks being released alive and therefore benefit the shark populations;
  - The fishing industry would work harder at finding markets for previously unsaleable carcasses to maximise their financial return.
- 58 Solander however note that though the EU banned shark finning in 2003, fin sales into Hong Kong from the EU totalled 600 tonnes and represented approximately 10% of the total fin sales into Hong Kong in that year.
- 59 Several submitters contend that landing sharks whole and unprocessed would support other issues raised in the NPOA. Specifically it would avoid the use of conversion factors thereby ensuring accurate reporting further satisfying objectives 8 and 9 (Forest & Bird); would enhance reporting accuracy, data acquisition and species identification (HIS); would immediately remove the subjective interpretation of whether live finning can be considered ‘wilful ill treatment’ of an animal (HIS); and may result in the use of livers, fins and flesh (SeaDragon).
- 60 Several submitters commented on the contention in the NPOA that “there is a risk in regulating to avoid waste in that such regulations may merely transfer the disposal site from the sea to the land”. Forest & Bird consider this to be an unrealistic and invalid argument as data in the NPOA demonstrates that there are multiple uses for sharks and that there is value in using the whole carcass. NIWA and WWF believe that the potential for land-based dumping of carcasses is grossly over-stated, and is not a valid argument against a finning ban. They, along with HIS, consider that the space and refrigeration required on fishing vessels to transport whole sharks to port means that it is unlikely these resources would be wasted and the carcasses dumped on land.
- 61 Lowe contends that requiring the fins to be attached to the trunk at the time of landing could be combined with measures requiring appropriate disposal of unwanted trunks, with penalties for dumping.
- 62 HIS question the ability of the QMS to create an incentive for fishers to utilise the whole shark to get maximum return on their investment in quota noting that many shark fisheries around the world are managed under a quota system and this has had virtually no influence on the shark finning practices in target and bycatch fisheries. Pollock also questions this noting the high discard rates of pelagic sharks reported in the NPOA. HIS contends that maximum economic return would be guaranteed under a fins-attached policy.
- 63 Solander submits that New Zealand’s targeted commercial shark fishery is limited to the rig and school shark fisheries and that this makes the situation in New Zealand different to those countries where pelagic shark species are targeted as a food source and landed fresh. Solander considers that, apart from school shark, rig and elephant fish, there is limited or no commercial value in shark catch, partly due to practical considerations that limit the full market utilisation of oceanic shark meat. These include:
- High levels of methyl mercury in the larger oceanic sharks

- High urea and trimethylamine in blue sharks which confers a strong taste of ammonia, particularly when frozen
  - Spoilage caused to other products on board
  - Distance to international markets
  - High transportation costs in conjunction with low market returns
  - Lack of a national or international market for shark products
- 64 Given these constraints, Solander considers that the NPOA complies in principle, and as far as is possible, with the IPOA, and that given problems associated with using shark flesh, finning of sharks taken as bycatch is not necessarily wasteful. For oceanic shark species New Zealand's option of releasing live under Schedule 6 or permitting shark finning provides an effective and responsible alternative. Solander notes that it is in the commercial interest of tuna fishers to make all possible effort to avoid interaction with sharks. It notes that New Zealand surface line fishers do not use wire traces which are necessary if targeting sharks.
- 65 Solander makes special note of the poor utilisation potential of blue shark which it states is the principal shark bycatch species in the pelagic longline fishery. It contends that fisheries operating in areas with a high proportion of blue shark may thus be expected to have a lower shark utilisation rate.
- 66 Solander also notes a double standard whereby those in the Western world oppose shark finning (for soup) but accept the landing of "wings" from skate which is a traditional and popular dish in Europe. It contends that the percentage recovery from greenweight of skate wings is similar to that of a shark fin.
- 67 SeaFIC notes that the NPOA states that the focus of the New Zealand fisheries management regime is to ensure that catch is constrained within sustainable catch limits. It submits that how quota owners choose to maximize the value of quota through minimizing wastage should be at their discretion.
- 68 WWF and NIWA consider that finning of QMS shark species does not represent a sustainability issue, provided quotas are set at the right level, dead discards are reported and verified, and population abundance and status are routinely monitored. However, they contend that species outside the QMS are at risk of overfishing because of the almost complete lack of controls, and the high economic incentives to continue catching them for their fins. WWF also note that because of the high value of their fins, many shark populations around the world are being decimated by fleets that continue catching sharks, even when they are at very low abundance. HIS considers that shark fisheries are growing internationally in direct response to growth in the lucrative shark fin trade, and that the economic value is over-riding precautionary management initiatives to ensure the long term sustainability of their populations.
- 69 NIWA recommends that the landing and sale of shark fins be restricted to species that are managed under the QMS. It also recommends the same restriction for liver

fisheries, which it considers are analogous to finning in that most of the animal is discarded.

*MFish agrees that situations where fins are the sole products retained from a captured shark are legal but wasteful. However, MFish has no information to suggest that targeted shark fin fisheries occur in New Zealand. While shark fins are valuable on a per kilogram basis, their weight is small. Consequently the value derived per animal where the fins are the sole product retained is typically small in comparison to that derived from the target species, particularly when the cost in terms of the time and care required to process these species is taken into account. MFish therefore considers that the sharks that are finned in New Zealand are predominantly the incidental catch of more valuable target fisheries and reported catch data supports this position. MFish notes that the UNGA resolution relates in particular to fisheries conducted solely for the purpose of harvesting shark fins and this aspect is not relevant to the New Zealand situation.*

*The figures quoted from the NPOA by Forest & Bird on the percentage of the reported catch of carpet sharks, basking sharks, blue sharks and porbeagle sharks that are finned have been corrected and updated in the final NPOA (Appendix 8). Latest figures show that 25% of carpet sharks, 29% of basking sharks, 82% of blue sharks and 69% of porbeagle sharks that are reported caught are finned.*

*The majority of shark species where the primary processed state is reported as fin are pelagic species taken as bycatch in the tuna longline fishery. Successful targeting of pelagic sharks requires the use of wire traces. As noted by Solander, and supported by scientific observers, tuna fishers use nylon traces. One driver for the use of this gear is to minimise gear and gear set-up costs. However, reducing shark bycatch is an additional consideration as such species are difficult, dangerous and time consuming to process. Research based on observer data confirms that sharks that are alive are typically released alive if possible.<sup>4</sup>*

*Sharks taken as bycatch in the deepwater and middle depth trawl fisheries are also finned. Sharks trawled from these depths are likely to be dead once landed on the vessel. While MFish considers that the utilisation of dead bycatch is to be encouraged, how these sharks are processed or disposed of is not ultimately a sustainability issue.*

*MFish reiterates its position that the sustainability of shark stocks is of primary concern and that accurate reporting of shark bycatch is a key component of monitoring shark stocks. How much of an individual fish is retained is a secondary consideration and does not relate to sustainability of shark stocks.*

*Monitoring shark catch to ensure sustainability applies both to QMS and non-QMS shark stocks with catch of the latter monitored under the application of the QMS introduction standard. While MFish acknowledges that there are some issues with the existing reporting regime, considerable effort is being put into ensuring that this regime provides accurate information to enable appropriate management action.*

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<sup>4</sup> Ministry of Fisheries report to CCSBT ref CCSBT-ERS/0602/06 - Fish bycatch in New Zealand's Southern Bluefin Tuna Longline fisheries, 2002-03 to 2003-04.

*MFish considers that requiring fishers to land trunks with fins attached is a blunt instrument to reduce shark finning. While this management action has its place internationally, particularly in regard to targeted shark fin fisheries, it is unlikely to have a sustainability benefit for shark species in the New Zealand context. There is a cost involved in terms of processing time for unwanted shark captures and MFish agrees with Solander that fishers seek to avoid such captures where possible as evidenced by the predominance of nylon traces in the surface longline fisheries. MFish considers that the fact that fishers do not choose to land trunks reflects the true economic considerations that they face and disagree with submitters that imply that fishers are forgoing an economic benefit by not landing trunks. Forcing fishers to land trunks will simply impose an additional cost on fishers (regardless of whether they dump the carcass on land or partially offset costs by marketing the trunks) for no sustainability benefit. Further, MFish considers that measures such as those requiring fishers to land whole sharks have the potential to result in increased misreporting and consequently to undermine the reporting framework to the detriment of the sustainability of these species.*

*As noted elsewhere MFish is committed to continued monitoring of shark catch and to strengthen the reporting regime to better inform management decisions for both QMS and non-QMS shark species.*

### ***International considerations***

70 HIS note the UNGA resolution adopted in 2007 which calls upon “States to take immediate and concerted action to improve the implementation of and compliance with existing regional fisheries management organisations or arrangement and national measures that regulate shark fisheries, in particular those measures which prohibit or restrict fisheries conducted solely for the purpose of harvesting shark fins, and, where necessary, to consider taking other measures, as appropriate, **such as requiring that all sharks be landed with each fin naturally attached.**” (emphasis added). HIS consider the fact that this Resolution passed without a vote is indicative of the urgency being felt on a global scale to curb growing shark fisheries, and urge MFish to consider strengthening the policy on shark finning and consider a fins-attached policy in line with this resolution.

71 Forest & Bird notes a lack of consistency between domestic and international positions in relation to shark finning. It contends that MFish will shortly be consulting on proposals to require the retention of whole shark carcasses in fisheries outside the New Zealand EEZ although this is not referred to in the NPOA.

*New Zealand has applied a fins attached policy to its vessels greater than 24 metres in length which fish on the high seas in accordance with the resolution of the Western and Central Pacific Fisheries Commission conservation measure. Within New Zealand fisheries waters sustainable management of shark populations is achieved through the QMS and by monitoring the reported catch of non-QMS species.*

*The New Zealand position is entirely consistent with international requirements. The shark conservation measure adopted by the Western and Central Pacific Fisheries Commission requires states to adopt a “finning measure” unless other measures are in place to ensure the sustainable management of highly migratory shark species. Within New Zealand fisheries waters HMS sharks are managed within the QMS. No*

*catch limits apply to New Zealand vessels fishing on the high seas and it is for this reason that a high seas permit condition implementing the resolution for high seas fishing has been applied.*

### **Animal welfare**

- 72 Of the 25 submissions that commented on finning only three did not address the animal cruelty aspect (Cameron, Aitken and Keeley). Only one of the eight additional correspondents did not comment on animal cruelty (Baker). All but one of the submissions and correspondence commenting on live finning considered that it should cease. The sole submission not opposed to live shark finning (McGlone) questioned the difference in terms of animal cruelty between live finning and other typical fishing practices such as the bleeding of sharks by cutting off their tails (necessary to preserve the quality of shark meat product) and heading and gutting of fish species. His primary concern was that making finning illegal has occurred without consultation with fishers and considers that such measures introduce unnecessary operational constraints on fishers. This supports Pollocks contention that fishers will recognise the double standard in that most methods of fishing are inherently cruel in that they cause pain and distress to the fish in a way that would be considered an offence under the Animal Welfare Act 1999 if performed in the same way on a land animal.
- 73 Typical sentiments expressed by submitters opposed to live shark finning include it is appalling (FPS, Read), abhorrent (Lowe, SeaFIC, Solander), inhumane (Napier, Chris & Carolyn, Cameron, Aitken, NIWA and WWF), unacceptable (Tredgett), barbaric (Tredgett), and cruel (Pollock). Others supported humane treatment of sharks when finned (Read, Te Ohu, Solander).
- 74 Solander does not believe that live finning takes place by commercial fishers in New Zealand, noting that live finning provides an obvious risk to crew. Solander does, however, acknowledge that isolated instances may have been reported in the past. NZBGFC notes that observer data indicate that most sharks are killed or mortally injured before they are discarded. It contends that too much emphasis is placed on live finning which diverts attention from the fact that the vast majority of the shark bycatch in the tuna longline fishery is simply killed then discarded.
- 75 Lowe considers that live finning should be made an offence under fisheries legislation as this would make the law transparent for users, avoid legal complications and leave the responsibility for investigation and prosecution of offences with officers of the Ministry of Fisheries, where it logically belongs. Others (Penniket and Read) consider that stronger legislation of some unspecified form may be required. HIS considers it wholly unsatisfactory that the practice of live shark finning is only considered a breach of the Animal Welfare Act if the fisher is aware that the practice constitutes ill-treatment of the shark. Although it does not consider it necessary, Solander would support any regulation that mandates the humane treatment of sharks and prevention of live finning. Te Ohu specifically noted opposition to the use of domestic fisheries legislation to address this issue, and also does not support observers reporting offences under the Animal Welfare Act as it considers this opens the door for observers to become compliance officers under any number of statutes. SeaFIC on the other hand requests that MFish clarify the legislative framework to enable observers to report non-compliance with wider legislation to other government agencies.

76 Several submitters directly supported an education and awareness campaign (Penniket and SeaFIC) while others expressed support for industry derived best practice measures (SeaFIC, Te Ohu and Solander). Others thought that the proposed education and awareness campaign would be ineffectual (NZBGFC, Pollock, Forest & Bird, NIWA and WWF) with NIWA and WWF arguing that poor observer coverage means that observers will be unable to monitor fisher behaviour adequately, and that changes to current finning practice are unlikely. Fink expresses concern that lack of resources may not enable the enforcement of the legislation in regard to live shark finning. Pollock, NIWA and WWF consider that our ability to eliminate live shark finning is overstated in the NPOA and the only viable vehicle for its elimination is a ban on all finning. WWF do concede however that education of fishers that live finning is an offence, and reporting of observed instances, are desirable.

77 Although the NZBGFC doubted whether current provisions under the Animal Welfare Act were enforceable they suggested the inclusion of a standard for how sharks could be euthanized prior to finning. Solander provided MFish with a copy of a Code of Practice promulgated by Tuna NZ Inc. in July 2001 which states that sharks should be killed humanely before processing and describes how this should be done. SeaFIC submit that live shark finning is not supported in New Zealand as industry best practice. Based on personal observations FPS notes that it appears that fishers attempt to kill carpet sharks by slicing the neck. It states that this does not always kill the shark as sharks have been recovered that are still bleeding and moving sometime after the "kill". Pollock also questions who is to say a shark is dead or merely stunned when it is definned and tossed over the side.

*The cruelty issue relating to finning is not just that the fins are removed from a live animal but that this process is not by itself fatal. If a shark from which the fins have been removed is returned alive to the sea it may survive for sometime, and is ultimately likely to die from predation against which it is unable to defend itself. MFish considers that there is little basis for debating the cruelty of such action.*

*MFish is not aware of evidence to suggest that live finning of sharks occurs in New Zealand. A recent well publicised episode where finned carpet sharks were allegedly observed alive in the water was investigated by MAF officials but no wrong doing was determined. MFish welcomes the strong position taken by industry in submissions against the practice of live finning.*

*Nonetheless, MFish supports measures to ensure that fishers do not fin sharks alive, including that an appropriate compliance monitoring and penalty regime is in place. MFish note an almost universal support by submitters for such a regime but some debate over the appropriate mechanism. MFish has considered these submissions but does not consider that there is need for additional legislation as the live finning of sharks is already an offence under the Animal Welfare Act.*

*MFish will work with MAF to ensure information channels are established between MFish observers and MAF compliance personnel. The proposed education and awareness campaign will be undertaken, building on the code of practice that is already in place for the tuna fishery. Concerns over low observer coverage raised by a number of submitters are common to a number of issues within the NPOA. Actions to improve observer coverage are discussed elsewhere.*

### *IPOA objectives not already addressed*

- 78 Forest & Bird note that the NPOA omits to include the text in brackets for objective 7 in the IPOA-Sharks – ‘for example, requiring the retention of sharks from which fins are removed’. Forest & Bird does not support the rewording of IPOA objective 8 and consider that it should be adopted in full.

*MFish acknowledge the omission and have amended the NPOA to reflect the exact wording of the IPOA. MFish notes, however, that the omitted wording is an example of a measure that could be introduced rather than a requirement under the IPOA.*

### *Conversion factors*

- 79 Forest & Bird considers that there are gross inaccuracies and uncertainties surrounding the use of conversion factors. It notes, however, that debate around this issue is irrelevant if retention of whole carcasses is made mandatory.
- 80 NIWA and WWF have concerns over both generic and species specific fin conversion factors. They consider that the generic conversion factor of 30 used for most shark species is probably biased low for many species, and that those for the pelagic sharks are poor as they are based on very sparse data, much of it from overseas. They recommend that MFish conduct an urgent investigation into shark fin conversion factors with an aim of generating accurate, species-specific conversion factors.
- 81 Both NIWA and WWF also note that the use of a wet fin conversion factor on fins that have partially or fully dried will result in serious underestimation of the landed green weight as shark fins begin drying as soon as they are removed from the shark, and continue desiccating while in the freezer. They contend that the number of fishers and processors currently using dry fin conversion factors is negligible: wet fin conversion factors are used almost exclusively. NIWA and WWF recommend that MFish urgently investigate the landed state of fins across a wide range of species and fisheries, with a view to withdrawing wet fin conversion factors and requiring fishers to use dry fin conversion factors.
- 82 Solander notes that whilst most of the world accepts a 5% (i.e. 1/20) greenweight ratio New Zealand has created its own individual greenweight conversion factors for pelagic sharks (Porbeagle 1/45, Blue 1/48 and Mako 1/59). Solander considers that this distorts figures on landings of these sharks showing New Zealand’s landings some 2.5 or 3 times higher than would be reported elsewhere. Solander questions whether as a signatory to the WCPFC, New Zealand will adopt “the Conservation and Management Measure 2006-5” of that RFMO thus accepting a 5% conversion factor for New Zealand.

*The conservation measure of the Western and Central Pacific Fisheries Commission requires states to adopt a finning measure unless other mechanisms are used to achieve sustainable management of shark populations. The measure provides the option of requiring sharks to be landed with fins attached or alternatively the weight of fins is to represent no more than 5% of the weight of sharks on board. In this case the weight of sharks refers to trunked weight so this ratio is not directly comparable to the species specific conversion factors used in New Zealand which apply to greenweight.*

*Requiring the weight of fins to represent no more than 5% of the weight of trunked sharks is a coarse and ineffective management measure making no distinction between the species of shark and/or the state of dryness of the fins. New Zealand has therefore applied the option of requiring fins to be attached to sharks taken on the high seas by vessels greater than 24 metre in length.*

*In New Zealand fisheries waters catch limits under the QMS ensure sustainable management. Where only the fins of sharks are landed, species specific conversion factors apply to HMS sharks. These have been based on best available information gathered internationally and domestically and different conversion factors apply to “wet” and to “dry” fins.*

*MFish acknowledges concerns over the accuracy of conversion factors and how they are applied, and the importance of accurate greenweight reporting for ensuring the sustainability of shark stocks. For this reason a review of conversion factors is included in the NPOA sharks.*

## **PART 4 ALIGNMENT WITH IPOA SHARKS**

83 A number of submitters considered that the NPOA was not fully aligned with recommendations for NPOAs set out in the IPOA-sharks. NZBGFC, Chris & Carolyn, Cameron, Aitken, Pollock, Lowe and Forest & Bird consider that the NPOA is contrary to two of the specific objectives of the IPOA, namely:

- *Minimise waste and discards from shark catches in accordance with article 7.2.2.(g) of the Code of Conduct for Responsible Fisheries; and*
- *Encourage full use of dead sharks*

84 Forest & Bird note the percentage of catch discarded for spiny dogfish (55%), carpet shark (63%) and sharks classified as ‘other sharks and dogfish’ (64%) which it considers exemplifies unacceptable waste of sharks in New Zealand.

*Issues relating to wastage generally are addressed under the finning section of this paper.*

## **PART 5 PROPOSED NEW ACTIONS**

85 Most submitters supported the proposed new actions and a number of additional actions where proposed.

### ***Production of a field identification guide***

86 SeaFIC, NIWA, WWF, Forest & Bird, Te Ohu, NFMSC and Penniket all support development of the proposed identification guide to improve the identification of shark species. NIWA and WWF consider the proposed field identification guide, in conjunction with a reduction in the use of generic reporting codes, is absolutely essential to the collection of fishing mortality data, and monitoring of fishery practices and fish stocks.

- 87 Forest & Bird consider that some shark species, particularly deepwater sharks, require specialist taxonomic identification and genetic analysis. It recommends the proposed research planning program incorporate genetic identification of sharks and taxonomic research. NIWA and WWF note that no mention is made of how or to whom the proposed identification guide will be distributed and contend that MFish should ensure it is made available to all registered fishers, ACE holders, and Licensed Fish Receivers. Te Ohu requests copies of the identification guide so that it can be brought to the attention of Mandated Industry Organisations and ACE Holding Companies.
- 88 SeaFIC consider that there is probably further potential to be gained in engagement with industry and other stakeholders to promote education and awareness on all aspects of shark fisheries.

*MFish welcomes support for the field identification guide and will ensure that the utility of the guide is maximised through its widespread distribution.*

*The genetic analysis and taxonomic identification work recommended by Forest & Bird is already being undertaken by NIWA. DNA barcoding has been completed for approximately 50 New Zealand shark species and is ongoing. This work will contribute to an international initiative<sup>5</sup> which aims to complete barcoding of 90% of the world's shark species over the next 2-3 years.*

*MFish agrees with SeaFIC that ongoing engagement with stakeholders is important to promote education and awareness on all aspects of shark fisheries. Future reviews of the NPOA, and the ongoing implementation of proposed actions through the research planning process, various working groups, fisheries plans and standards development, sustainability rounds etc. will ensure that engagement continues.*

### ***Reduce the use of generic reporting codes***

- 89 NIWA and WWF consider that the NPOA should outline how the reduction in generic code use will be achieved. Motupipi specifically note that OSD comprise a very large and diverse number of species, some of which are extremely rare and some very valuable. It implies that species specific information should be collected to enable some form of management to be introduced before these species are at risk. SeaFIC recognises that the identification guide should assist in the reduction of the amount of catch that has been reported against generic codes. It supports the retention of the generic codes.

*The key action to reduce the use of generic codes is development of the identification guide. The guide will enable fishers to better differentiate individual shark species reducing the need for the generic codes. The success of the guide in reducing the use of generic codes will be monitored annually to ensure that progress towards the 1% target figure is occurring and that this target is achievable by 2010. Additional actions to educate fishers on the use of the guide may be required if appropriate progress is not made within this timeframe.*

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<sup>5</sup> The Shark Barcode of Life (Shark-BOL) is a global effort to coordinate an assembly of a standardised genetic reference library for all shark species. It will ultimately provide a publicly available resource in the form of an electronic database containing DNA barcodes, images and geospatial coordinates of examined species.

*As noted in the NPOA the ability of fishers to accurately identify all rare shark species is unrealistic and the generic codes will be retained to accommodate these species. Identification of such rare species will by necessity rely on scientific observers and fisheries research surveys.*

### ***Initiate a research and monitoring program***

- 90 NIWA and WWF consider that the proposed research and monitoring programme is critical, and should be implemented urgently. They, along with Forest & Bird, note that no timeline is given for implementing the research and monitoring programme and recommend the inclusion of a timeframe and list of major milestones.
- 91 SeaFIC however contends that the initiation of a separate body of research for shark species seems to be entirely at odds with current Fisheries Assessment Working Groups (particularly the aquatic environment working group), identification of research and monitoring services under fisheries plans and the conservation services working group processes for protected species administered by the Department of Conservation. SeaFIC considers that it may be more helpful to explain how shark research is going to be coordinated across all these forums. It notes that much shark research is already part of standard research planning processes.
- 92 The NZBGFC welcomes the prospect of research into the stock status and sustainable yields of exploited shark stocks, if such research includes the large pelagic species mako, blue and porbeagle sharks. It considers that the present TACC limits for blue shark, mako shark and porbeagle shark are too high and should be reviewed downwards for sustainability reasons. NIWA, WWF and Forest & Bird recommend that the current management regimes for all shark species be reviewed as part of the research and monitoring programme.
- 93 Both SeaFIC and Solander commented on who should bear the cost of the research and monitoring programme. SeaFIC submit that the resourcing of research to meet the goals of international agreements must be through Crown funding. Solander consider that given the lack of commercial value in the oceanic shark species and limited targeting of coastal species there should be no major increases in costs levied in creating an NPOA.

*The research and monitoring programme will be implemented over the next four years. Initial proposals will be considered in the 2008 research planning round with successful projects implemented in 2009. New information derived from the research and monitoring programme will first become available in 2010. Information derived from the programme will inform management actions as they become available and will be a key component of the full review of the NPOA in 2012.*

*Stock and species specific research proposals are considered each year as part of the research planning round with shark stocks typically reviewed on a 2-3 year cycle subject to availability of resources. CPUE analyses were completed in 2008 for SCH 1 and 2 and SPO 1 and 8. Current research projects that will commence on 1 October 2008 includes a project to look at national stock relationships for both rig and school shark (INS2008/03) and one to investigate the relative abundance and distribution of inshore finfish stocks including ELE 3 using a hybrid survey (INS2008/01). Specific objectives of the former project include:*

1. *To assess movement of rig (Mustelus lenticulatus) and school shark (Galeorhinus galeus) between FMA's throughout New Zealand and adjacent waters.*
2. *To assess life-history and fishery characteristics of rig and school shark through out New Zealand.*
3. *To determine the implications of the current QMAs for stock assessment and management of these two species.*

*In addition to these projects, shark stocks currently managed under the AMP framework<sup>6</sup> are reviewed every 2-3 years until such time as these stocks are incorporated into fisheries plans.*

*Prior to the 2010 research planning round the research and monitoring programme of the NPOA will be evaluated to identify aspects of the programme that remain to be actioned. A project will be incorporated into that planning round to pull together the outstanding work along with information derived from completed projects (including stock and species specific research and analyses undertaken as part of AMP reviews), observer reports, research surveys and catch and effort data. The results of this project will be available to inform the full review of the NPOA in 2012.*

*MFish does not see the research and monitoring programme proposed in the NPOA as being outside, or additional to, the existing process for identifying and prioritizing research planning proposals. There are a number of criteria used to prioritise research projects through this process including, but not limited to, catch quantum and stock productivity. While acknowledging that research projects are subject to budgetary constraints, MFish is satisfied that the prioritisation process will ensure that shark related projects will be evaluated consistent with other research proposals and that the highest priority projects will proceed.*

*As these projects will be advanced through the normal fisheries research planning round MFish also considers that they should operate under the same funding arrangements as other fisheries research.*

### *Conversion factors*

- 94 SeaFIC supports improved data on conversion factors and believes they should be routinely assessed and reviewed. It notes that conversion factors for sharks cannot be set by fishery and method and tend to be made based on data collected by observers placed on larger deeper water vessels. SeaFIC contends that the processing of sharks in an inshore target fishery (e.g. set nets) will be more careful than processing of sharks which are a bycatch of other target fisheries (trawls) most likely resulting in significantly differing conversion factors for the same species. This difference needs to be identified and accounted for in order to improve the accuracy of catch data.

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<sup>6</sup> Shark species with stocks currently managed under the AMP framework are rig (SPO3), elephantfish (ELE 3 and 5) and school shark (SCH 3, 5, 7 and 8).

*SeaFIC's concerns will be addressed as part of the review of conversion factors included as an action in the NPOA. Additional submissions on conversion factors are summarised in the finning section.*

#### *Monitoring waste*

95 These submissions are summarised in the finning section.

#### *Measures to promote improved utilisation*

96 SeaFIC believes that the assessment of measures to increase utilisation is more appropriately the role of the quota owners within the QMS framework. SeaFIC encourages MFish to continue to raise awareness of new opportunities but do not think it is the role of the Ministry to invest in research into improved utilisation.

*MFish acknowledges that identifying and implementing utilisation opportunities is primarily an economic consideration for quota owners. However, management measures undoubtedly influence utilisation opportunities for industry. MFish considers it appropriate that barriers to utilisation should be identified and removed if possible.*

#### *Identification of habitats of significance*

97 These submissions are summarised in the MPA section.

#### *Additional research and monitoring proposals suggested by submitters*

98 SeaFIC is concerned that the programme does not include measures to research and monitor the recreational and customary removals of shark species, or the development of educational guides for recreational users around such issues as live finning and shark conservation.

*Recreational data such as gamefish tagging programmes will be included in the research and monitoring programme.*

#### *Protected species*

99 A number of submitters supported the protection of basking shark (Forest & Bird, NIWA, WWF and Penniket) and whale shark (NIWA, WWF, Penniket). NIWA and WWF urge MFish to proceed with the implementation of these two species by the end of 2008 and, in the case of basking shark submit that protection must include measures that reduce the incidence of incidental capture in trawl fisheries, particularly in the hoki, squid and barracouta fisheries.

100 NIWA and WWF also suggest that hammerhead and sevengill sharks may warrant full protection because of their low productivity and the extreme difficulty of assessing sustainable yields, and monitoring their abundance. Penniket considers that greater conservation or even protection of mako, porbeagle, seven gill, school and hammerhead sharks should be investigated as anecdotal information suggests these sharks seem to be in steep decline.

- 101 Pierce considers that IUCN Red List assessments for all New Zealand shark species should be completed. He considers this a well-established international method of classifying species according to their risk of extinction and, while not ideal for assessing species strictly on a national level, could potentially be used as a guide to the species and taxonomic groups requiring detailed attention.
- 102 Forest & Bird considers that the NPOA largely fails to identify and provide attention to vulnerable or threatened shark species. It notes that of the 26 New Zealand shark species currently recognised as threatened under the IUCN (31 species if you include potential new listings) (see Appendix 1), only great white shark is fully protected and basking shark is proposed for further protection. Just five shark species listed as threatened are managed under the QMS, with a further four listed on Schedule 4C. The remaining 16 threatened sharks (21 if possible new additions to the list are included) are unprotected. Forest & Bird submit that the NPOA should support DOCs review of shark species to be protected under the Wildlife Act, specifically noting that basking shark (*Cetorhinus maximus*), whale shark (*Rhincodon typus*), deepwater nurse shark or smalltooth sandtiger shark (*Odontaspis ferox*), manta ray (*Manta birostris*) and spinetail devilray (*Mobula japonica*) should be fully protected.
- 103 NIWA and WWF support the use of CITES listings as a tool for international management of shark populations in certain circumstances and recommend that New Zealand's policy relating to CITES listings of sharks be consulted on and detailed in the NPOA. Solander, however, contends that the proposed listing in Appendix 2 of CITES by the EU of Spiny Dogfish illustrates the caution that New Zealand has to adopt with regard to our own position under some of these international conventions.
- 104 Forest & Bird, NIWA and WWF submit that, although protected from targeted fishing, not enough has been done to reduce incidental mortality of great white sharks. They recommend that the NPOA include a commitment to review sources of incidental mortality of great white sharks and develop measures to reduce such mortality through the introduction of further measures to reduce the main sources of incidental mortality of great white sharks. Possible measures they propose include the implementation of time-area closures or regulating the use of certain types of fishing gear in some areas. HIS is unaware that measures are in place to protect Great White Sharks.

*MFish note the shark species suggested by submitters as warranting protection. Species that may be appropriate for protection will be identified through development and application of the prohibited utilisation standard. The IUCN status may inform this process (see Appendix 1) but care must be taken to ensure that threat status is considered in a New Zealand context. For example, Port Jackson Shark has only been reported once in New Zealand waters.*

*The current process whereby the smalltooth sandtiger shark (also known as the deepwater nurse shark) and two species of manta rays are being considered for protection under the Wildlife Act is being progressed by DOC.*

*A range of proposals were consulted on prior to the Ministers of Fisheries and Conservation agreeing to the suite of measures ultimately implemented to protect great white shark. MFish is satisfied that these measures provide appropriate protection for this species both within the EEZ and for New Zealand flagged vessels*

*fishing on the High Seas. Reported incidental captures of great white sharks will continue to be monitored.*

### **International conventions**

- 105 Pierce contends that New Zealand should be an active participant in CMS to ensure that all pelagic species meeting the criteria for listing are included in the convention. This is necessary as the CMS listing process shows severe deficiencies, with several pelagic species that are widely recognised as having undergone severe population declines internationally remaining un-listed.
- 106 NIWA and WWF consider that RFMOs have so far been very slow to address shark fisheries management. While acknowledging that New Zealand is already actively involved in RFMOs, and provides initiative and strong input to these processes, NIWA and WWF recommend that MFish take a strong proactive approach to including shark management into the work programmes of RFMOs in which they participate. Specifically WWF considers that the NPOA should recognise explicitly New Zealand's support for the need for RFMO members to collect and submit validated data on shark catch by species, a position supported by NZBGFC in relation to the distribution and abundance of migratory shark species. WWF also strongly supports the inclusion of New Zealand flagged vessels operating on the high seas within the scope of the NPOA.
- 107 Forest & Bird notes that the position New Zealand takes at RFMO meetings is not presented in the NPOA and recommends that a detailed description is given in relation to New Zealand's position or intended position on key shark species within international fora.

*New Zealand is an active participant in CMS. The Department of Conservation is the lead agency for this convention, however, the Ministry of Fisheries contributes to the development of New Zealand's position on shark management. Decisions on listing new species under CMS require the agreement of CMS parties, however, if the case is warranted New Zealand will be an active advocate of listing. More importantly New Zealand is an active advocate of improved shark management, data collection and joint research in RFMOs with which it engages. Jointly with Australia New Zealand has attempted to obtain agreement on a shark measure within CCSBT and took an active role in the adoption of a shark conservation measure by the WCPFC and the development of data collection standards for this organisation.*

*New Zealand position is adopted on a case by case basis and from year to year as circumstances in the international environment develop. In general New Zealand is an advocate of species specific data collection (but recognises the need for generic codes for lesser known species), shared information between flag states and regional bodies in support of stock assessment and output controls as opposed to input controls as the preferred mechanism to achieve sustainable management. New Zealand is also an advocate of complete protection where and when the biological characteristics of a species can not support utilisation on any scale.*

### **Develop and implement a prohibited utilisation standard**

- 108 These submissions are summarised elsewhere.

### ***Strengthen measures to eliminate life shark finning***

109 These submissions are summarised elsewhere.

### ***QMS introduction standard***

110 These submissions are summarised elsewhere.

## **SPECIES SPECIFIC COMMENTS**

### **Large pelagic sharks (blue, mako and porbeagle)**

111 NZBGFC notes that the large pelagic sharks are an important recreational gamefish and are taken as bycatch in the commercial tuna fisheries where the primary commercial value is derived from their fins. The general view of submitters is that, though these sharks are managed under the QMS, there remain concerns about the sustainability of these species under existing management arrangements. NZBGFC submit that these species, as apex predators, have a critical role in the proper functioning of the marine ecosystem.

### ***Low productivity***

112 NZBGFC note that most large pelagic sharks are slow growing, slow to mature, have limited reproductive capacity and that the removal of large females has a direct effect on the number of pups that can be produced. Consequently they are more vulnerable to fishing pressure than most other species managed under the QMS.

113 Commenting on the productivity of porbeagle, Pierce notes recent research suggesting that its biological parameters in New Zealand may be substantially more conservative than previously recognised. In relation to blue sharks, Solander notes that they are not on the IUCN red list and are relatively abundant having between 40-170 pups annually.

### ***Declining commercial catch***

114 NZBGFC considers that the NPOA glosses over the decreases in sharks taken in the tuna longline fishery, attributing the fall in commercial catch reports entirely to a decrease in fishing effort following the introduction of tuna and associated species into the QMS. NZBGFC do not accept that the observed decreases are simply due to a decrease in commercial fishing effort and considers that catch data are unreliable because of the low level of observer coverage in the tuna longline fishery.

115 Bennet also disagrees with the MFish contention that this depletion is due to less effort by a diminishing fleet. Bennett contends that the introduction of tuna into the QMS lead to a large fleet expansion which created a huge depletion in the semi resident shark populations that habituated the East Coast of the North Island. Although Bennet concedes that shark bycatch has decreased as the number of full time operators has decreased to approximately 15 vessels, he contends that the reason for this decrease is that fishers remaining in the fishery have adopted low impact fishing practices.

116 Solander submit that tuna fishers avoid interacting with sharks and that the adverse economic effects of shark interactions are a strong incentive for fishers to avoid them. Adverse economic effects of shark interactions include:

- Depredation – the actual loss in revenue from shark damage to target species is considerable as tuna partly eaten by sharks have no market.
- Risk of injury to crew – sharks bite off the branch lines in vicinity of the hook, this releases lead weights and swivels which become missiles flying through the air at high speed. There has been at least one fatality in New Zealand and injuries regularly occur.
- Loss of fishing potential – every hook taken by a shark reduces the catching potential for valuable target species.
- Expenditure of time – the time necessary to remove sharks and repair damaged gear far exceeds any commercial value

#### *Section 14*

117 NZBGFC and Motupipi note that the large pelagic sharks are managed under section 14 which allows the setting of catch limits without estimating MSY. NZBGFC contends that, although the NPOA asserts that the catch limits were set to “prevent an escalation of future catches”, they were clearly set at a level higher than the highest reported catch levels and do not restrain catch. As examples it cites mako shark catch which peaked at 319 t in 2000–01 but has a TACC of 406 t; and blue shark which peaked at 1415 t in 2000–01 and has a TACC of 1860 t. NZBGFC is concerned at this situation as commercial catch could increase if large overseas longline vessels were chartered to fish New Zealand shark, swordfish and tuna quota.

#### *Declining recreational catch*

118 NZBGFC provides figures showing a decreasing trend in the annual recreational catch of mako sharks with reported catch over the last four years the lowest on record.

#### *Nylon leaders*

119 NZBGFC considers that wire longline leaders should be banned in the tuna fishery to assist escape of large sharks, citing evidence from an Australian study that using all nylon leaders on tuna long line gear reduces shark bycatch. It notes that this research also showed an increase in bigeye tuna catch rate using nylon only instead of wire leaders.

120 Solander contends that those targeting tuna do not use wire traces as they do not want to catch sharks.

#### *Geographic range*

121 NIWA and WWF consider that there is uncertainty as to the movements of porbeagle shark, though their distribution suggests a wide range, possibly into sub-Antarctic waters.

*MFish acknowledges that the pelagic sharks are an important game fish for recreational fishers and welcomes the engagement on their management from this sector. These species were introduced to the QMS in 2004. The current catch at that time was considered to be sustainable and formed the basis of the initial TACs. No new information is available to suggest that these TACs are no longer sustainable.*

*Subsequent to the introduction of the pelagic sharks to the QMS effort in the tuna fishery has decreased with rationalisation of the fleet. As a result commercial catches of pelagic sharks have also decreased and are now below the TAC. This does not imply a sustainability concern. Rather it is likely to represent a greater number of individuals of these species are now left in the water.*

*Anecdotal reports of a decreasing trend in recreational catch remain a concern however. Information from gamefish tagging programmes will be sought to inform the research and monitoring programme in regard to these species.*

*As noted previously nylon leaders are almost universally used by commercial fishers in the tuna fishery.*

## **Spiny dogfish**

### *Sustainability*

- 122 Motupipi, Brierly and Forest & Bird note the biological characteristics of spiny dogfish which make them particularly vulnerable to overfishing (including long gestation period, low fecundity, late maturity and low natural mortality). Motupipi and Brierly also note that spiny dogfish travel in single sex-age schools enabling large females to be targeted commercially further increasing the vulnerability of the species. Motupipi contend that the vulnerability of spiny dogfish was acknowledged by the Minister of Fisheries in his Declaration Notice when introducing this species into the QMS. Forest & Bird note that spiny dogfish is listed as vulnerable on the IUCN Red list. These submitters therefore support a cautious approach to their management.
- 123 Brierly and Motupipi consider however that spiny dogfish has been poorly managed both prior, and subsequent, to introduction to the QMS. They claim that commercial fishing interests waged an extensive media campaign against QMS entry for SPD. While conceding that the campaign to delay QMS entry ultimately failed, Brierly contends that it was successful in getting MFish managers to recommend measures such as marginally effective deemed values and grossly excessive TACCs, effectively negating any sustainability benefited that could have accrued from management within the QMS.
- 124 Specifically Motupipi and Forest & Bird note that, in the absence of stock assessments, spiny dogfish TACCs were calculated using catch histories. Motupipi considers that catch histories are not a scientific method of calculating MSY as they do not incorporate a biological stock assessment taking into account specific life history characteristics. Forest & Bird quote the 2007 Plenary report which concludes “*It is unknown whether current catch limits are sustainable or whether they are at levels that would allow the stock to move towards a size that will support the maximum sustainable yield.*”

125 Submitters cite a number of information sources that raise concerns over the status of spiny dogfish including that:

- prior to the introduction of SPD into the QMS the landed catch comprised mainly of large females and the catch of these sharks was declining dramatically. Subsequent to introduction discarded males and small females were reported for the first time and the NPOA shows that 55% of the total reported SPD catch is now discarded, and these discards are masking a continued decline in the catch of large females (Motupipi)
- the NPOA states that one of the signals of overfishing is that the catch limits are being substantially under caught and this is currently occurring in SPD7 where current catch is only about half of the TACC (Motupipi and Brierly)
- anecdotal information from fishers suggests that spiny dogfish in SPD 7 are not there in the commercial numbers of recent years (Motupipi)
- the current fishing mortality rate of spiny dogfish is far in excess of the reproduction rate (a NIWA report was cited that concluded that spiny dogfish fisheries could only support a maximum of 5% of the biomass being harvested annually (Motupipi)
- spiny dogfish are a valuable resource (providing meat, fins, oil, skin, cartilage, jaws, teeth and chemicals) and there is growing international demand for this species as other countries' quota cut backs have pushed spiny dogfish prices to unprecedented highs. This has led to more targeting and rapid exploitation and depletion have been well recorded worldwide (Motupipi)
- It considers that the huge tonnage of recreational SPD that is discarded dead is not recorded and should be both acknowledged and included in TAC calculations (Motupipi)
- spiny dogfish appear to have expanded their range into deeper, more offshore waters in the last decade but nothing is known about their movement patterns (NIWA and WWF)

126 Motupipi considers that this fishery is doomed if no action is taken and that Mfish is not acting responsibly in the management of this fishery as the TACC is not restraining catch. However it submits that there is no excuse to let the spiny dogfish fishery collapse as they are better known from a biological standpoint than any other shark. It states that all aspects of its anatomy, biology, behaviour, breeding, age and growth rates have been studied and recorded both nationally and internationally. Brierly also contends that the QMS can be made to work for species like SPD and that we have sufficient scientific information to manage SPD appropriately. It contends that what is needed is the policy and political will to ensure sufficient focus is placed on sustainability and less on the commercial impact of limiting catch of other commercially targeted species by constraining SPD bycatch.

127 Motupipi consider that, as spiny dogfish are a single genetic stock within New Zealand all QMA-TACs require review. Specifically Motupipi submit that the SPD7 TACC needs to be reduced as a matter of urgency to allow for the sustainability of the

large female population on which the population is dependant and which are targeted by fishers. It recommends a sustainable TACC of between 600 and 900 tonnes for SPD 7.

### *CITES listing*

- 128 Motupipi notes that the NPOA lists sustainability issues for spiny dogfish and questions why New Zealand did not support listing this species on Appendix II of CITES at the CITES Conference 2007. Solander, however, welcomes the stand as taken by New Zealand in respect to the proposed CITES listing of this species.

### *Schedule 6*

- 129 WWF and Forest & Bird oppose the inclusion of spiny dogfish on Schedule 6 because it removes any incentive for fishers to move out of areas where this species is being caught, and legitimises discarding and unnecessary mortality. Forest & Bird note that the NPOA states that the survival of spiny dogfish once caught is limited and contends that existing arrangements are in direct conflict with objectives 5, 6 and 7 of the NPOA.

*Provision was made to allow fishers to discard spiny dogfish both dead and alive by listing this species on Schedule 6. Fishers are required to balance all spiny dogfish catch with ACE, or pay the associated deemed value, regardless of whether this catch is landed or discarded. The reason for this provision was that, although required to land all QMS species, the costs associated with landing unwanted spiny dogfish may provide an incentive for fishers to discard and not report spiny dogfish catch. Without accurate reporting appropriate management settings for this fishery could not be established.*

*Requiring fishers to balance their catch of spiny dogfish provides some incentive for fishers to either avoid catching this species, or to offset ACE or deemed value costs by deriving some economic return from the species. The power of this incentive depends amongst other things on, the availability of ACE, the deemed value rate, the economic value of spiny dogfish product and costs associated with a reduced ability to harvest more valuable target species (for example, by the use of limited hold space to store spiny dogfish product). Spiny dogfish are widely distributed and are both targeted and taken incidentally in a range of fisheries. As a consequence the influence of these incentives on fishers' behaviour varies by fishery. This was reflected in the divergence of opinion amongst fishers when spiny dogfish were originally considered for inclusion on Schedule 6 in 2004.*

*In the final advice to the Minister on inclusion of spiny dogfish on Schedule 6 MFish noted concerns raised by some submitters regarding the use of the then proposed measures over the long-term. MFish implicitly acknowledged that removal of this provision would be contemplated in future although noted that, as MFish routinely reviews the management settings for all QMS stocks, it was not necessary to set a specific timeframe for removing spiny dogfish from Schedule 6. In his decision letter the Minister agreed to provide flexibility to fishers through Schedule 6 provisions. However, he directed MFish to monitor this fishery closely and that if this revealed that fishers were discarding spiny dogfish without reporting accurately, then the*

*Schedule 6 provisions would need to be re-examined or more costly monitoring programmes implemented.*

*MFish note anecdotal reports of increasing market interest in spiny dogfish. This is supported by recent increases in the port price for this species, which in 2007-08 was in the order of \$0.50 to \$0.52 per kg. MFish therefore consider it appropriate to review the Schedule 6 provisions, and associated management settings, for spiny dogfish and have included this review as an action under the NPOA.*

*New Zealand did not support listing spiny dogfish on Appendix II of CITES as although this species is regionally threatened elsewhere, this is not the case in New Zealand.*

## School Shark

130 Forest & Bird makes special mention of school shark. It considers this species to be one of the most abundant large predatory fishes found on the New Zealand shelf and if the stock were to collapse, there would likely be unknown ecological consequences.

131 Forest & Bird have concerns for the status of school shark stocks due to:

- their very low productivity
- school shark fisheries in other countries have collapsed after sustaining high catches for variable periods
- reported landings in New Zealand are around the same levels as those reported in Australia's Southern Shark Fishery prior to its collapse
- the Australian Southern Shark Fishery collapsed and has yet to recover although it is one of the most well studied shark fisheries
- poor information on the status of New Zealand's school shark stocks as acknowledged in the NPOA

132 Pierce considers that more data on the recreational catch levels of school shark is required.

*As discussed in the research and monitoring section of this paper, school shark stocks are to be considered as part of research project INS2008/03, which will commence on 1 October 2008.*

## Rig

133 Motupipi considers that there are presently serious sustainability concerns for SPO 7 and that SPO 8 also needs review.

134 NIWA and WWF note markedly different catch per unit effort (CPUE) indices within SPO 7, that they contend suggests that either our understanding of stock structure is poor or that the stocks may be smaller than the current management units.

*As discussed in the research and monitoring section of this paper, rig stocks are to be considered as part of research project INS2008/03, which will commence on 1 October 2008.*

## OTHER ISSUES RAISED

### Review of NPOA

- 135 Both NIWA and WWF note that the IPOA proposes that NPOAs should be reviewed at least every four years. They consider that the performance of the New Zealand NPOA should be assessed at least every four years and the NPOA should incorporate performance indicators for that assessment. Forest & Bird also support a review of the NPOA effectiveness in relation to its objectives and recommends an initial review following one year of operation and subsequently every 2 years.

*The NPOA incorporated an overall periodic review and revision to ensure its ongoing effectiveness. The proposed research and monitoring programme also anticipated a review of the management measures in place for all shark species every 3-5 years. MFish also notes the ongoing annual monitoring of management frameworks currently undertaken thorough the QMS introduction standard and to be undertaken in future through the proposed prohibited utilisation standard.*

*In terms of the timetable for a full review and revision MFish considers that the timetable proposed by Forest & Bird is too short to effectively assess the effect of the proposed actions. A four yearly review has instead been adopted.*

### Non-fisheries impacts

- 136 NIWA and WWF agree that fishing impacts on shark populations are the most important, and should be accorded highest priority. However, they are particularly concerned that the NPOA does not address the impact of terrestrial and inshore human activities (e.g. sedimentation, reclamation, pollution, dredging) that degrade the habitat and probably the health of inshore and estuarine sharks (especially rig, school shark, elephantfish, eagle ray, short-tailed stingray and long-tailed stingray). In particular they note the impact of humans on nursery areas and pupping grounds.
- 137 Forest & Bird consider it essential that the NPOA include a strategy for monitoring, and mitigating if appropriate, the effects of climate change. More generally it considers the NPOA lacks an assessment of non-fisheries activities, the benefits or threats they may pose to shark species and the management tools that may be applicable in reducing any impacts. NIWA and WWF suggest tools that could be used for this purpose range from improving management of terrestrial sources of contaminants (such as sewage, heavy metals and sediment) to closures of nursery grounds to specific/all fishing methods and other human activities such as marina development and dredging and dumping of spoil.

*MFish acknowledges that human activities other than fishing have an impact on shark stocks, particularly those where inshore areas are important components of their habitat during vulnerable live stages. MFish reiterates, however, that the impacts of*

*fishing are likely to constitute the greatest threats to the sustainability of sharks and are therefore the primary focus of New Zealand's NPOA at this time. This position is consistent with the IPOA.*

*The NPOA will be further developed over time. Non-fishing related impacts on sharks, such as pollution, coastal development and land use change, and climate change, will be considered for inclusion in future versions of the NPOA.*

## Structure of NPOA

- 138 Forest & Bird contend that the NPOA structure is generally difficult to read and that the objectives are somewhat hidden. It suggests a new structure based on that recommended in the IPOA-Sharks.

*The FAO has released Technical Guidelines on the Conservation and Management of Sharks to provide detailed guidance on the development and implementation of the NPOA. While acknowledging regional and national differences in fisheries, the FAO has provided through these guidelines a suggested structure for NPOAs.*

*MFish has revised the structure of the NPOA to improve clarity and to better identify objectives. However, the overall structure of the NPOA has been retained as it better fits the New Zealand management framework than that proposed by the FAO.*

## Livers

- 139 SeaDragon, a company that extracts oil from deepsea shark, expresses disappointment that some, although not all, fishers appear reluctant to recover the livers from these species. It supports any initiative that requires fishers to land sharks which may result in use of livers, fins and flesh. SeaDragon notes that there is an economic incentive to land livers, estimating that NZ\$1.5m is currently being forgone, and contend that if the financial incentives are not sufficient, MFish should require fishers to land these sharks. SeaDragon does not however condone the fishing of shark for livers or fins alone.

- 140 NIWA, WWF and Forest & Bird also do not support shark liver fisheries where only the liver is utilised, considering such fisheries to be unacceptable from the point of view of wastage. They contend that data included in the NPOA indicates that such liver fisheries are occurring. NIWA and WWF recommend that the landing and sale of shark livers be restricted to species that are managed under the QMS. WWF further recommend that the NPOA promotes a ban on shark liver fisheries where they involve discarding the remainder of the shark.

*MFish does not consider that the data presented in the NPOA suggests that sharks are targeted for their livers. While for some species the primary landed state may be liver, these sharks are incidental catch from which only the liver, or in some cases the liver and fins, is utilised. In the latter case such sharks would be recorded against the primary code of liver as the livers of these species is heavy and would typically exceed the weight of the combined fins. As deepsea sharks are invariably captured dead, MFish fully supports the utilisation of their livers. MFish has written to fishers on*

*two recent occasions to advise them of commercial opportunities relating to shark livers.*

*Ultimately, however, whether or not shark livers are landed from such incidental catch is a financial decision for individual fishers. There is a cost in terms of processing time and storage space that fishers must weigh against the financial return from the product. MFish does not consider it appropriate to legislate to force fishers to utilise shark livers if it is not in their financial interests to do so.*

## **Maori interests**

141 Te Ohu notes that the consumption of shark meat was important to Maori and, more specifically, Motupipi submit that school shark was the most important food shark for Maori and that dried spiny dogfish was also very important. In addition to food, Te Ohu note that a number of important traditional use and management practices also apply to the other resources that can be obtained from sharks (i.e. bone, teeth and oil). Therefore Te Ohu would not want to see any domestic measures developed that might constrain the continued use and associated passing down of the knowledge of these important resources – particularly for taonga tuku iho (prized treasures) or rongoa (medicine) or the economic development of such practices should Iwi/Maori find this appropriate. It contends that Maori use and management practices relating to sharks must be acknowledged and provided for in the creation of any new measures to manage sharks. Te Ohu supports Treaty Settlements with individual Iwi that have established protocols and other measures relating to taonga species including shark species.

142 Te Ohu also notes that it has not had a chance to consult with Iwi over the NPOA. It notes that MFish has an active duty to consult with, and provide for the input and participation of tangata whenua and note an expectation that this would have been factored into the consultation programme.

*Consultation on the NPOA was broad. The document was made freely available on the MFish website and letters were sent to stakeholders providing an overview of the development of the NPOA and the consultation process and identifying where the NPOA sharks could be found. The letter also offered to provide hard copies of the document to any stakeholders who requested it. The list of stakeholders to whom letters were sent included Te Ohu and Iwi organisations.*

*Specific management measures that may be implemented as a result of the NPOA will be individually consulted on. MFish acknowledge that some of these measures may relate to important traditional resources for Maori. MFish will ensure that Maori are appropriately involved in management decisions for such species.*

## APPENDIX 1

Vulnerable and near threatened shark species in New Zealand waters listed by the IUCN, showing New Zealand fisheries code and current management regime.

	Common Name	Scientific name	Fisheries Code	NZ Management regime
Vulnerable	1 Great white shark	<i>Carcharodon carcharias</i>	WPS	Protected
	2 Basking shark	<i>Cetorhinus maximus</i>	BSK	Schedule 4C
	3 Whale shark	<i>Rhincodon typus</i>		Schedule 4C *
	4 Porbeagle	<i>Lamna nasus</i>	POS	Section 14
	5 Spiny dogfish	<i>Squalus acanthias</i>	SPD	Section 13
	6 Leafscale gulper shark	<i>Centrophorus squamosus</i>	CSQ	Open access
	7 School shark, tope	<i>Galeorhinus galeus</i>	SCH	Section 13
	8 Oceanic whitetip shark	<i>Carcharhinus longimanus</i>		
Near Threatened	1 Bronze whaler	<i>Carcharhinus brachyurus</i>	BWH	Open access
	2 Galapagos shark	<i>Carcharhinus galapagensis</i>		
	3 Frill shark	<i>Chlamydoselachus anguineus</i>	FRS	Open access
	4 Sharpnose sevengill shark	<i>Heptanchias perlo</i>	HEP	Schedule 4C
	5 Prickly shark	<i>Echinorhinus cookei</i>	ECO	Open access
	6 Mandarin dogfish	<i>Cirrhigaleus barbifer</i>		
	7 Portuguese dogfish	<i>Centroscymnus coelolepis</i>	CYL	Open access
	8 Plunket's shark	<i>Proscymnodon plunketi</i>	PLS	Open access
Low Risk (nt/1c)	1 Port Jackson shark	<i>Heterodontus portusjacksoni</i>		
	2 Crocodile shark	<i>Pseudocarcharias kamoharai</i>		
	3 Mako, shortfin mako	<i>Isurus oxyrinchus</i>	MAK	Section 14
	4 Sixgill shark	<i>Hexanchus griseus</i>		
	5 Grey reef shark	<i>Carcharhinus amblyrhynchos</i>		
	6 Silky shark	<i>Carcharhinus falciformis</i>		
	7 Dusky shark	<i>Carcharhinus obscurus</i>		
	8 Tiger shark	<i>Galeocerdo cuvier</i>	TIS	Open access
	9 Blue shark	<i>Prionace glauca</i>	BWS	Section 14
	10 Smooth hammerhead shark	<i>Sphyrna zygaena</i>	HHS	Schedule 4C
Proposed listing	1 Longtail skate (VU)	<i>Arhynchobatis asperrimus</i>		
	2 Pale cat shark (VU)	<i>Apristurus exsanguis</i>		
	3 Smooth skate (NT)	<i>Dipturus innominatus</i>		
	4 Manta ray (NT)	<i>Manta birostris</i>		*
	5 Spinetail devil ray (NT)	<i>Mobula japanica</i>		*

\* Being considered for addition to the Wildlife Act