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INTRODUCTION

1 This document outlines the Ministry of Fisheries' (MFish's) final advice on the draft Threat Management Plan. MFish's final advice focuses on possible measures under the Fisheries Act 1996 (the Act) to avoid, remedy or mitigate the effect of fishing-related mortality on Hector's and Maui's dolphins.

Context

2 Hector's and Maui's dolphins are endemic to New Zealand and are considered to be one of the world's rarest dolphin species. The government's vision statement for the management of Hector's¹ dolphins states:

“Hector's dolphins should be managed for their long term viability and recovery throughout their natural range”.

3 As part of a long-term strategy to achieve this vision, the Department of Conservation (DOC) and MFish have been jointly working to develop a Threat Management Plan (TMP) for Hector's dolphins. The draft TMP identifies all human-induced threats to Hector's dolphin populations and outlines strategies to mitigate those threats where it is considered necessary.

4 The goals of the TMP are to:

- a) ensure the long term viability of Hector's dolphins is not threatened by human activities; and,
- b) further reduce impacts of human activities as far as possible, taking into account advances in technology and knowledge, and financial, social and cultural implications.

5 There are fishing- and non fishing-related threats facing Hector's dolphins. You have legislative responsibility for managing fishing-related threats while the Minister of Conservation will consider measures to manage non-fishing-related threats.

6 In August 2007 DOC and MFish released the draft TMP for public consultation. Over 2400 submissions were received from a variety of interested parties.

7 The final advice on the TMP has been split in two parts based around the separate legislative mandates. This advice paper mainly considers fishing-related threats. If there is a non-fishing-related threat that is pertinent to your decision-making process, in assessing whether new or additional management measures are required to avoid, remedy or mitigate the effect of fishing, then this threat and its implications will be discussed in this paper.

Process

8 Any decision you make to implement new or additional measures will be made under section 15(2) of the Act. This section requires you to make any such decision in consultation with

¹ In the introduction section reference to Hector's dolphin includes reference to Maui's dolphin. The Maui's dolphin is a sub-species of Hector's dolphin.

the Minister of Conservation. To meet the requirement for consultation this paper has also been forwarded to the Minister of Conservation, who will likely pass her views on to you via letter outlining any specific recommendations for measures under the Act and rationale for those recommendations. This advice paper has been prepared in discussion with DOC. For the most part, DOC supports the options put forward. MFish anticipates that any specific DOC views that have not been incorporated into this document will be included in the Minister of Conservation's letter to you.

9 The Minister of Conservation is considering the introduction of four new Marine Mammal Sanctuaries under the Marine Mammal Protection Act 1978 (MMPA). DOC has indicated that you will be consulted on these proposals before implementation. The implications for fishers will largely depend on whether the Minister of Conservation seeks to implement controls on fishing as part of implementing any Marine Mammal Sanctuary (MMS). The likelihood of this occurring will depend on the Minister of Conservation's assessment of the controls in place under the Fisheries Act, following your decisions arising from this advice paper. Officials from both departments wish to have consistent controls on mitigating the effects of fishing throughout the range of the dolphins, including within any possible sanctuary. MFish will brief you on implications for fishers from the proposals, at the time of consultation.

10 A final TMP containing fishing- and non-fishing-related management frameworks will be developed, following decisions by Ministers for release to the public.

Structure of the Final Advice Paper (FAP)

11 The FAP, as with the draft TMP, is split between general species and legislative issues, and regional sections outlining matters relating to each individual population. Options for mitigation and detailed explanation of costs associated with each option are outlined fully at a regional level. General species-related issues and aggregate costs are outlined below. Separate sections on monitoring and research are also included.

12 Your legislative obligations relate to managing the effect of fishing on the protected species at a population level, rather than the effect on individual dolphins. The species is divided into two sub-species (based on genetic differences), one of which occurs principally in South Island waters (the Hector's dolphin), and the other in the waters of the north-west coast of the North Island (the Maui's dolphin). Three populations of Hector's dolphins have been identified in the South Island that are genetically distinct. They are also geographically separated from each other and are found on the east coast of the South Island (ECSI), the west coast of the South Island (WCSI) and the south coast of the South Island (SCSI).

13 Given the environmental principles in the Act, MFish believes it is appropriate to consider the effects of fishing on these dolphins at a regional level and therefore addressing issues by distinct populations. The proposed cost of measures and contextual information varies at this population level. The genetic differences between Hector's and Maui's dolphins provide further rationale for considering management options for Maui's dolphins separately.

Factors to be considered

Section 15(2)

14 The key legislative provisions under the Act which are relevant to your decision on dolphins are outlined in Annex 1. In summary, the main legislative provision on which your decision is

based is section 15(2) of the Act. Section 15(2) provides that:

“ In the absence of a population management plan, the Minister of Fisheries may, after consultation with the Minister of Conservation, take such measures as he or she considers are necessary to avoid, remedy or mitigate the effect of fishing-related mortality on any protected species, and such measures may include setting a limit on fishing related mortality.”

15 Whether it is necessary for you to take action depends on a variety of factors. Although section 15 of the Act provides considerable discretion to what measures you may take to limit the effects of fishing on dolphins, you may only take measures that you consider necessary in light of the purpose and principles of the Act.

16 You are not required to weigh up the utilisation and sustainability dimensions for protected species in the same manner as would be the case for harvestable species such as fish stocks².

17 Your major concern is rather to ensure that the impacts on protected species are managed, to ensure the environmental principles in the Act are met as a minimum. The environmental principles are outlined in detail in Annex 1. However, you are not constrained by the objectives contained within the environmental principles and you may consider that additional steps are necessary over and above those required to meet these principles.

18 In considering whether it is necessary to manage any effect of fishing it is also useful to note that effect is defined in section 2 in the Act as:

“the direct or indirect effect of fishing; and includes:

- a) any positive or adverse effect; and*
- b) any temporary or permanent effect; and*
- c) any past, present, or future effect; and*
- d) any cumulative effect which arises over time or in combination with other effects regardless of the scale, intensity, duration, or frequency of the effect; and also includes:*
 - i) any potential effect of high probability; and*
 - ii) any potential effect of low probability which has a high potential impact.”*

Key factors

19 In determining whether it is necessary to implement new or additional measures MFish consider the following factors are most relevant.

- a) Issues relating to the status of the species, including the size of the population or species and trends in population size, and whether the biology of the species makes it susceptible to human-induced mortality.

² For example, the Court of Appeal (Squid Fishery Management Company 2004) noted that “The point of the exercise is not to arrive at a number of sea lions [i.e. protected species] which can be harvested sustainably, and thinking associated with sustainability of a harvestable species is not appropriate. Optimum usage does not equate to maximum usage”

- b) Assessing the nature of the threats facing the population and what is causing them.
- c) Effect of threats on the species and/or population; assessing the extent of the threat and the effect the threat is having on population size. The assessment of effect should consider past, present and future impacts.
- d) Examining current management. In the case of Maui's dolphins and a number of the populations of Hector's dolphins, management measures are already in place. It is important to consider the effectiveness of those measures in mitigating risk as part of a determination about whether new measures are necessary.
- e) Overarching all of the above factors is a general consideration relating to uncertainty in information. The information principles in the Act require the Minister of Fisheries to act with caution (in relation to both ensuring sustainability and providing for utilisation when information is uncertain but not to postpone decisions that are necessary to achieve the purpose of the Act). There must be a sufficient level of information to suggest a reasonable basis to act.

20 When deciding whether to manage the effect of fishing-related mortality on dolphin populations, you should be mindful of the biological diversity of the aquatic environment and also be mindful of maintaining the genetic diversity within the species (including the viability of the four genetically distinct populations³). Existing populations are fragmented and susceptible to reproductive isolation, but historic stranding and sighting information shows the dolphins once had a more continuous distribution around the New Zealand coast.

21 In relation to the status of the population, the environmental principles require the biomass of associated and dependent species (which includes dolphins and other protected species) to be maintained above a level that ensures their long-term viability. There is no specified limit as to how far above 'long-term viability' a species can be managed. However, there are conservation policy statements that reflect government's overall desired outcome for threatened species to achieve recovery to non-threatened status.

22 The vision statement, that Hector's dolphins should be managed for their long-term viability and recovery throughout their natural range, is derived from DOC's Conservation Services General Policy and reflects the desired recovery component associated with managing threatened species.

23 The MMPA requires threatened species managed by a Population Management Plan (PMP) to be rebuilt to non-threatened status within a period not exceeding 20 years. However, there is no PMP for Hector's or Maui's dolphins. DOC is not obliged to develop a PMP for all threatened species and has chosen not to pursue a PMP for Hector's dolphins on the basis that a threat management plan approach was considered a more direct route to achieving improved management, given available information.

24 There has been general public concern about the impact of human-induced mortality on Hector's and Maui's dolphins. This has been evidenced by petitions to Parliament; proposed management strategies from Non-Governmental Organisations (NGOs) and significant amounts of correspondence to Ministers on the impact of human-induced mortality on Hector's and Maui's dolphins.

³ Three genetically distinct populations of the Hector's dolphin and the Maui's dolphin.

25 MFish considers that government's management objectives for threatened species, expressed through policy and taken along with general societal views can provide relevant context to your decision on whether additional measures are necessary to manage the effects of fishing-related mortality on Hector's and Maui's dolphins.

26 While not mandatory under the Act, the concept of rebuilding populations to achieve non-threatened status is open to you when considering what effects of fishing are acceptable. The objective of rebuilding populations may also be appropriate if you feel that it reflects the cultural values associated with dolphins, such as the taonga status given to the species by tangata whenua.

27 When you consider options to mitigate the threat from fishing to dolphins, a key issue is to assess whether current measures are effective, and to examine the nature and extent of the effects of fishing on dolphin mortality rates.

28 The degree of risk of fishing-related mortality relates to the likelihood of encounter with fishing gear. This, in turn, is determined by the local abundance of Hector's dolphins and the frequency of fishing in that area. The frequency of fishing can be influenced by management measures, and the likelihood of an interaction resulting in mortality can be reduced by the use of effective mitigation measures. An understanding of dolphin distribution and the likelihood of interaction is therefore critical to determining the appropriate management measure.

29 However, you also need to consider the risk stemming from interaction. The Act does not compel you to reduce the risk of interaction to a level that results in zero mortality. You are required to consider the impact of that mortality on the population of Hector's dolphin overall and the populations at a regional level. In some cases the level of mortality estimated for each regional population is very small due to the size of the population (i.e. SCSH Hector's dolphins and Maui's dolphins). In this situation it is open to you to consider simply reducing the risk of interaction resulting in mortality to low levels.

Uncertainty in information

30 There is uncertainty in information on the effectiveness of current and proposed measures. This uncertainty does not preclude you from making a decision based on best available information. Where there is uncertainty in the available information you need to take this uncertainty into account and assess all of the information and determine whether the information provides reasonable grounds to take action to avoid, remedy or mitigate the effects of fishing.

31 There is considerable debate among industry, non-commercial users and environmental groups about the necessity for measures to avoid, remedy or mitigate the effects of fishing. The views of submitters are split. Industry and non-commercial users argue that the information is insufficient to suggest a problem and that more research and monitoring is required. Environmental groups on the other hand suggest that there is considerable information on which to base decisions and that action is necessary to manage the effects of fishing-related mortality on the species and populations now. A detailed analysis of submissions is attached as Annex 2.

32 If you consider that measures to manage the effects of fishing are necessary then the cost of those measures in terms of impacts on utilisation become a relevant factor in determining what further measures should be implemented.

33 MFish commissioned a socio-economic impact assessment and a research project to assess the impact and relative effectiveness of different management strategies. Key findings from these

projects have been used to improve the quality of information about the sustainability benefits and utilisation costs of any measures proposed to manage the effects of fishing on Hector's and Maui's dolphins. Information from these projects has been incorporated into this final advice. The national and regional sections of this document contain an analysis of the costs and benefits of the management measures proposed.

Case law section 15(2)

34 The leading case in relation to section 15(2) is a Court of Appeal decision *Squid Fishery Management Co v Minister of Fisheries*, (13 July 2004, CA39/04). At paragraph 75 the Court commented that the Minister was required to balance utilisation objectives and conservation values and in the context of a harvestable species, this requires utilisation to the extent that it is sustainable.

35 However, at paragraph 77 the Court recognised that for a protected species it is not appropriate to think about the concept of sustainability as it relates to a harvested species. A precautionary approach is available to the Minister in balancing risk to the protected species against utilisation advantages.

36 The Court commented at paragraph 79 that the Minister is required to form a view as to the extent which (or perhaps point at which) utilisation threatened the sustainability of the protected species population.

Species issues

37 The following sections outline species-related issues that will allow you to consider whether it is necessary to implement measures to avoid, remedy, or mitigate the effects of fishing-related mortality at a species level. This section will also provide context to consideration of the need for management action at a population (regional level). A summary of key stakeholders' views are included at the front of each section, where issues have been raised in submissions. These views are not direct quotes from submissions but rather seek to outline the general views expressed. A detailed summary of submissions attributed to key stakeholder groups and interested parties, along with the MFish response to those views, is attached as Annex 2.

Biology

38 Hector's dolphins are endemic to New Zealand, meaning they are only found in New Zealand's waters. The species is divided into two sub-species (based on genetic differences), one of which occurs principally in South Island waters (the Hector's dolphin), and the other in the waters of the north-west coast of the North Island (the Maui's dolphin). Map 1 identifies the distribution of Hector's and Maui's dolphins.

39 The Maui's dolphin population has a distribution between north Taranaki and Northland.

40 Three populations of Hector's dolphin have been identified in the South Island that are genetically distinct and are geographically separated. These are found on the east coast of the South Island, the west coast of the South Island and the south coast of the South Island.

41 Hector's dolphins have been sighted irregularly at other North Island locations such as Wellington, the Wairarapa Coast, Hawke's Bay, and Bay of Plenty. It is unknown what relationship exists between these dolphins and the North and South Island populations.

42 Hector's dolphin is an inshore coastal species with a limited home range. They are most often seen in murky waters close to shore and generally live in small groups – usually between three and five individuals but larger groups (up to 30 to 40 individuals) are sometimes seen. Hector's dolphins feed on a variety of inshore species, including red cod, yellow eyed mullet, small kahawai, stargazers and sea floor invertebrates.



Map 1: Distribution of Hector's and Maui's Dolphins (indicative only)⁴

⁴ Information on Hector's dolphin distribution for the current map has been obtained from: Hector's Dolphin annual distribution metadata - lineage document November 2006; from Ministry of Fisheries, Web Mapping application (author, Suze Baird, NIWA): www.nabis.govt.nz;

<https://www.nabis.govt.nz/resources/documents/MD/Annual%20distribution%20of%20Hector's%20dolphin.pdf>;

Maui's Dolphin annual distribution metadata - lineage document November 2006; from Ministry of Fisheries, Web Mapping application (author, Suze Baird, NIWA): www.nabis.govt.nz;

<https://www.nabis.govt.nz/resources/documents/MD/Annual%20distribution%20of%20Maui%20dolphin.pdf>

43 Dolphins have some key biological characteristics that make them susceptible to the effects of human-induced mortality (including fishing-related mortality). Dolphins:

- a) are short-lived (about 20 years);
- b) have a low reproduction rate (a female has a single calf every two to three years);
- c) become sexually mature at a relatively late age (about seven to nine years); and
- d) They also have a localised and inshore distribution (which can overlap with many human coastal activities).

44 These biological characteristics result in a low overall maximum population growth rate, meaning the dolphins can be threatened by low levels of human-induced mortality. Potential Biological Removal (PBR) analysis suggests the populations cannot sustain large-scale human-induced mortalities.

Status

Key stakeholder comments

45 The Seafood Industry Council (SeaFIC) and Te Ohu Kai Moana (TOKM) express concern about the uncertainty around the calculation of the conservation status of Hector's and Maui's dolphins. In particular they note that the International Union for Conservation of Nature (IUCN) status is based on scientific work which contains considerable uncertainty.

Discussions

46 The Hector's and Maui's dolphin is considered to be one of the world's rarest dolphin species. The Minister of Conservation declared Hector's dolphins threatened in 1999 and nationally endangered in 2003. The South Island populations are collectively ranked as nationally endangered by DOC and endangered by the IUCN. The North Island population (Maui's dolphin) is ranked as nationally critical by DOC and critically endangered by the IUCN. Population estimates, although uncertain, indicate there are about 7270 Hector's dolphins in the South Island (95% confidence interval of 5303-9966) and 111 Maui's dolphins in the North Island (95% confidence interval of 48-252).

47 Hector's dolphins triggered the Nationally Endangered (conservation dependent) category because of status criterion B1 (total population size 1000-5000 mature individuals), and trend criterion B1 (decline of greater than 60% in the total population or habitat area in the last 100 years).

48 MFish agrees that there is uncertainty around the total numbers of dolphins present in New Zealand waters. However, the information presented above represents the best available information. The uncertainty in the information is discussed in more detail below. Regardless, MFish notes that the classification of the animals is not determinative of any decision under the Act. It is one of a number of factors relevant to your decision. In particular, MFish notes that classification is a relevant factor under the MMPA. Under a PMP, species with threatened status should be rebuilt within a period not less than 20 years. While this is not a directly relevant factor to you under the Act, it does provide some context to overall government policy on management of threatened species such as Hector's dolphins.

Population size

Key stakeholder comments

49 Industry submissions generally express concern about uncertainty in information on population size. They suggest there is no robust information available to indicate a decline in population numbers.

50 Environmental groups note that there are a number of published scientific studies that all indicate a decline in population size over time.

Discussion

51 There are no comparative abundance surveys to establish trends in abundance over time but other source make reference to trends in abundance on a species-wide scale:

- a) A series of modelling work in the scientific literature suggests abundance has declined⁵:
 - i) Martien *et al* (1999) estimated that 1970's abundance was between 6936 and 7957 dolphins (*cf* 5000 to 6000 dolphins in 1984-85);
 - ii) Burkhart & Slooten (2003) estimated that 1970's abundance was 8401 dolphins (*cf* 5000 to 6000 dolphins in 1984-85);
 - iii) Slooten (2007) estimated that 1970's abundance was 29316 dolphins (*cf* 7873 dolphins in 2007)⁶.
- b) Pilcher & Baker (2000) and Pilcher (2001, 2002) detected a decline in the genetic diversity of the Maui's dolphin West Coast North Island (WCNI) population and the ECSI Hector's dolphin population that is more consistent with a recent decline in abundance than with other factors like sex bias or loss of populations. There was no evidence of a decline in the genetic diversity of the WCSI and SCSI regional populations although the power to detect evidence for the SCSI population was low because the sample size was small⁷.

52 The modelling work, in particular Slooten (2007), is subject to considerable contest and there is ongoing debate in the scientific community about the validity of the abundance estimates therein. The main focus of the debate is the assumptions necessary for some of the model parameters – especially current population size and the rate of fishing-related mortality. Some scientists argue the modelling work is very sensitive to assumptions about parameters and that strong assumptions are necessary because information about parameters is too uncertain. MFish agrees that the modelling work requires strong assumptions but considers that even if the modelling work fails to represent absolutes (ie, accurate historical abundance estimates) it still corroborates the general trend observed in the other evidence that indicates Hector's and Maui's dolphins have declined from higher levels of abundance.

⁵ Parameters in the modelling work typically include estimates of (i) productivity (ii) current abundance and (iii) estimates of fishing-related mortality.

⁶ Slooten (2007) uses the most recent abundance estimate in her model.

⁷ Researchers examined DNA from museum specimens and living dolphins.

Threats

Key stakeholder comments

53 Industry groups did not consider that the information on the nature and extent of threats provided sufficient information that fishing is the major cause of mortality to dolphins or resulting in any decline to population numbers.

54 Environmental groups note that the DOC sighting catalogue does not represent the full extent of human-induced mortality of dolphins and that gill nets in particular are the greatest threat to Hector's and Maui's dolphins.

Discussion

55 An outline of the full range of threats facing the dolphins is contained in Annex 3. The *nature* of fishing threats is demonstrated through documented mortalities. Set nets, trawlers, and rock lobster potting gear have all resulted in dolphin mortalities.

Nature and extent of effects

56 The *nature* of fishing threats is demonstrated through documented mortalities. However, there is uncertainty about the extent of dolphin–fishery interaction due to the lack of independent monitoring and few incentives to comply with the requirement in the MMPA to report mortalities. Documented mortality is likely to be an underestimate of total mortality.

Table 1: DOC incident database mortality records for Hector's and Maui's dolphin mortalities reported between 1921 and 2008.

Cause of death	Number of deaths
Boat strike	1
Euthanised	1
Harpooned	4
Human interaction – no sign of net entanglement but definite signs of other types of human interaction such as a high degree of mutilation	9
Known entanglement – animal was known (from incident report) to have been entangled and died	112
Natural – cause of death deemed to be from natural causes	20
Not assessed – carcass was not necropsied or recovered, or the cause of death was not assessed (typical of historical mortalities).	90
Not available – necropsy or incident report not available at present.	25
Not determinable – carcass too decomposed for necropsy	76
Possible entanglement – net marks on the body and a mention of the net marks in the incident report; or the pathology report lists probable entanglement as cause of death	54
Possible human interaction – no signs of net entanglement but indications of other types of human interaction such as marks that resemble knife wounds	10
Probable entanglement – net marks on the body and one other definite indication of capture such as mutilation; or the pathology report lists probable entanglement as cause of death	20
Trauma unknown cause – as read from pathology report - trauma, with an unknown cause (ie, could be natural or human-induced)	9
Unknown – cause of death unexplained or not definitive (e.g., "open" diagnosis in pathology report)	25
Total reported mortalities	456

57 There are 112 fishing-related mortalities out of a total 456 reported mortalities. However MFish considers this represents the minimum level of fishing-related mortality because:

- a) The cause of death is only firmly established for 147 of the 456 reported mortalities in the DOC database. Fishing is probably responsible for some of the remaining mortalities where the cause of death is not firmly established. Clinical protocols used in necropsy require very conclusive signs of fishing-related mortality before fishing is recorded as the cause of death. At least 74 other mortalities in the database display evidence of net marks and/or other indications that suggest fishing could be responsible for death (Table 1). In addition, the DOC database is probably better informed for more recent years as older reported mortalities were not typically necropsied.
- b) Reported mortality is likely to be an underestimate of total mortality because:
 - i) There is a lack of independent monitoring.
 - ii) There are few incentives to comply with the requirement in the MMPA to report mortalities.

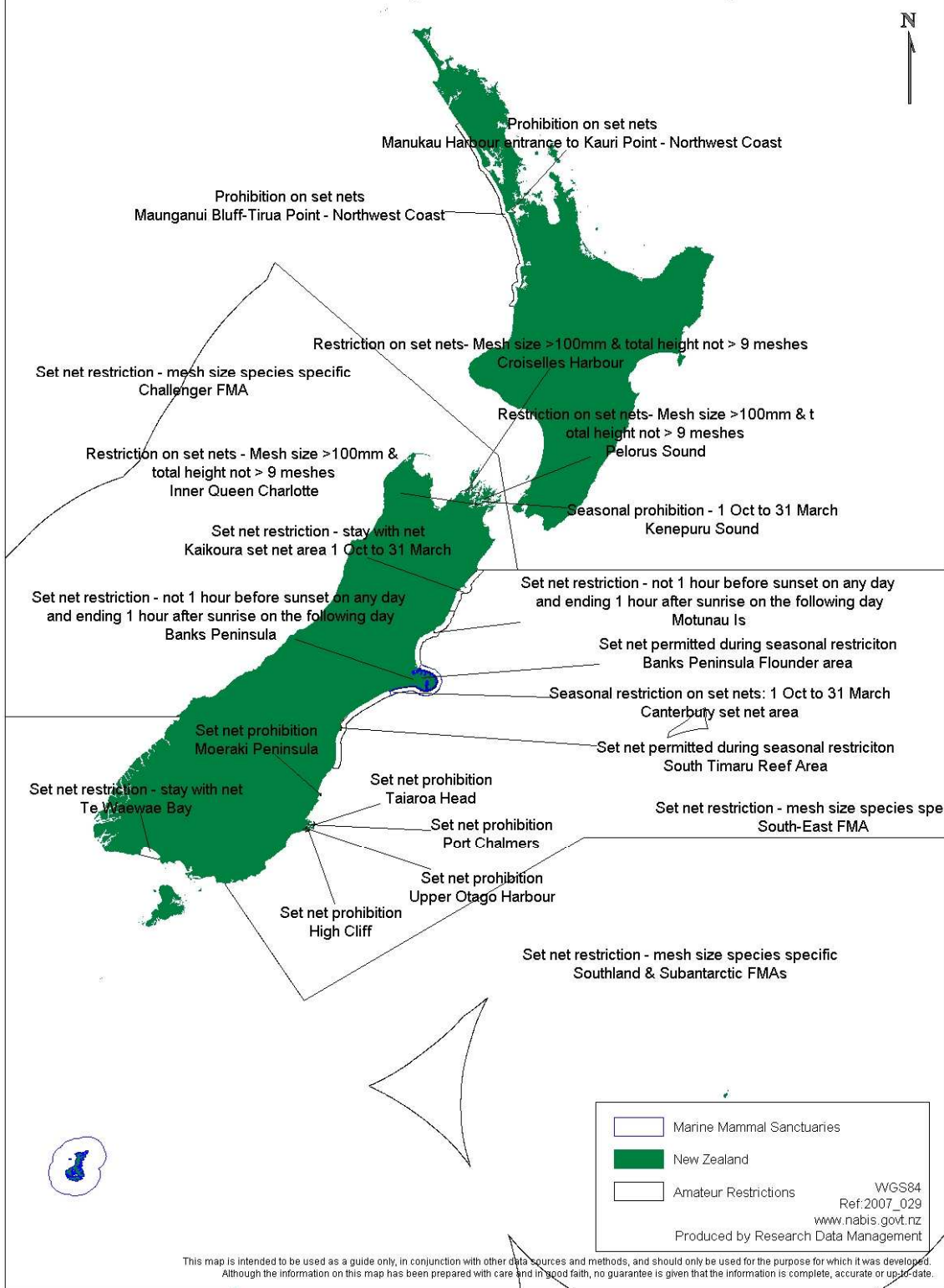
- iii) Mortalities go unreported because they are never detected (such as dolphins killed in lost nets).
- c) Anecdotal information also suggests actual fishing-related mortalities may be higher than reported:
 - i) Dawson (1991) interviewed fishers on the ECSI and estimated from the interviews that many fishing-related mortalities were not included on the DOC database (i.e. not reported).
 - ii) A dolphin researcher who has necropsied dolphins notes that conclusive signs of set net entanglement are not always evident, even on known fishing-relation mortalities.
 - iii) The DOC sighting database includes some fishing-related Maui's dolphin mortalities not captured by the incident database.

Current management

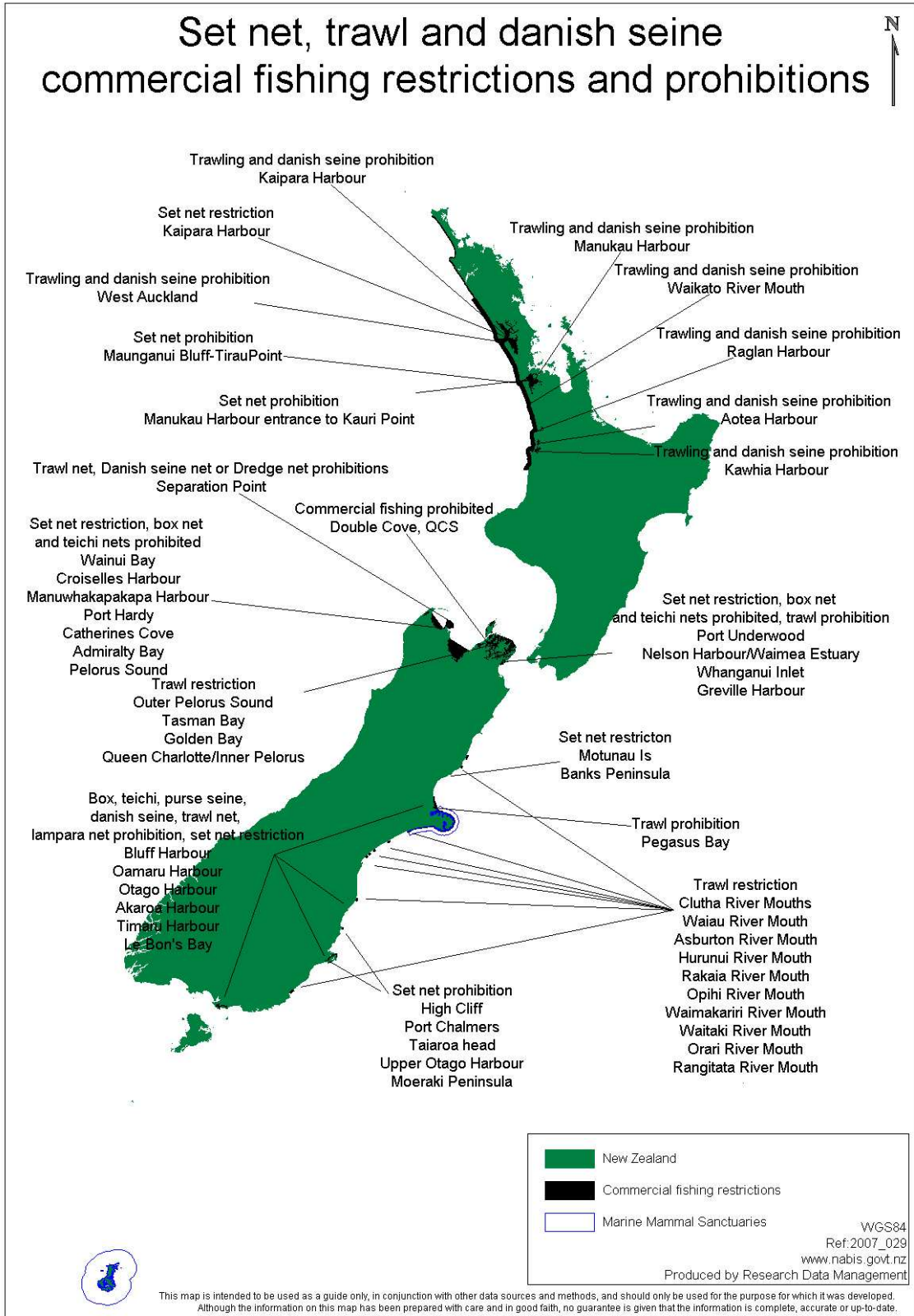
Fishing threats

58 There are a number of mandatory measures in place around New Zealand's coastline that mitigate the impacts of fishing on Hector's dolphins. These restrictions are illustrated in the maps below. Further detail on current fishing-related management measures is provided in the regional sections of this document.

Amateur set net fishing restrictions and prohibitions



Map 2: Current mandatory amateur set net restrictions and prohibitions



Map 3: Current mandatory commercial set net, trawl and Danish seine restrictions and prohibitions

Effectiveness of current management

Key stakeholder comments

59 A number of industry submissions have commented that existing measures are working. In particular, industry consider the voluntary code of practice in place for the ECSI Hector's dolphin population is effective and that regulatory measures put in place on the WCNI for Maui's dolphins in 2003 are effective in managing risk. A large number of submissions were received from environmental groups and the general public that do not agree with this view and believe that current measures are not effective or insufficient to manage risk.

Discussion

60 Existing measures are typically implemented at the population level so it is appropriate for you to consider the effectiveness of existing measures at this scale. Signals that existing measures are adequate may include a reduction in documented fishing-related mortalities, or an increase in the size of the dolphin population. Conversely, an increase in documented fishing-related mortalities and a declining dolphin population may signal that existing measures are not adequate.

61 There is uncertainty about the effectiveness of existing and proposed measures in managing the effects of fishing-related mortality on the Hector's dolphin. Uncertainty about the effectiveness of existing measures relates to low levels of independent monitoring that makes it difficult to establish the level of interaction between fisheries and dolphins under status quo management. Lack of comparative population surveys also makes it difficult to detect changes in population size in response to existing measures.

62 Limited monitoring also results in uncertainty around catch rates of dolphins in fishing gear (including any geographical and seasonal variations in catch rates). Consequently the effectiveness of proposed area and seasonal restrictions also cannot be determined with certainty.

63 The absence of documented fishing-related dolphin mortalities in the presence of current measures does not necessarily equate to absence of fishing-related mortalities. Documented fishing-related mortality is likely to underestimate total fishing-related mortality. In addition, information on the status of, and trends in, the dolphin populations is uncertain and populations are unlikely to have responded to the existing measures to the extent that a response is detectable, in the time elapsed since these measures were introduced.

64 A mix of spatial and temporal controls are in place to mitigate the impacts of fishing on specific populations of Hector's dolphins.

65 Use of set nets was banned from the West Coast North Island (WCNI) in 2003, from an area just north of the Kaipara Harbour through to an area just north of New Plymouth. Harbours (with the exception of the entrance to the Manakau Harbour) within this area were not included in the set net prohibition. The set net prohibition area covered the known confirmed range of Maui's dolphins. The risk of fishing interaction with dolphins has been significantly reduced as a result of these measures, as evidenced by the lack of confirmed incidents of fishing-related mortality of Maui's dolphins recorded since the measures were introduced in 2003. Nonetheless scientific and sightings information suggests that dolphins rarely go beyond the existing closed area. The likelihood of dolphins moving beyond these closed areas varies depending on the area (harbours,

the Taranaki coast or further offshore).

66 There have been 36 confirmed incidents of fishing-related mortality of Hector's dolphins from the ECSI population since the Akaroa MMS was introduced in 1988.

67 No mitigation measures are in place for the West Coast South Island population.

68 A risk analysis for Hector's and Maui's dolphins commissioned by MFish (project IPA2006/05) was presented by Nick Davies to the Aquatic Environment Working Group (AEWG) on 17 September 2007. Before this meeting, a Hector's Dolphin Technical Working Group (HD-TWG) had met several times to guide the development of the component models.

69 A memorandum attached as Annex 1 to the New Information section (Appendix 1) of this paper outlines the report from the Chair of the AEWG in detail. In summary, the AEWG could not agree whether or not it was reasonable to adopt all the necessary assumptions of the component models of the risk analysis for all the populations and, therefore, whether the risk analysis should be used to advise managers. Some members felt that the necessary assumptions had been developed in consultation with a technical working group of well-informed specialists (HD-TWG) and that they provided the best possible framework for analysing the very sparse data. They argued that the risk analysis could be used to provide qualitative guidance to managers on risks of the existing management framework. Others strongly disagreed, saying the assumptions were essentially arbitrary and the results must not be taken at face value. One argued that the modelling assumptions were so numerous and untenable that the results should not be used to guide management in any way.

70 However, having been involved in three meetings of HD-TWG and the AEWG discussion, and having read various versions of the draft report, the Chair of AEWG, was of the opinion that the work can provide qualitative guidance as a risk assessment, but not reliable quantitative predictions of the actual performance of different management options. Although highly uncertain, and based on the assumptions of the model, the risk assessment suggested that populations were likely to decline under status quo management.

71 MFish undertook consultation on this new information with stakeholders. Submissions indicated polarised views between users affected by the proposed measures and environmental groups. In general the fishing industry was very concerned about the process by which consultation was undertaken. They considered the purpose of the consultation process was unclear and timeframe too short to allow meaningful discussion. However, their submissions were very clear that they did not consider the modelling work could be used for quantitative or qualitative analysis and should not be given any weight in your decision making process.

72 Environmental groups considered the results of the modelling important, and although noting the uncertainty, considered that it provided further evidence of risk to the Hector's and Maui's population that requires you to take action.

73 MFish notes there is considerable uncertainty in the modelling work as outlined by the Chair of the AEWG. Given the uncertainty the results should be given lesser weight in the context of other scientific information available. As such they could be taken into account as one of the factors providing context (along with other scientific modelling work and anecdotal information) to consider whether or not it is necessary to implement new or additional measures to avoid, remedy or mitigate fishing-related mortality, rather than being a determinative factor.

74 MFish considers that monitoring interactions with relatively rare marine mammals spread across large areas of coastline will always contain elements of uncertainty. While quantitative analysis of the effectiveness of current measures is not available, some conclusions can be drawn about the effectiveness of these measures using best available information. This analysis is outlined above and discussed in considerable detail in each of the regional sections later in this paper. As with all areas of fisheries management, further information could be sought to improve the basis of decision making, however MFish does not consider you are prevented from making a decision now, based on best available information.

Impact of fishing-related mortalities

Key stakeholder comments

75 Industry groups considered that the information did not demonstrate a clear effect of fishing-related mortality on the dolphin populations sufficient to warrant the implementation of new or additional measures. The majority of submitters pointed to considerable uncertainty in information in the assessment of impact of mortalities. They did not consider there was clear evidence of declines in population numbers that could be attributed to fishing.

76 Environmental groups and other submitters considered there was clear evidence of declines in dolphin population numbers and that fishing (gill netting in particular) is the greatest known cause of human-induced mortality of dolphins.

Discussion

77 The effect of fishing-related mortality on the South Island Hector's populations is uncertain because the nature and extent of fishing-related mortality is poorly estimated, as is the trend in the populations and species numbers overall. As noted, there is some evidence of overall population decline at a species level as well as within individual regional populations. The extent of this decline and how much of the decline, if any, can be attributed to the effects of fishing is unknown. If the population is declining then it is intuitive that fishing-related mortality must be a contributing factor as it is the greatest cause of human-induced mortality to the dolphins overall.

78 In general terms, the effect of fishing varies between regional populations due to differing levels of fishing effort, mortality and population size. The effect of fishing-related mortality is likely to be greatest on populations that are small because the level of mortality they can sustain will be less. However, again, the extent of this risk depends on the true level of mortality and the size of the population. For the South Island populations the smallest number of dolphins is found on the SCSi (population size uncertain but several hundred animals at the most) followed by the ECSi and WCSi populations.

79 Despite uncertainty in population size Potential Biological Removal estimates can provide some quantitative context to the amount of human-induced mortality a population can sustain while still meeting the target of the PBR Recovery Rate Goal methodology, as applied here. Much of the uncertainty surrounding Hector's dolphin productivity rate and recovery factors are considered, resulting in the range of values provided.

80 The PBR, as originally developed, calculates a maximum number of animals (not including natural mortality) which may be removed from a marine mammal stock while allowing the stock to reach or maintain its optimum population size (see Appendix 3). It was developed by the US National Marine Fisheries Service in response to the US Marine Mammal Protection Act and was

never intended to close a fishery; rather, it provides a trigger value, after which a ‘Take Reduction’ team was convened to identify ways to reduce human-induced mortalities to a level below the calculated PBR value.

81 Like all such estimators, the PBR is dependent on the input values. These are either calculated when sufficient data are available, or use a default value in the absence of data.

82 The PBR values calculated for each population are for the population as a whole and do not take into account any fragmentation of the populations into independent stocks.

83 The PBR is intended to be an indicator only of the number of human-induced Hector’s and Maui’s dolphin mortalities each of the four regional populations can sustain; it is not intended to provide an absolute value of the number of allowable human-induced mortalities.

84 MFish agree with SeaFIC that the PBR methodology is conservative. However given available data it forms the best way to quantify risk to the various populations from human-induced mortality. The PBR figures should be used as a guide to help assess risk rather than a target for management purposes. The PBR estimates suggest that annually between two and four dolphins can be killed on the ECSI, less than one on SCSi, 7-38 on the WCSi and one every five years on the WCNI.

85 Scientists have modeled dolphin populations to estimate abundance trends, focusing primarily on the past, present and future impacts of commercial set netting. In general, findings have suggested that the abundance of Hector’s and Maui’s dolphins has declined due to fishing activity. Information suggests that the South Island Hector’s populations may continue to decline under current management⁸. However, difficulties with estimating entanglement rates and uncertainty in abundance estimates (i.e. lack of comparative population surveys) prohibit firm conclusions about the effects of fishing-related mortality on the size of the dolphin population nationally.

Need for action

86 Based on information on threats, population size, trends in population, effect of mortalities from fishing, effectiveness of current measures, you need to determine whether there is a need to act.

Stakeholder views

87 Stakeholders have widely differing views on the need to act. The fishing industry and other users likely to be impacted by the proposed measures are of the view that there is insufficient information to define a problem which requires urgent management action. Environmental groups consider there is sufficient information on declines in the population sizes and enough information on the contribution of fishing as a threat to dolphins, to warrant immediate management action.

Discussion

88 In general terms the effect of fishing varies among populations due to levels of fishing effort, mortality, population size and existing protection. The effect of fishing-related mortality is likely to be greatest on populations that are small because the level of mortality they can sustain

⁸ For example, Slooten, E. (2007). Conservation Management in the face of uncertainty: Effectiveness of four options for managing Hector’s dolphin bycatch. *Endangered Species Research*: 3, pp 169-179.

will be less. However, again, the extent of this risk depends on the true level of mortality and the size of the population. For the South Island populations the smallest population is the SCSI Hector's dolphins (population size uncertain but several hundred animals at the most) followed by the ECSI and WCSI populations.

89 The impetus to consider whether the status quo level of risk of fishing-related mortality is appropriate stems from:

- a) biological characteristics, population status and trends of Hector's and Maui's dolphins;
- b) increased public awareness and general societal trends toward being more risk-averse in relation to human impacts on vulnerable species;
- c) government concern over the status and trends of Hector's and Maui's dolphins including the overall desire to rebuild threatened species;
- d) information (scientific and anecdotal) indicating that fishing is the biggest known cause of human-induced mortality of Hector's and Maui's dolphins.

90 Without a complete ban on fishing activity using gill or trawl nets, some risk or residual risk (after implementation of specific measures to mitigate fishing-related mortality) of fishing-related mortality exists for each of the Hector's dolphin populations. The different status of the populations means the degree of risk varies among regions. It is for you to determine what degree of risk you consider acceptable based on best available information. The Act does not require you to reduce the risk of fisheries interactions to zero and you must consider the impact from fishing on the regional and national populations as a whole rather than the impact on individual dolphins. You need to decide what is necessary and in doing so allow for the utilisation of fisheries resources, where possible, having regard to the conservation of the protected species.

91 You should implement measures if you consider them necessary to avoid, remedy, or mitigate the effect of fishing-related mortality, based on best available information. MFish notes that this does not imply a balance is required between sustainability and utilisation for protected species such as Maui's and Hector's dolphins. You can restrict utilisation but only if you are confident those measures are necessary to avoid, remedy, or mitigate the effect of fishing-related mortality on dolphins.

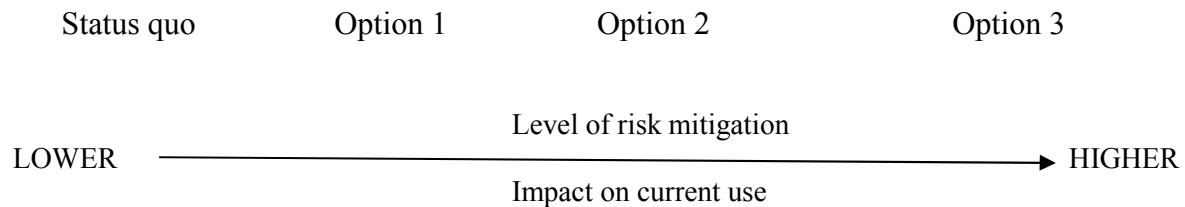
Options

92 The nature and extent of fishing-related threats varies among each of the four populations, as do the impacts on users from the proposed measures. MFish has developed specific analysis at a regional population level around the nature and extent of fishing-related impacts, and options for managing those impacts. Treatment of fishing threats to each of the four populations should be broadly consistent with any overall strategy for the species. This is important to ensure biological diversity is maintained, but also because measures for each of the populations can contribute to any overarching approach for the whole Hector's dolphin species.

93 As such, while options have been developed for each of the four populations, you will also be making a decision at a species level in considering impacts of measures across the populations.

94 Options have been developed to address each threat (fishing method) that has been

identified as creating a risk of fishing-related mortality. There are three broad mitigation options for each threat. Only two options are provided for drift netting, given the specific nature of problem (very localised use). The options are categorised by their ability to reduce the risk of fishing-related mortality caused by each threat, and the cost to fishers (as illustrated below). The nature and extent of each threat varies between method and among populations. The range of options forms a matrix.



95 You are free to choose a mix of options within populations and across the species as a whole but should, given the uncertainty in information on nature and extent of risk from fishing, carefully consider the impact on utilisation of harvested species when determining the appropriate options. MFish notes that depending on the nature and extent of the threat from different fishing methods to a given population, you could choose a higher level of risk mitigation (e.g. Options 2 or 3) for methods that pose the highest threat, but choose a lower level of risk mitigation for methods that pose a lesser threat to the national dolphin population. The level of mitigation that you consider necessary may vary among populations and fishing threats, depending on the particular circumstances of the region and the need to ensure viability (including biological diversity) of the species as a whole.

96 MFish’s preference is that the selected measures should be applied consistently throughout the range of each dolphin population to ensure their effectiveness. This will also aid compliance both in terms of enforcement and cost.

Cost

Key stakeholder comments

97 The fishing industry estimates that the overall cost of the proposals could be \$88 million, based on the implementation of Option 3 (set net and trawl prohibitions). Industry considers the cost of banning certain types of fishing activity far outweighs any known benefit to dolphins.

98 Environmental groups and some other submitters noted that there are unquantified (by MFish) benefits associated with increased dolphin numbers. They also note that the costs of the proposed measures for gill net fishers are a small percentage (less than 1%) of the overall return from the fishing industry.

Discussion

99 Table 2: Summary of economic impacts of options from draft TMP – MFish estimate

	Option 1 (\$ million)	Option 2⁹ (\$ million)	Option 3 (\$ million)
Harvest Income	0.1	3.8-4.8	8.9
Other Income	0.8	21.9-28.6	50.9
Total Income	\$0.9	\$25.7-\$33.4	\$59.8
Quota Value	\$0.6	\$26.4-\$31.6	\$65.9

100 Submitters have provided considerable information on the costs of the proposed measures. In addition, MFish commissioned an independent economic analysis of impacts and undertook analysis of economic information supplied by submitters. Based on further analysis at a species level, the cost of proposed measures is as outlined above. MFish goes into significant detail about the costs of the proposed measures in the regional sections of this document.

⁹ Cost range due to difference in impact between 2 and 4nm closure in the South Island.

ANNEX ONE: LEGISLATION

101 The following statutory criteria are relevant to the Minister of Fisheries (the Minister) when he considers the issues and options outlined in this FAP.

Fishing-related mortality of marine mammals – section 15

102 Section 15 of the FA96 gives the Minister a discretion to take measures to avoid remedy or mitigate fishing-related mortality of marine mammals or other wildlife that is a protected species.

103 Section 2 of the FA96 defines protected species to mean: any marine wildlife as defined in section 2 of the Wildlife Act 1953 that is absolutely protected under section 3 of that Act; and any marine mammal as defined in section 2(1) of the Marine Mammals Protection Act 1978 (MMPA). All marine mammals (as defined in the MMPA) are "protected" for the purposes of section 15 of the FA96. Therefore, Hector's Dolphins are a protected species.

104 Section 15(1) of the FA96 provides for mitigation measures to be taken when a population management plan (PMP) has been established for the protected species under the MMPA. There is no PMP for Hector's Dolphins.

105 In the absence of a PMP section 15(2) of the FA96 empowers the Minister (after consultation with the Minister of Conservation) to take such measures that he considers necessary to avoid remedy or mitigate the effect of fishing-related mortality on Hector's Dolphins.

106 Section 15(4) of the FA96 empowers the Minister to recommend the making of regulations under section 298 of the FA96 to implement measures that he has decided are necessary under section 15(2).

Sustainability measures – Part III

107 The FAP contains proposals to implement sustainability measures. 'Sustainability measure' is defined in section 2 as any measure set or varied under Part III of the FA96 for the purpose of ensuring sustainability. Section 15(2) is contained in Part III and is therefore a sustainability measure.

108 Sustainability measures also include measures taken under section 11(1) that allow the Minister to set or vary sustainability measures for stocks or areas. Sustainability measures may relate to the fishing methods by which any fish, aquatic life, or seaweed of any stock may be taken or that may be used in any area.

109 Section 11 provides for the Minister to implement sustainability measures set under section 11(1), by notice in the Gazette or by recommending the making of regulations under s 298 of the FA96. Section 11 sustainability measures may only be imposed after having taken into account the various statutory considerations set out in section 11.

110 Section 12 of the FA96 requires that consultation be undertaken before taking any measures under either section 15(2) or section 11(1). Consultation must be undertaken with such persons or organisations as the Minister considers are representative of those classes of persons having an interest in the stock or the effects of fishing on the aquatic environment in the area concerned, including Maori, environmental, commercial, and recreational interests. There must also be provision for the input and participation of tangata whenua and particular regard to Kaitiakitanga.

Purpose of the Fisheries Act 1996

111 Any measures taken under the FA96 must be consistent with the purpose of the Act. The purpose (section 8) of the FA96 is to provide for the utilisation of fisheries resources while ensuring sustainability.

112 ‘Utilisation’ means conserving, using, enhancing, and developing fisheries resources to enable people to provide for their social, economic, and cultural wellbeing.

113 ‘Ensuring sustainability’ is defined as “maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations” and “avoiding, remedying or mitigating any adverse effect of fishing on the aquatic environment”.

114 ‘Fisheries resources’ is defined in section 2 of the FA96 as any one or more stock or species of fish, aquatic life, or seaweed and therefore includes Hector’s Dolphins.

115 ‘Effect’ is also defined in section 2 of the FA96 and means the direct or indirect effect of fishing. It includes: Any positive or adverse effect; and any temporary or permanent effect; and any past, present, or future effect; and any cumulative effect which arises over time or in combination with other effects regardless of the scale, intensity, duration, or frequency of the effect. It also includes: any potential effect of high probability; and any potential effect of low probability which has a high potential impact.

116 The Courts have given further consideration to the purpose of the the FA96. In particular the courts have considered the relationship between utilisation and sustainability. In *Squid Fishery Management Co v Minister of Fisheries*,¹⁰ the Court of Appeal noted that the Minister was required to balance utilisation objectives and conservation values.

117 In ‘the Kahawai case’¹¹, the High Court noted:

“...there is no hierarchy between the two objectives of providing for utilisation while ensuring sustainability and that utilisation should be allowed to the extent that it is sustainable. I agree, though, ... that on a plain reading of s 8 the bottom line is sustainability. That must be the Minister’s ultimate objective. Without it, there will eventually be no utilisation.”

118 MFish considers, that in providing for the utilisation of a fisheries resource enabling people to provide for their social, economic and cultural wellbeing is a relevant consideration when setting a sustainability measure. It is up to the Minister to determine how much weight to give to wellbeing in making his overall decision.

119 As more restrictive sustainability measures are likely to have a greater impact on utilisation, the selection of the most appropriate suite of measures requires the Minister to weight the benefits of more effective mitigation against the costs that are likely to be associated with those measures.

¹⁰ *Squid Fishery Management Co v Minister of Fisheries*, (13 July 2004, CA39/04).

¹¹ *NZRFC & Ors v Minister of Fisheries & Ors*, High Court Auckland, 21 March 2007.

Environmental principles

120 Section 9 of the FA96 contains environmental principles that the Minister must take into account when making a decision under the FA96, relating to the utilisation of fisheries resources or ensuring sustainability. These principles are:

- a) Associated or dependent species should be maintained above a level that ensures their long-term viability;
- b) Biological diversity of the aquatic environment should be maintained;
- c) Habitat of particular significance for fisheries management should be protected.

121 ‘Associated or dependent species’ is defined in section 2 of the FA96 as any non-harvested species taken or otherwise affected by the taking of any harvested species. ‘Harvested species’ is defined as any fish aquatic life, or seaweed that may for the time being be taken with lawful authority. MFish considers that Hector’s dolphins are affected by the taking of harvested species; therefore Hector’s dolphins are an associated or dependent species as defined in the FA96.

122 ‘Biological diversity’ is defined in section 2 of the FA96 as meaning the variability among living organisms, including diversity within species, between species and of ecosystems. In relation to any decision to avoid, remedy or mitigate the effects of fishing on Hector’s dolphins, MFish considers the Minister should take account of maintaining:

- a) The Hector’s dolphin species above a level that ensures long-term viability; and
- b) The genetic diversity within the species, including the viability of the four genetically distinct populations, in the aquatic environment.

Information principles

123 Under s 10 of the FA96, decision makers are required to take into account four information principles. The Minister should take into account the best available information; consider any uncertainty in the information available; be cautious when information is uncertain, unreliable, or inadequate; and not use the absence of, or any uncertainty in, any information as a reason for postponing or failing to take any measure to achieve the purpose of the Act.

124 ‘Best available information’ is defined in section 2 of the FA96 as “the best information that, in the particular circumstances, is available without unreasonable, cost, effort, or time.” As discussed throughout the FAP there is limited information on some issues, such as the effectiveness of the mitigation measures that are currently in place. However, MFish considers that it has used the best available information in developing the advice in the FAP.

125 As discussed in the FAP there is also uncertainty in the information. However, uncertainty in the information should not be used as a reason for postponing or failing to take measures to achieve the purpose of the Act.

International obligations and the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992

126 New Zealand is party to a number of international conventions. These conventions generally require measures to be taken to protect and conserve and mitigate fishing related

mortalities endangered species. These proposals are consistent with these obligations.

127 The proposals in the draft TMP are not inconsistent with the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992. The measures proposed are sustainability measures under the Fisheries Act. Application of sustainability measures applies generically to all commercial fishers¹².

¹² *NZ Fishing Industry Association & Ors v Minister of Fisheries & Ors* (22 July 1997 CA 83/97) at page 20

ANNEX TWO: SUMMARY OF SUBMISSIONS AND MFISH COMMENT

Consultation

128 Submissions closed on 24 October 2007. We received approximately 2429 submissions – the breakdown as follows:

- a) commercial fishers and related industry (399);
- b) recreational fishers (655);
- c) iwi and hapu groups (29);
- d) general public (1303)¹³;
- e) tourism groups (12);
- f) environmental organisations (31).

129 Submissions raise three main generic issues:

- a) uncertainty in information;
- b) cost of measures;
- c) general process issues.

130 Fishing interests (commercial and non-commercial) are concerned that there is insufficient information to take action and that further research should be undertaken on population size and distribution before action is taken. They consider there are no fishing related threats to Maui's dolphins that's are not already being actively managed, and none that need urgent management for Hector's dolphins.

131 Environmental groups note that Hector's and Maui's dolphins are one of the most researched cetaceans in the world. They consider there is sufficient information to take action now to reduce the impact of human-induced mortality, in particular addressing the threat posed by fishing.

132 The fishing industry estimates that the overall cost of the proposals could be \$88 million, based on implementation of Option 3 (set net and trawl prohibitions). Industry considers the cost of banning certain types of fishing activity far outweighs any known benefit to dolphins.

133 The fishing industry in particular are concerned about some aspects of the process that has been used to develop the TMP. At the time that submissions were due they had not had an opportunity to review the Aranovus socio-economic analysis or the NIWA statistical modelling work.

¹³ Also includes non-fishing natural resource organisations / public sector agencies / schools and universities.

134 A detailed response to matters raised in submissions is included in the generic issues section attached as Annex 2 and the regional sections.

Overall goal of the TMP

135 **F&B** suggest adding the following objective:

In order to maintain Hector's dolphins above a level that ensures their long term viability, and the recovery of the species throughout its natural range, threats to Hector's and Maui's dolphins should be managed to allow the species to achieve non-threatened status as soon as practicable, and in any event within a period not exceeding 20 years (page 1).

136 **WWF** states that the vision, goals and objectives must relate to timeframes and measurable targets and that these should be included in the FAP. **WWF** call for the following time frames and targets:

Hectors dolphins should be managed for:

- i) recovery to their natural historic range and abundance;
- ii) recovery to 1970 abundance and range by 2055; and
- iii) recovery to non-threatened status by 2028.

137 **WWF** states that protection measures must be long term and visionary, focusing on the survival and recovery of the species to its natural and historic abundance and distribution. They state that the government must recognise the importance of Hector's and Maui's dolphins to other sectors of the community and the economic benefits other than fishing interests, through an assessment of costs and benefits.

138 **WWF** calls for the management objectives and goals in the document to reflect the importance of recovery to the dolphin's natural range and abundance as a goal for the species (page 10).

139 [REDACTED] support the objective to manage Hector's and Maui's dolphins for their long term viability and recovery throughout their range (page 2).

140 **Te Tau Ihu** considers that the draft TMP does not address the issue of survival of Hector's and Maui's dolphins, or suggest an alternative to the draft TMP should it fail. There is no actual analysis on how successful the draft TMP will be and whether the options provided are based on sound scientific evidence (page 3).

MFish response

141 The Act does not direct you to rebuild stocks of protected species which are above a level that will ensure their long-term viability. However, discretion to do so is within the bounds of the purpose and principles of the Act (specifically s.15). This means that you should take into account the impact on utilisation of any measures you consider necessary to manage the impacts of fishing-related mortality on the species.

142 With such broad discretion it is not necessary for you to determine specific objectives for management.

143 However, MFish agree that from a policy perspective the certainty provided by an output-control driven management framework would be ideal. It would be desirable to have information on historical population levels and be able to describe changes in population size over time. To be a useful basis for management decisions, objectives must also be meaningful. There is considerable uncertainty around historical population sizes and range. There is considerable uncertainty around the population estimates referred to by WWF. On balance MFish considers there is simply insufficient information to determine a specific quantitative and time bound rebuild strategy for Hector's and Maui's dolphins with any certainty. There are also issues addressing the cost associated with a robust monitoring framework to track progress without imposing significant cost on fishers.

144 Given existing levels of information, MFish and DOC consider the objectives and vision statement of the TMP allow the Minister sufficient discretion to make appropriate management decisions within the construct of the Act, to manage the impacts of fishing-related mortality. MFish and DOC envisage the TMP as a "living document" which can be amended in the future as a result of new information, allowing the development of more specific objectives or changes to government policy for protected species.

Problem Definition

145 **TOKM** states that the TMP lacks a clear problem definition and that the implied intention is to ensure that human-induced mortalities do not exceed PBR values for each population. **TOKM** submits that the critical test of whether the measures are successful is to know whether the abundance of each dolphin population is increasing or decreasing over time.

Abundance

146 **SeaFIC** submits that the threat classification for Hector's dolphins cannot be justified in terms of the best available information and should be reviewed. The draft TMP provides the New Zealand and IUCN classifications for Hector's and Maui's dolphins but does not provide any justification for those classifications. Therefore, no assessment of how to reduce their threat status can be deduced. **SeaFIC** submits that the New Zealand classification of Hector's dolphins is based on flawed modelling and was not consulted on by DOC, and that the IUCN classification should be amended based on the latest information.

147 **Sanford** believes that the decision to separate the Hector's and Maui's dolphin populations should be peer-reviewed, suggesting that they should be managed as a single population.

148 **TOKM** acknowledges that Hector's and Maui's dolphins are genetically and geographically separate sub-species living in totally different marine environments.

149 **SeaFIC** submits that the lack of good information on population trends is an indictment on central government and it is unfortunate that the fundamental starting point of establishing whether dolphins are really threatened cannot be undertaken.

150 **SeaFIC** and **Challenger Finfish** state that at least two of the four populations (ECSI and WCSI) appear to be either stable or increasing, based on the genetic analysis presented in the draft TMP. Furthermore, they state that the evidence suggests that the South Coast numbers are

increasing. **Sanford** refutes statements about declining populations, stating that historically high numbers have been generated through flawed statistical extrapolation.

151 **SeaFIC** highlights the healthy population of Hector's dolphins and evidence from a boat survey in 1985 that Maui's dolphin numbers have not declined since that time.

152 **AFL** is very disappointed that the draft TMP does not contain accurate estimates of population levels or recent trends.

153 [REDACTED] and the **Cetacean Specialist Group of the IUCN** state that several published and peer-reviewed risk analyses indicate that the species is declining in almost all of its current ranges.

154 **Sanford** submits that the assumptions presented in the draft TMP, that dolphin populations are declining and that this is due to commercial fishing practices, are not supported by robust scientific evidence.

155 **TCFA** notes that it is unknown whether the Maui's dolphin population is increasing or decreasing (para 5).

156 **SeaFIC** does not consider that the status of Hector's dolphin as being one of the world's rarest is a relevant factor in the decision-making process. Similarly, **Treaty Tribes Coalition** and **SeaFIC** consider that widespread public concern might be a valid reason for making a political decision, but it is simply irrelevant to the question of whether drastic measures are required in order to ensure the sustainability or survival of a marine species.

157 **SE Finfish** states that the draft TMP does not source any of the so-called "current best abundance estimates", noting that all estimates in the draft TMP are very old and many (ECSI, SCSi) have relied on outdated boat-based surveys.

158 **Quality Equipment** notes that the overwhelming feedback they get from a broad spectrum of marine users is that they now see more Hector's dolphins than ever before (page 2).

159 **F&B** note that Hector's and Maui's dolphins were once much more common around New Zealand's coasts.

MFish response

160 The most recent abundance estimate for the Maui's dolphin is 111 (95% confidence limit 48 – 252) and for the Hector's dolphin around the South Island is 7270 (coefficient of variation 0.16). Previous abundance estimates are:

- a) 3408;
- b) 5000 to 6000.

161 The most recent abundance estimate does not represent an increase in abundance since earlier estimates. The surveys are not comparable because the survey techniques were different. The difference in abundance between the 1984-85 and 1997-2004 surveys is mostly attributable to a larger abundance estimate for the WCSi population in the latter survey. The researchers argue that the aerial technique they used on the WCSi in the latter survey was probably more reliable than the earlier boat survey for that region.

162 There are no comparative abundance surveys to establish trends in abundance over time but other sources make reference to trends in abundance on a species-wide scale:

- a) A series of modelling work in the scientific literature suggests abundance has declined:
 - i) Martien *et al* (1999) estimated that 1970's abundance was between 6936 and 7957 dolphins (*cf* 5000 to 6000 dolphins in 1984-85);
 - ii) Burkhart & Slooten (2003) estimated that 1970's abundance was 8401 dolphins (*cf* 5000 to 6000 dolphins in 1984-85);
 - iii) Slooten (2007) estimated that 1970's abundance was 29316 dolphins (*cf* 7873 dolphins in 2007).
- b) Pilcher & Baker (2000) and Pilcher (2001, 2002) detected a decline in the genetic diversity of the Maui's dolphin (WCNI) population and the ECSI population that is more consistent with a recent decline in abundance than with other factors like sex bias or loss of populations. There was no evidence of a decline in the genetic diversity of the WCSI and SCSi regional populations although the power to detect evidence for the SCSi population was low because the sample size was small.

163 The modelling work, in particular Slooten (2007), is subject to considerable contest and there is ongoing debate in the scientific community about the validity of the abundance estimates therein. The main focus of the debate is the assumptions necessary for some of the model parameters – especially current population size and the rate of fishing-related mortality. Some scientists argue the modelling work is very sensitive to assumptions about parameters and that strong assumptions are necessary because information about parameters is too uncertain. MFish agrees that the modelling work requires strong assumptions but considers that even if the modelling work fails to represent absolutes (ie, accurate historical abundance estimates) it still corroborates the general trend observed in the other pieces of evidence, that indicates Hector's and Maui's dolphins have declined from higher levels of abundance.

164 In the case of the Maui's dolphin population no submitters have questioned the estimations. There seems to be general agreement that whatever the actual number may be, the population is small.

Distribution

165 [REDACTED] note that according to historical records and beach cast specimens, the natural range to the dolphins extends much further than the areas shown on the maps in the draft TMP (page 2).

166 TCFA states that DOC and MFish have not asked all of the local commercial fishers whether they have seen a Hector's or Maui's dolphin in the areas that they are thought to range (para 3).

MFish response

167 There is a considerable amount of information available on distribution from scientific study and anecdotal sightings information. Fishers were free to provide comment on the TMP outline of distribution if they were concerned about the information presented. Specific issues related to distribution are discussed in the regional sections.

Threats

168 [REDACTED] state they are concerned about the impacts of all human-induced activities on the species.

169 **SeaFIC** rejects the concept of ‘treatability’ as a prioritisation tool for threats. The impact of a threat is the only dimension that should be considered as it is senseless to address easily treated but insignificant threats ahead of difficult, but major, threats. **SeaFIC** submits that Ministers need to know that Maui’s dolphins may become extinct even if all human-induced mortalities are avoided, due to stochastic effects on the very small population size. Ministers’ decisions may therefore have no benefit at all to the viability of Maui’s dolphins.

MFish response

170 All threats have been identified and characterised by the expert panel involved in examining threats as part of the development of the TMP. It seems entirely logical for government to seek to manage those threats that it has some control over. The degree to which it is necessary to manage those threats will be a product of the level of mortality resulting from that threat to the population; the impact of that mortality on the population; and the effectiveness of any mitigation measures. Scientific information indicates that while species with low population numbers are at greater risk from environmental effects, there is no evidence to suggest that any population has become unviable.

Fishing-related threats

171 **SeaFIC** is concerned by repeated claims that entanglement poses the greatest risk of human-induced mortality to dolphins and considers the incident database to be unreliable and dishonest.

172 **SeaFIC**, supported by **Sanford**, **AFL** and **NZFCF**, submits that mortalities attributed to fishing are low, with none for Maui’s dolphins since restrictions were in place in 2003, none for the SCSI, and only occasional mortalities for ECSI and WCSI. These mortality levels are well below any triggers for concern, even taking into account potential under-reporting.

173 **Challenger Finfish** submits that the draft TMP does not provide evidence of a decline in dolphin populations and does not identify a link between fishing-related deaths and any decline for any population. While **Challenger Finfish** acknowledges that determining whether to protect dolphin populations may have emotive characteristics, determining *how* to do so cannot.

174 **Challenger Finfish** submits that the draft TMP errs towards non-reporting as being the most likely cause of an absence of reported dolphin deaths, rather than the alternative hypothesis that there were no dolphin deaths. **Challenger Finfish** could not find any justification for the non-reporting reasoning anywhere in the draft TMP. **Quality Equipment** similarly considers that this reasoning is purely speculative and without foundation.

175 **TOKM** states that the draft TMP should focus less on historical levels of mortality and more on mortality trends associated with current management controls. Such an analysis would provide a more accurate picture of how the current management measures are performing.

176 **NZ RLIC** acknowledges the risk to the survival of Maui’s dolphins but does not concede the scale and impact of fishing-related risks as described in the draft TMP.

177 **Quality Equipment** notes that the number of commercial boats has decreased markedly, leaving only vastly experienced operators, the majority of which have never had a Hector's dolphin mortality and will do whatever they can to avoid having one. **Quality Equipment** suggests that the statistics show that the highest recorded mortality per year out of all areas is 0.1%, and the figures portray that the death rate per year is declining.□

178 **AFL** is very disappointed that the draft TMP includes unsupported assertions that commercial fishing is a major threat to dolphins, with recorded deaths showing otherwise.

179 [REDACTED] report that people have told them that they have caught Maui's dolphins in nets and disposed of the bodies so as not to be prosecuted. They submit that many dolphins are probably caught and killed and never reported or found, and so those that are found dead reflect potentially only the tip of the iceberg in terms of actual human-induced mortalities.

180 **Otago Uni** states that the DOC incident database does not contain a full record of all known entanglements. For example, it does not include entanglements reported to Dawson in his interviews of 1984-88 (Dawson, 1991[□]). Thus statements made about the number of incidents recorded in it are potentially misleading. They also state:

It is important to note that conclusive signs of gillnet entanglement are not always present on dolphins known to have been entangled. In over 100 Hector's dolphin carcasses that S.M. Dawson has personally dissected, several dolphins handed in by commercial gillnet fishers bore no external evidence of entanglement. This means that the number of beach cast animals for which cause of death is recorded as gillnet entanglement is an underestimate of those which actually died by this cause.

181 **F&B** states that set net fishing mortality has been identified as the single most important threat to the long-term viability of Hector's dolphins.

182 [REDACTED] notes that gillnet and trawl fisheries have been accepted to pose the most serious threats to Hector's and Maui's dolphins in the draft TMP process. [REDACTED] states that this is supported by research in New Zealand and internationally.

183 **Cetacean Specialist Group of the IUCN** states it is appropriate that the draft TMP focuses on bycatch as this is a global problem for cetacean species worldwide.

Recreational fishing threats

184 **Quality Equipment** notes that the data does not show that a high percentage of deaths recorded are attributable to recreational fishing. **Quality Equipment** submits that there has been a dramatic increase in the popularity of recreational fishing, and that their retail sales show recreational set netting effort is increasing at a substantial rate.

Customary Fishing Threats

185 **Te Tau Ihu** notes that there have been no fatalities caused by customary fishing.

□ Dawson, S.M. 1991. Incidental catch of Hector's dolphins in inshore gillnets. Mar. Mamm. Sci. 7(3): 283-295.

MFish response

186 It is an offence under the MMPA for any person not to report the incidental capture of a marine mammal. Failure to report could result in a fine of up to \$10,000. Non-fish bycatch reporting will be regulated under the Act, likely by 1 October 2008

187 MFish acknowledges that reporting may be poor. Reporting of protected species is not the core business of fishers. At times, data reported has been used to support measures which reduce utilisation of harvested stocks or impose cost on fishers. There is strong evidence to suggest that recorded mortalities underestimate actual human-induced mortality. The DOC database records dolphins which have been reported by the general public, which have net marks and fins removed.

188 Independent observer coverage has been insufficient to date to provide any real estimate of mortality. In the one year (1997-98) where coverage was sufficient to allow extrapolation of incidents in one area (statistical areas 20-22 Pegasus Bay to Canterbury Bight), seven mortalities were observed (one was released alive) were observed. From this level of observed mortality a total of 18 Hector's dolphins was extrapolated as total mortality from the set net fishery in these two statistical areas, for that year.

189 Accordingly, MFish does not rely on fishery-dependent reporting to provide estimates of mortality on protected species for the purposes of management advice. Implementation of non-fish bycatch reporting requirements under the Act may improve reporting. MFish will review the effectiveness of this system by comparing reporting rates between observed and non-observed vessels, following implementation of the reporting requirement.

190 MFish considers that the database of voluntarily reported mortalities should be treated as an indication of the level of mortalities and types of threats causing mortality to dolphins. It should not be used as an estimate of total human-induced mortality for the purpose of determining whether management action should be taken. However it can be used as an input into decision-making, taking into account the significant likelihood of under-reporting of mortality.

191 The clinical protocols for determining cause of death as part of autopsy are very strict. As a consequence MFish considers the DOC database is a very cautious summary of animals where fishing is the cause of death and have been voluntarily reported. Given the likely low level of voluntary reporting and very cautious approach to estimating fishing-related mortality, the database is likely to represent an underestimate of total mortality.

Need for Action

192 **MFA** feels that there is insufficient evidence that the numbers of Hector's or Maui's dolphins is declining. **MFA** state that the existing measures are working well and are sufficient: and that significant costs will be imposed by the imposition of more measures. True costs will outweigh any extra benefits to the dolphins.

193 **SeaFIC** notes that the draft TMP acknowledges that the extent to which various activities impose a threat to dolphins is unknown. However, **SeaFIC** submits that this in itself is sufficient to withdraw proposals for action and, as an alternative, to conduct more research, stating that there is no immediate crisis and no urgency for a decision apart from political pressure. Merely asserting that fishing is the biggest cause of human-induced mortality is not the same as determining that mortalities pose a risk to the species.

194 **SeaFIC** and **TOKM** consider that there is no justification for imposing additional regulations on commercial fishing, noting that the best available information suggests that all populations are stable, if not increasing. They state that the costs of any action would outweigh any likely benefits. Furthermore, **SeaFIC** and **Sanford** state that measures are being proposed in areas where dolphins have never been seen or have not been seen for years.

195 **Sanford, AFL** and **TOKM** consider that the existing regulations and measures are working well and that no additional measures are required.

196 **Treaty Tribes Coalition** expresses concern regarding the proposals, stating that it is not clear that they are *necessary* in order to prevent or reduce threats to dolphin populations or provide any significant benefit to those populations. It is also not clear if there are other measures that might be equally, or more, efficacious.

197 **SeaFIC** considers that there is no need for any urgent action and propose that the draft TMP be withdrawn as the proposals are unwarranted and costly; and that further research and discussions be held.

198 [REDACTED] consider that comprehensive protection is especially important given the risk of population fragmentation, and think that the draft TMP response should be at a national level (page 2). [REDACTED]. They believe that the chosen solution must recognise the national and international importance and vulnerability of this species (page 2).

199 **Treaty Tribes Coalition** states that the draft TMP provides inadequate justification for the proposed measures (para 5.1).

200 **NZRFC** states it is preposterous that the draft TMP is proposing measures in areas where dolphins have never been seen (para 14).

MFish response

201 **MFish** does not consider that you are prevented from taking any measures you consider necessary by uncertainty in information on the extent of impacts as suggested by **SeaFIC**. The “Need for Action” section at the front of the document outlines the rationale for the necessity for management action. In addition each regional section of this document outlines a problem definition specific to each population. Each section outlines best available information.

Uncertainty/Quality of information

202 **SeaFIC** submits that the draft TMP relies on inadequate science and a selective use of unpublished data. Whilst citing public opinion as being relevant, the draft TMP does little to inform the public about the real risk and instead fans public disquiet. **SE Finfish** expresses concern over a reliance on unpublished and non peer-reviewed research.

203 **SeaFIC** highlights that unpublished information from aerial and boat-based surveys has been used in the draft TMP that has not been subject to scientific review, and has not always been properly caveated in the document. In contrast, unpublished data showing an increase in the Te Waewae Bay population has been downplayed as preliminary. **SeaFIC** states that much of this unpublished information is not recent and should have been published by now.

204 **SeaFIC** cites data logger (POD) surveys of Maui’s dolphins in harbour entrances as being unavailable, unpublished and not peer-reviewed; especially given its potential importance in the

decision-making process. Nevertheless, this data has been cited extensively during the consultation period by stakeholders and officials and during the development of the draft TMP. **SeaFIC** expresses concern that the methodology used in these studies is not as robust as the author states, and that corroboration with visual sightings remains unverified. **SE Finfish** also expresses concern over the use of POD data and the lack of published research on its effectiveness.

205 **SeaFIC** and **Challenger Finfish** express concern relating to NIWA's modelling study. Concerns include a truncated working group process and the failure of researchers to supply data. While **SeaFIC** supports the modelling work, their preliminary view is that it does not give a good basis for choosing between management options and that additional research over the next two years could considerably reduce uncertainty. **Challenger Finfish** submits that current estimates of the rate of growth of the populations are dubious and that this can have significant implications for the usability of population trajectory estimates in decision-making.

206 **SeaFIC** submits that the greatest deficit in existing information is the lack of estimates of human-induced dolphin mortalities, especially those attributable to fishing.

207 **TOKM** states that the PBR information in the document is incorrect. The draft TMP states that PBRs for Maui's and for SCSI Hector's is zero. However, **TOKM** states that PBRs can never be zero and that the actual number should be used. Further, **TOKM** states that the PBR for SCSI is likely to increase with more recent surveys and that PBR values are not an absolute limit but are a trigger for possible further management action. Species can recover even if PBR values are exceeded some of the time.

208 **Venture Taranaki** is concerned that decision-making could be based on questionable science, inadequate statistics and scanty information (covering letter).

209 **Te Tau Ihu** expresses concern relating to the validity of the information supplied within the draft TMP, mainly based on anecdotal information. They note a lack of scientific analysis (page 4).

210 **Te Tau Ihu** suggests that it appears that no sound scientific research has been conducted on survival, which many of the forum members believe to be a genetic issue (in particular for Maui's dolphins)(page 7).

211 **Quality Equipment** feels that the information in the draft TMP does not allow for a truly informed decision as a lot of the data is inadvertently misrepresentative of the facts due to its historical nature (page 4).

212 **NZ RLIC** supports the use of the best available information to make informed decisions but does not concede that unsubstantiated and speculative information, or selective research reported from outside a properly peer-reviewed process, can be described as the best available information (page 1). **NZ RLIC** notes that the advocacy for the protection and preservation of Maui's dolphins has been emotive, sometimes hysterical, and has been sustained by consistently misrepresenting facts; relying on scientific research that has not been independently peer-reviewed; and has been promoted mainly by a conservation lobby group (page 3). **NZ RLIC** is hugely disappointed that the same standards of information, research, assessment, communication and consultation required for regulatory proposals has been abandoned in the case of the dolphin debate (Page 4). **NZ RLIC** believes there are many gaps in the draft TMP, and the fact that the social and economic analysis was not made available as part of public consultation is unacceptable (page 4).

213 **NZRFC** are extremely disappointed at the low level and quality of scientific information

that has been produced considering the national significance now being placed upon these species. Worse still, there are no significant research projects planned in the future that fill in any of the short falls (para 13).

214 **WWF** states that, given the rarity of the species, the government should use all available information to make informed management decisions. Ignoring information such as anecdotal sightings, mortality data, model estimates and predictions, extrapolation data (on mortalities and sightings), global research and best practice is not making use of the best available information to make informed management decisions (page 3).

215 [REDACTED] states that the draft TMP contains numerous mistakes and misleading comments, for example the key areas identified as being in need of more research suggest that the staff who put the draft TMP together are not familiar with recent published science.

216 **Cetacean Specialist Group of the IUCN** state that the New Zealand government is in a better position than most governments that have responsibility for conserving small cetaceans. This is primarily because a great deal more is known about Hector's dolphins than is known about most other small coastal cetacean species (para 2).

217 **WWF** state that the draft TMP fails to report fully on the significant amount of research available in New Zealand and overseas that demonstrates the threat of set netting and trawling to Maui's, Hector's and other dolphin and marine species (page 5).

MFish response

218 Despite uncertainty in information you are required to make decisions under the Act to achieve the purpose. The critical issue, therefore, is not whether the information on which the decision is based is uncertain, but rather does the best available information require you to take action to achieve the purpose of the Act (and meet any more specific legislative obligations).

219 The uncertainty in the information is relevant in determining how cautious you should be in achieving the purpose of the Act both in terms of achieving the sustainability obligations and in considering the utilisation impacts of any measures you consider necessary. For example, should you decide that some action is necessary to avoid, remedy or mitigate the effects of fishing related mortality on a species, the level of uncertainty in information may drive you toward a middle ground in the continuum between risk averse measures and status quo. Such a decision would be consistent with your obligations to act with caution in the face of uncertain information but not fail to take action to achieve the purpose if you think action is necessary.

220 The regional sections of this final advice also elaborate on the nature of uncertainty in information about each regional population. The sections immediately below outline uncertainty in information identified by MFish, DOC and from submissions.

221 MFish notes that there is inevitably going to be uncertainty in information about small populations of marine mammals that are distributed widely along coastal regions. However, by having regard to all presently available information, whether peer reviewed or not, it is possible to achieve a reasonable understanding of the circumstances of each regional population. This can be done by making judgments about how plausible the non-reviewed information may be. By doing this it has been possible to obtain credible estimates of current population and distribution, which combined with our understanding of biological influences, makes it possible to assess the need for additional management for both Hector's and Maui's dolphins.

222 However, while we can assess the situation of the populations now, the uncertainties in information do complicate decisions about how much protection is needed to sustain them. The uncertainty in information relating to the following areas is particularly relevant to your deliberations:

Long-term viability

223 Biological and stochastic factors mean that there is a great deal of uncertainty around the minimum abundance that will ensure the long-term viability of Hector's dolphins, and consequently there is no definitive guidance for the Minister on the level above which the species should be maintained.

Abundance of Hector's dolphins

224 There is uncertainty around the current population estimates for Hector's dolphins. The most recent surveys to estimate abundance of South Island Hector's dolphins were undertaken 6-7 years ago. As such, the current abundance of South Island Hector's dolphins is unknown.

225 The most recent published population estimate for Te Waewae Bay (south coast of the South Island) is from a study conducted in 1998-99, which entailed a single boat-based line transect survey of the area. A more recent intensive study of Hector's dolphins that use Te Waewae Bay suggests that the number of dolphins that use the bay might be considerably more than the abundance estimate from the 1998-99 study. While the results from the more recent study are yet to be finalised, this highlights uncertainty around the abundance of Hector's dolphins that use Te Waewae Bay.

226 The abundance of Maui's dolphins has been more recently estimated (from a study undertaken in January 2004).

Nature and extent of fishing threats

227 As mentioned in the previous section, information on the extent of fishing impacts on Hector's dolphins is uncertain. This is primarily due to limited information on the level of fishing-dolphin interactions and trends in species abundance; both of which make it difficult for MFish to determine the extent to which fishing has had, is having, or will have, an adverse effect.

Effectiveness of management measures (current and proposed)

228 Low levels of monitoring means that the level of interaction under *status quo* management is uncertain. Limited monitoring results in uncertainty around catch rates of Hector's dolphins in fishing gear (including any geographical and seasonal variations in catch rates) and consequently the effectiveness of proposed area and seasonal restrictions also cannot be determined with certainty.

Costs and impacts on fishers of measures proposed

229 There is also uncertainty around the impacts that the proposed measures will have on people's social, cultural and economic wellbeing. This is primarily because there is limited specific information about the fishing activities (for example, effort and target species) that are affected by the proposals. To reduce this uncertainty, MFish has contracted an

independent research provider to investigate the potential impacts of the proposed measures on fishers.

Comments on Options in the draft TMP

230 Some submitters provided comments that were generic to the options presented in the draft TMP. These are included below. Comments on a specific region are included further on in the document.

Status quo

231 **NZRFC** suggest that an enhanced version of the status quo be introduced until such time as real research is done to quantify the actual threat amateur fishers pose to these dolphins (para 66).

232 **PPFA** and **SE Finfish** support the status quo.

233 **SeaFIC** submit that the status quo is presented as not meeting the goals of the draft TMP and that this may predetermine the outcome of the decision-making process. Furthermore, the decision-making process appears weighted towards acceptable levels of fishing-related mortality without considering issues such as the cost to fishers, the economy, access, property rights etc that are relevant to meeting the purposes of the Act.

234 **AFL** state that if any options are to be implemented, Option 1 is their preferred choice.

235 [REDACTED] consider that Options 1 and 2 are not enough in themselves because they fail to meet the goal of active management in order to mitigate human impact (page 3).

236 **Greenpeace** state that Options 1 and 2 for gillnets and trawling fail to provide any assurances that the Hector's dolphins would cease being threatened in the foreseeable future.

237 **WWF** state that Options 1 and 2 are unacceptable from a biological and a social viewpoint. Both options provide very little in the way of conservation benefits. Option 2 includes a complex range of regulations in different areas and seasons and **WWF** believe that it would be challenging to monitor for compliance (page 15).

238 **Quality Equipment** support retaining the status quo with regard to set netting and trawling. They feel that the alternative options will have a severe effect on a large cross section of people without bringing a significant reduction in Hector's dolphin mortalities.

MFish response

239 The basis for the industry support for status quo is that there is insufficient information to take action now relative to the costs of management options proposed, and that a preferable approach would be to gather more information before considering whether management action may be needed.

240 **MFish** consider that a substantial amount of information is already known about Hector's dolphins relative to other marine mammals. Information is available on age at maturity, productivity and population sizes. While there is uncertainty in this information you are not precluded from making a decision based on the level of information currently available.

241 You have discretion over whether to implement new or additional measures to manage the effects of fishing related mortality on Hector's dolphins. Dependent on whether you consider the measures necessary (i.e. there is some evidence of impact of fishing on the species sufficient to warrant application of new and/or additional measures and the measures you decide on will provide some benefit to the dolphin population).

242 The risk of maintaining the status quo varies between populations dependent on the size of the population, amount of human induced mortality occurring. The greatest risk from human induced mortality is to the smaller populations of dolphins: Maui's (West Coast North Island); and, Te Waewae Bay (Southland).

243 PBR information suggests these populations can only sustain 0.2 and one animals per year respectively and meet the rebuild targets built in to the PBR methodology. However, you should note that you are not obliged to rebuild the populations as specified by the PBR methodology under the Act. The Act only specifies that associated and dependent species are maintained above a level that will ensure their long term viability, and that genetic diversity is maintained. However, Government has an overall policy position of rebuilding threatened populations of endemic species such as Hector's dolphins and you can take this policy into account when assessing acceptable levels of mortality under the Act.

Option 3

244 A large number of general submitters expressed support for this option.

245 **Greenpeace** state that Option 3 for gillnetting and trawling in areas where both the Hector's and Maui's dolphins populations are found is a substantial compromise away from effective conservation measures (page 2).

246 **Greenpeace** state that a trawl ban should be imposed to coincide, at a minimum, with the same areas that are being proposed by Option 3 for the set net ban (6, 12 & 18 nm).

247 **F&B (Kaikoura)** see an inconsistency between the options for trawling and set netting, in that the offshore distance for trawling should be the same as that for set netting (page 1).

248 [REDACTED] (opening paragraphs) and **WWF** urge the Government to adopt Option 3 (for both gillnetting and trawling) throughout the current range of Hector's and Maui's dolphins; however Option 3 should be extended:

- a) Include those parts of the species' current range not already included in Option 3 (e.g. Tasman Bay, Golden Bay, Pelorus Sound);
- b) Include areas in the immediate past range (e.g. South Taranaki, Wairarapa coast);
- c) Ban trawl in water less than 100m deep (or out to 6, 12 and 18 nm offshore depending on the area).

249 **ECO** support Option 3 as being the closest option to their preferred management measures to protect Hector's and Maui's dolphin (page 1). **Otago Uni** (opening paras) and the **Cetacean Specialist Group of the ICUN** (opening paras) support Option 3 (for both gillnetting and trawling) throughout the range of Hector's and Maui's dolphins.

MFish response

250 There is a difference in risk of mortality between trawl and set net which is shown by mortality information. Known mortality from trawling is much lower than for set net deaths. Options have been developed in response to this lower risk between methods and also based on best available information on depth of trawl mortalities where this information is available.

Safety concerns

251 Overall, **MNZ** has serious concerns over the potential impact the proposals (particularly Options 2 and 3) could have on the safety of a number of aspects of fishing vessel operations.

252 **MNZ** consider that increased monitoring (observers) on fishing vessels could create a situation where the vessel no longer complies with maritime safety rules (e.g. manning limits exceeded, insufficient lifesaving equipment, insufficient sleeping berths, observer may lack a working knowledge of the vessel) which could create situations that pose a significant safety risk (page 1).

253 **MNZs** primary concern with prohibitions out to 2nm will place pressure on fishers to operate beyond the assigned operational limits of their vessel survey (page 1). Vessels less than 6m are only allowed to operate within enclosed waters or 2nm from the shore. Vessels between 6 and 12m can only operate within enclosed waters but a surveyor may allow them to operate beyond 2nm, possibly out to 12nm. **MNZs** absolute preference is for vessels 8 to 12 m only to be allowed beyond 2nm due to safety risks associated with small vessels operating in unsheltered waters. Steaming to and from grounds further offshore may increase the potential for fatigue related accidents (page 2).

254 **MNZ** explain that for safety reasons and to avoid non-compliance, owners and skippers will need to upgrade their vessels and safety equipment to fish increased operational limits. This will result in additional costs. Some smaller vessels will not qualify for an upgrade. Also, fishers will need to upgrade their qualifications from Enclosed to Inshore Limits. For these reasons, there is potential for an increase in non-compliance offences under the Maritime Transport Act 1994, which is a major concern for **MNZ**. Taking smaller vessels beyond their operational limits will put the safety of the vessel and crew at greater risk. There will be an increased workload for **MNZ** to monitor the vessels affected (page 2).

255 **MNZ** consider that seasonal prohibitions have the potential to put pressure on fishers to operate outside their operational limits, and could encourage large numbers of vessels to operate in a concentrated areas leading to overcrowding and increased potential for collisions. Short fishing periods may also provide an incentive for fishers to operate in unsafe weather conditions, and overload their vessels (page 2).

256 **MNZ** note that the full prohibitions out to 12nm will impact a much larger number of commercial fishing vessels than the 2nm closures – an initial search on the **MNZ** database suggests up to 349 vessels (more than the 150 stated in the draft TMP). They have similar concerns here as for the 2nm closures – consequential safety and compliance issues (page 3).

257 **MNZ** also note safety issues associated with compulsory net attendance. If conditions become unsafe or there is an accident, it is crucial for fishers to be able to leave their gear behind. If fishers have to stay with their gear or haul in adverse conditions, this could create a safety risk for

the vessel and crew. Compulsory net attendance may lead to an increase in fatigue related accidents (page 2).

258 **Venture Taranaki** and **TCFA** raise the issue that the fishing industry is often called upon to help with rescuing recreational fishers/boaties who often get caught out with changing weather conditions, especially if they experience a breakdown, and if no commercial boats are nearby (due to closures because of the measures proposed) then this creates a safety issue and fatalities could easily occur (paraphrased from both submissions; 4th para 17 for TCFA).

259 **Option4** state that any measures to implement speed restrictions (of five knots) within 300 metres of Maui's dolphins are impractical and potentially dangerous. Dolphins are sometimes sighted around harbour mouths and river bars, if speed is limited then vessels navigating the bar or river mouths would be put in danger as faster speeds are often required to safely navigate these rougher waters (para 22).

MFish response

260 MFish note that there will be an impact on fishers if options 2 or 3 are implemented. Part of that cost may be a requirement for modification to some vessels and or recertification to ensure vessels are safe to travel further distances required to operate outside of closed areas. The broad cost of options is outlined in the cost of this section and in more detail in the regional sections of this paper. The obligation to ensure vessels safety rests with the vessels operators. However you should be aware of the potential impacts on cost for fishers to comply with any additional safety requirements. This should be considered as part of the inputs into your decision about what measures may be imposed if you consider it necessary to impose any measures beyond the status quo.

Proposals by Submitters

261 **Sanford** propose that alternatives to closing down commercial fisheries should be developed and presented for consideration, such as the use of hydrophone arrays and satellite tagging.

262 **TOKM** submit that the highest priorities for action are:

- i) Aerial surveys to estimate the distribution and abundance of Maui's dolphins;
- ii) Satellite tagging of 12 Maui's dolphins in three difference areas;
- iii) Peer review SCSI range and abundance study;
- iv) Update abundance estimates for ECSI;
- v) Provide the above data to regional fora to develop agreed programmes of action based on risk profiling of populations;
- vi) Continuation of existing observer programme but with greater levels of cooperation and cost sharing with government;
- vii) Encouragement of reporting of sightings through awareness raising and an 0800 number.

263 In the meantime, **TOKM** submit that the Minister should establish interim controls allowing for the closure of particular areas to particular methods, should the PBR for a population be exceeded.

264 **WWF** call for Ministers to recognise that the current Hector's population is distributed in 11 distinct areas that rely on corridors of connectivity between each area for maintaining genetic diversity and hence ensuring the future survival of the species. **WWF** therefore calls on Ministers to ensure the corridors of connectivity are recognised and included in any management decisions. **WWF** recommend the proposed total protection option as the most effective recognition of these corridors (page 9).

MFish response

265 PBR cannot be used to drive management without improved monitoring. Because of the nature of interactions with dolphins and fishing activity the level of observer coverage required to get meaningful data which could be extrapolated to provide an estimate of total mortality for each population from fishing would be very high (50-80% coverage). The cost of such a programme is outlined in the monitoring section of this paper. In summary, it is likely that cost of a monitoring programme necessary to properly inform a management framework

266 There is considerable merit in gathering more information no matter what other decisions are made regarding further mitigation strategies. Ongoing monitoring and research to determine changes in distribution and population size will form an important component of any management framework. Research along with status quo mitigation strategies forms the basis of option one in each of the regional sections later in this document.

Modified Option 3

267 Alternatively, **F&B** support Option 3 with these amendments:

- a) Set netting is prohibited throughout all of Hector's and Maui's dolphin ranges out to 100m water depth (except for the south coast of the South Island, where restrictions should extend to the north coast of Stewart Island);
- b) Trawling is prohibited out to 4nm;
- c) Vessel monitoring systems required on all trawl vessels;
- d) Observers or electronic monitoring equipment required on all trawl vessels within 100m water depth.

268 This modified option 3 would be applicable year round, and across all fishery sectors and locations (pages 8 & 10). **F&B (Ashburton)** want mitigation measures to apply to commercial and recreational fishers in all areas (page 1).

269 **F&B (Tauranga)** support a modified Option 3 with the addition of a ban on trawling in waters less than 100m deep (page 1).

270 **F&B (Central Auckland)** and **F&B (Franklin)** also support a modified Option 3, but with the vessel monitoring systems and observers or electronic bycatch monitoring equipment requirements applying to all vessels (page 1).

271 **F&B (Marlborough)** support a ban on set netting and trawling in waters less than 100m deep all year round.

272 **Greenpeace** suggest that any trawl fishers operating in waters less than 100m deep outside

the 6, 12 and 18nm areas be required to have electronic monitoring or 100% observer coverage. In addition, when the presence, or the likelihood of presence, of Hector's or Maui's dolphins are indicated in an area being trawled, then vessels must cease trawling immediately and move 10nm away. All protections are to be applied year-round across all sectors (page 3).

273 **Greenpeace** support a ban on sets nets in waters less than 100m deep in the Hector's and Maui's historic range areas.

MFish response

274 A set netting prohibition in waters that are within a 100-metre depth contour, as suggested in submissions to Threat Management Plan, would be unenforceable.

275 Voluntary compliance with the proposed measure would be challenging given that it would be impossible for a fisher to accurately measure the depth of the water column at the location in which he or she would fish, if doing so well beyond the intertidal zone. Therefore, compliance with the measure would presumably depend on active enforcement. Sounding equipment can only provide an approximate depth at a moment in time. This measure would be affected by tidal influence, wave action and drift of nets, among other factors. It is unlikely that even obvious non compliance would be able to be proven to an acceptable level for enforcement purposes (e.g. prosecution). In other words, it would be difficult to confirm in many cases, beyond reasonable doubt, that set netting did or did not occur in waters that are less than or equal to 100 metres deep, for fishing which occurs well beyond the intertidal zone.

276 Closures defined by distance from shore as proposed in the TMP (e.g. nautical miles from the mean high water mark) would be possible, although not easy, to enforce. The closures proposed under option 3 would cover the 100 metre depth contour suggested and are possible to identify for compliance and enforcement purposes (e.g. visual estimate of distance from land, coordinates and aerial surveillance).

Option 4

277 A large number of general submitters expressed support for this option.

278 **F&B** suggest and support an Option 4 (not currently provided in the draft TMP) that should be adopted in the medium to long term (page 6). F&B (Hastings & Havelock North); F&B (Upper Clutha) and F&B (Franklin) support an Option 4:

Option 4: "*A nationwide prohibition on set net fishing.*"

279 **WWF** call for the following to be included in the advice that goes to Ministers to ensure that support for a national ban on set nets and a ban on trawling throughout the dolphins' range is represented:

30,000 people support a greater level of protection than any of the options presented for consultation. WWF therefore recommends that the Ministers consider a degree of protection greater than the options presented, that includes removal of the threat from fishing throughout the dolphins' range.

280 [REDACTED] and **WWF** state that the draft TMP fails to include the full range of management options by neglecting to include a total protection option. [REDACTED] suggests that the paper should have included an Option 4 that offers complete protection from fisheries related

mortality, and an Option 5 that reduces human impacts to zero. This would have allowed the public to express their views on more comprehensive protection measures, and would have made it clear that Option 3 is a compromise option.

281 **Otago Uni** (para 36) and **The Cetacean Specialist Group of the IUCN** (para 17) state that Option 3 does not include the entire historic range of Hector's and Maui's dolphins; or the entire current range of South Island Hector's dolphins. If population recovery is the goal, areas where Hector's dolphins used to occur, but no longer do, should be included. Recovering populations need habitat to recover to. **F&B (Kaikoura)** support including the historic range for dolphin (page 1).

282 [REDACTED] support a national set net ban and the national actions proposed in the plan (page 2).

MFish response

283 Environmental groups raise the option of a national set net ban to manage threats to the dolphins. MFish have targeted analysis on the existing range of the dolphins. It would be difficult at this time to justify a set net ban in areas where dolphins are not currently present or where there is no potential overlap with existing range. There is no current impact of fishing on dolphins in those areas.

284 There is a continuum of risk of mortality to dolphins associated with the level of fishing effort using methods which put dolphins at risk and the abundance of dolphins. There are three different types of risk areas. Those areas where dolphins are most abundant, those areas where dolphins are sometimes seen but are likely to be infrequent visitors, and those areas where there is no evidence that dolphins are currently present. Where the dolphin population is larger (East Coast South Island and West Coast South Island) measures should be considered if the impact on the population is considered unacceptable. Measures should be considered carefully where the risk of mortality is very low (few dolphins present or low fishing effort) and the population is large enough. Conversely, where the population size of dolphins is small ie West Coast North Island and South Coast South Island measures may be considered even where the risk of mortality is low (few dolphins and or low levels of fishing effort) because the impact of any mortality on the population is high.

285 As populations increase in size it is likely that current ranges will expand into new areas. Consideration will need to be given at that time to measures in these areas. Increased monitoring of inshore fishing operations as part of the TMP monitoring initiatives outlined later in this document, and monitoring associated with other environmental initiatives will enable better reporting of interactions.

286 A national ban on set net use would have wider impacts and require broader consultation than undertaken for the dolphin process where analysis of impacts of measures has been focused on areas within the current range of existing dolphin populations. No consultation or analysis has been undertaken on issues or impacts of a set net ban on the East Coast of the North Island for example.

Controlled breeding

287 **NZ RLIC** support a controlled breeding programme for Maui's dolphins (to "rescue" the population), and suggest Marineland in Napier as a suitable facility for dolphin breeding (page 4). **Te Tau Ihu** state "it has been suggested by Ngati Koata, Rangitane, and Ngati Tama and supported

by Te Tau Ihu Forum to gift a 100 Hector's dolphins to assist with the survival of the Maui and Hector's dolphin as part of a breeding program." Te Tau Ihu as kaitiaki koha 100 Hector's dolphins to increase survival, sustainability and longevity of the Hector's and Maui's dolphins and look at innovative ways to increase the survival of both species (page 8).

288 **WWF** oppose holding marine dolphins in captivity, when there is a viable opportunity to restore natural populations in the wild, and would not support the renewal of any applications to do so (page 33).

MFish response

289 The Department of Conservation (DOC) considers the best chance for the recovery of the species is to effectively manage the human induced threats to Hector's and Maui's dolphins in their preferred habitat and throughout their full range. There are considerable limitations of both in-situ (capture and removal to an enclosed marine environment) and ex-situ (captive and removal to a shore based facility) breeding programmes for the recovery of any critically endangered species. These are outlined below:

- a) First and foremost the captive breeding of any critically endangered population of dolphins has never been attempted due to the very low possibility of success of actually breeding a viable population and/or the subsequent re-introduction of captive breed dolphins.
- b) Both in-situ and ex-situ breeding programmes would consist of removal of dolphins from their preferred habitat and social groups. This would cause considerable stress to the captured dolphins but also to the remainder of the group. Dolphins are a highly social species with complex and not fully understood interactions. Dolphin captures, both overseas and within New Zealand (Napier Marineland/Hector's dolphins) have caused very high mortality rates during the capture, transfer to holding facilities and post capture stress. Therefore it is possible that both the captured and remaining dolphins would be exposed to a high level of human-induced mortality.
- c) The number of dolphins captured would need to be sufficient to develop a breeding population that is self-sustainable (providing the dolphins would breed – currently this is unknown). It is common in the captive breeding of endangered land based species for limited or no success with forced copulation. It is unknown what the success rate for Maui's dolphins would be and there would be a high risk to the survival of the species.
- d) The capture and breeding of dolphins that already show some inbreeding depression (ie, Maui's dolphins) would only exacerbate the depression in both the captured dolphins and wild population. This may lead to further genetic loss and faster population decline. Over time more and more dolphins would need to be captured to bring new genes into the captive population. This would have the effect of further removing genetic variation from the wild stock.
- e) New Zealand does not have any facilities that would be of a suitable standard for land-based captive breeding. The cost of upgrading or building facilities to an internationally acceptable standard would be considerable.

- f) In order for re-introduction to occur the area of release would need to have all the human induced threat's managed for the long-term viability of the dolphins. This would need to be over a wide spatial area and for the full range of the dolphins. DOC considers that this is the intent of the TMP and the most cost effective, beneficial and humane way to manage the recovery of a critically endangered dolphin population.

Need for Collaborative Approach

290 **SeaFIC** consider that there is no need for any urgent action and propose that discussions should be held with industry on a regional basis regarding the establishment of a package of measures to mitigate adverse impacts.

291 **TOKM** propose that regional fora involving MFish, DOC, iwi, commercial and recreational fishing groups should be established to agree and implement any additional measures that might be required as a result of the proposed research programme.

292 **TOKM** submit that effective, long-term programmes require good information and a commitment from all sectors to develop, implement, monitor, review and modify effective actions over time. **TOKM** state that New Zealanders as a whole do not respond well to a system that is based on regulations and penalties.

293 **Quality Equipment** feel that to produce a thorough plan, information sharing between all key stakeholders is paramount (page 4).

294 **TCFA** note that developing future protection options (if any are necessary) needs to be done inclusive of those that are utilising the marine environment (paraphrased from para 8).

295 **Area 2** recommends officials take time to impartially review all verifiable information and work with stakeholders on a localised basis to develop and closely monitor solutions.

296 **F&B (Golden Bay)** suggest regular (at least once every 2 years) consultation including MFish, DOC, iwi, local government, environmental NGOs and other interested parties to review regional progress under the draft TMP for the top of the South Island (page 4).

297 **BRFA** support further engagement with MFish on the monitoring of recreational fishing entanglements, noting that fishers and government should work together to gain reliable data on risks and unsafe practices.

298 **NZRFC** submit that proper consultation with locals must be undertaken prior to any other recreational set net measures are introduced in the SCSI to ensure a local solution is agreed upon (para 38).

MFish response

299 MFish consider there is merit in development of an ongoing approach to management of dolphin interactions. The need for such an approach will to a large degree be governed by what measures are decided on as part of this process. Measures closest to the status quo will require the greatest level of ongoing monitoring of risk and need to assess and potentially develop new or alternative risk management strategies in future. If the option one or two is chosen then MFish will work with DOC to consider more closely the merit of regional fora to address research and management issues for each population.

Costs of measures (General)

300 A number of individuals and fishing companies provided information on costs. These submissions have been incorporated into MFish analysis of costs at a regional level.

301 **SeaFIC** address the aggregate effects of the proposed options on the industry. While noting that there has been insufficient time to undertake a detailed analysis, **SeaFIC** provide a breakdown of costs to industry for each option that they believe provides at least some order of magnitude estimates.

302 The cost of Marine Mammal Sanctuary proposals has not been included as **SeaFIC** considers that there is a lack of detail in the draft TMP as to what fishing measures are to apply in sanctuaries.

Table 3: Economic impacts of options from draft Threat Management Plan – SeaFIC submission.

IMPACT ESTIMATES			
	Option 1	Option 2	Option 3
Volume of Annual Catch Lost (tonnes)			
WCNI	64	985	3,372
ECSI	0	4,194	4,638
WCSI	0	1,114	1,716
SCSI	0	1,075	1,491
Total	64	7,367	11,217
Value¹⁵ of Annual Catch Lost \$m			
WCNI	0.4	5.6	18.4
ECSI	0.0	9.5	13.1
WCSI	0.0	3.7	7.1
SCSI	0.0	3.5	5.4
Total	\$0.4	\$22.3	\$44.0
Annual Value¹⁶ to Nation lost \$m			
Total	\$0.8	\$44.6	\$88.0
Quota Value Lost \$m			
Total	\$0.2	\$38.5	\$75.5
Fishers Lost			
Total	60	300	411

303 The key assumptions used by **SeaFIC** to calculate these costs are:

- a) The proportion of statistical area catch that lies within the proposed closed/restricted

¹⁵ Based on export values

¹⁶ Based on multiplier of 1.97 from McDermott Fairgray Group report May 2000

areas has been used to determine lost catch;

- b) Where it is compulsory to stay with a net or to not set overnight, it is assumed that this will make set netting uneconomic and force set-netters out of the industry. It is assumed that they will not be able to relocate elsewhere;
- c) The value of estimated catch lost is the lost catch multiplied by the export price;
- d) The annual value lost to the nation is estimated using the revenue multiplier for the fishing sector of 1.97;
- e) Loss in quota value has been estimated by multiplying lost catch by average quota price and assumes that the TAC and TACC have been reduced by the amount of lost catch as a consequence of the measures.

304 **SeaFIC** submit that the implementation of Option 3 across all regions will result in an annual loss to the nation of about \$88 million; the quota value loss will be about \$75 million and up to 411 commercial fishers' jobs could be lost.

305 **SE Finfish** provide cost estimates for the principle stocks in FMA3 and FMA5. Estimates are of the same magnitude described by **SeaFIC**, however **SE Finfish** note that many stocks are excluded from their analysis. **SE Finfish** conclude that the economic, social and cultural implications are huge and unsustainable. **Challenger Finfish** endorse the cost estimates for the Central and Challenger fisheries provided by **SeaFIC**.

306 **Sanford** highlight the significant investment they have made in the New Zealand economy and society through their direct employment of significant numbers of staff, export earnings, and the recent development of the Auckland Fish Market. **Sanford** express strong concern that the proposals will threaten and undermine all of these investments, destroy the prospect of future investments and have significant health impacts on New Zealanders, who will have less access to fresh fish.

307 **Sanford** provide the following summary table of loss of revenue to their company:

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308 **Sanford** provide a more detailed breakdown of costs for each of their operations, stating that they do not believe that the draft TMP comprehensively considers the risk that operations may become unviable due to the delicate balance of the economic operations of a fishing operation.

309 **Challenger Finfish** state that they did not have sufficient time or resources to conduct a proper catch-effort analysis of the impacts of the proposals across the fleet. While they support the **SeaFIC** analysis, and provide information relating to costs, **Challenger Finfish** submit that it is the responsibility of MFish to assess the potential implications of their proposals on the fishers and fishing industry.

310 **Challenger Finfish** provide case studies from their own interviews with fishers on the likely impact of the proposals, highlighting the diversity of fishers affected and the impacts that the proposals will have on them.

311 **AFL** state that the economic impact commentary provided in the draft TMP is completely inadequate. The main impact on **AFL** and other quota owners is a loss of quota value. **AFL** provide the following summary cost information, with a more detailed assessment contained in their submission:

- i) Option 1 [REDACTED]
- ii) Option 2 [REDACTED]
- iii) Option 3 [REDACTED]
- iv) Marine Mammal Sanctuaries [REDACTED]

312 **AFL** submit that it expects to receive its proportional share of these totals as compensation.

313 **TOKM** state that the draft TMP implies that because sustainability proposals apply to all commercial fishers, no issues arise with respect to the Fisheries Settlement. **TOKM** strongly disagree with this because the Crown has ongoing responsibilities to provide active protection to the settlement and not impose policies that would devalue it unnecessarily. **TOKM** further state that when dealing with issues that impact on quota, the Crown has an obligation to only make the minimum necessary changes to achieve the sustainability measures required under the Act.

314 **TOKM** has not been able to undertake a detailed analysis of the impacts of the different options on iwi commercial use. However, they state that most of the affected quota species were introduced into the QMS in 1986. As such, iwi will receive 10% of that quota. The impact at an individual iwi level may be much greater, particularly for WCNI and all iwi in the South Island. **TOKM** state that in a number of cases, inshore quota represents as much as 75% of Settlement assets.

315 **Treaty Tribes Coalition** state that paragraph 7.2.1 of the draft TMP records (at page 60) that no issues arise under the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 in respect of the proposals because “Applications of sustainability measures applies generically to all commercial fishers”. In **Treaty Tribes’** view, this is simplistic (para 4.7). Further, they state that because Fisheries Settlement assets were provided to iwi as redress, and in exchange for, traditional rights in relation to fishing, the Crown should act cautiously in taking any action that would affect the nature or value of the assets (para 4.9). The **Treaty Tribes Coalition** is not arguing that settlement quota should be given preferential treatment over other quota, but rather that a high standard should be met by proposals that would significantly affect quota values than appears to be in the case in the draft TMP (para 4.10).

316 **Te Tau Ihu** state that the options proposed in the plan effectively deny Te Tau Ihu Treaty rights by custom to fish commercially within the proposed closed and restricted areas. These options in the draft TMP are effectively limiting and diminishing the treaty rights of Maori to actively use their commercial fishing rights to fish for species by a certain method. There is no financial impact assessment within the plan that addresses financial loss to tangata whenua, as customary commercial Treaty right holders (pages 4 & 5).

317 **LCFA** note that many fishers will face financial ruin, and note flow on effects and the negative impacts on communities of the measures proposed (page 2).

318 **Quality Equipment** are concerned about the cost a ban or restriction on fishing, as outlined in the draft TMP, will have on their business, their clients and the wider community they live in. **Quality Equipment** consider that the option of limiting fishers to an area outside so many nautical miles would in effect end the viability of their businesses, and this would in effect amount to a total ban (page 1). For **Quality Equipment**, this would mean a net sales loss in the hundred thousands per year (not including peripheral sales of safety gear etc). The measures would also impact on jobs in the company (page 1). They consider that the economic implications of closing the set net fishery are a lot wider than was made apparent in the draft TMP. **Quality Equipment** consider that direct revenue has been underestimated and the flow on effect to peripheral business has not been considered (e.g. gear companies, net slingers, marine engineers, crew, fish unloaders, electricians, factory workers, truck drivers, mechanics) (page 1). **Quality Equipment** consider that an offshore closure for trawling could mean the end of the inshore trawl fishery – with immeasurable economic implications and devastating effects on local communities throughout NZ (page 2).

319 **Quality Equipment** consider that set netting uses less fuel and takes less bycatch than trawling while producing a premium product. They suggest that the comment that net caught fish could be caught by trawl in the future has been initiated by the uninformed (page 3).

320 **Ngāti Mutunga** state that any measures that restrict fishing methods within their area of interest without clear and measurable evidence of their negative impact is an unreasonable use of regulatory powers which could have severe negative impacts on Ngāti Mutunga, their associated fishing business interest partners and their families (page 2).

321 **F&B** support moves to address the costs of switching to alternative fishing methods, rather than the cost of stopping fishing - which is how this issue is currently being framed (page 12). Socio-economic research should also focus on the non-extractive values of the draft TMPs proposed options (page 13). **F&B (Marlborough)** state that the loss of income to commercial fishers should be borne by the public as it is a cost to an individual for the public good (page 1).

322 [REDACTED] (para 13) and **Otago Uni** (para 37) state that when considering the potential effects on the fishing industry it is important to take into account that:

- a) Gillnetting is not a major contributor to New Zealand's economy. Of approximately \$1.3 billion earned by the fishing industry in 2006 (not including aquaculture) far less than 1% was from gillnetting;
- b) Because none of the options in the draft TMP bans fishing, there is considerable scope for fishers to change to selective, sustainable fishing methods and continue fishing;
- c) The potential costs of conservation need to be seen in perspective, given the

excellent level of employment in New Zealand and the number of jobs lost this year for purely economic reasons;

- d) These costs are insignificant compared to the economic benefits from dolphin watching in New Zealand.

323 **WWF** call for the recognition of other marine environment user groups who will be economically impacted upon should dolphin population declines continue. Information such as the value of the dolphins to the economy (e.g. to the marine tourism industry) should be presented alongside the costs of protection measures to fishers (page 13).

324 **WWF** call for a robust and thorough decision making process where Ministers take into account the views of value of and costs to all submitters on the draft TMP.

325 **Te Tau Ihu** state there could be a loss of economic benefits with the proposed moratorium on permits for viewing dolphins. This has a wider impact on potential development programmes and eco-tourism proposals that will contribute to the economic development of Te Tai Ihu and the wider community (page 5).

326 **TCFA** state that local operators make decisions to lease ACE for the new fishing year in October and a decision before Christmas by the Ministers could make this ACE incapable of being caught and valueless (9th para 17).

327 **Quality Equipment** note that quota holders will face huge financial losses (page 1). When the QMS was introduced, fishers agreed to implement the new system on the proviso that they would be able to catch their quota allocation by the most efficient and cost effective methods available to them. Set netting was heavily promoted by the regulatory authorities as the most selective, fuel efficient and least damaging to fish stock method available (page 3).

328 **Area 2** state that the government must support systems that recognise the value of quota and Options 2 and 3 will destroy this value. They believe that spatial closures will lead to the value of quota dropping and that this undermines the entire basis of the QMS.

MFish response

329 In making a decision under section 15(2) of the Act you must first consider whether it is necessary to take action. This is essentially a sustainability decision based on best available information. If you consider it necessary to take action you need to consider what measures are necessary. Cost is most relevant to your consideration on what measures are necessary. You need to be aware of the costs and take those costs into account in determining whether a particular measure is necessary and reasonable to avoid remedy or mitigate the effect of fishing on a protected species given best available information. You are not trying to provide for utilisation of protected species to the extent possible as for harvested stocks.

330 Submitters have provided considerable information on the costs of the proposed measures. In addition, MFish commissioned an independent economic analysis of impacts and undertook analysis of economic information supplied by submitters. Based on further analysis at a species level, the cost of proposed measures is as outlined in Table 4. MFish goes into significant detail about the costs of the proposed measures in the regional sections of this document and Appendix 2.

Table 4: MFish Assessment of impacts of proposed measures

	Option 1 (\$ million)	Option 2¹⁷ (\$ million)	Option 3 (\$ million)
Harvest Income (\$m)	0.1	3.8-4.8	8.9
Other Income (\$m)	0.8	21.9-28.6	50.9
Total Income (\$m)	\$0.9	\$25.7-\$33.4	\$59.8
Quota Value (\$m)	\$0.6	\$26.4-\$31.6	\$65.9

Compensation or adjustment assistance

331 **SeaFIC** note that set net and trawl fishers may apply for adjustment assistance, and quota holders may apply for compensation. **SeaFIC** emphasises that fishers and quota owners view such actions as a last resort, preferring least-cost, scientifically justified management measures. However, **SeaFIC** considers that the imposition of further management measures may constitute “undue alteration” of ITQ rights, as the TMP fails to make the case that existing management measures are inadequate.

332 **SeaFIC** states that they see benefit in providing compensation in terms of incentives for decision-makers, allowing fine-tuning of proposals, and helping to rebalance the incentives at the heart of the Quota Management System.

MFish response

333 MFish note that section 308 of the Act notes that no actions under s.15 of the Act shall be regarded as making the Crown liable to pay compensation or damages to any person. MFish can provide separate advice to you on compensation issues if you consider it necessary following your decisions on mitigation measures.

General comments

334 **PPFA** do not support the draft Threat Management Plan (draft TMP), stating that the information is inaccurate and misleading. **SE Finfish** similarly completely reject the draft TMP on the basis that it is seriously flawed in science and fact. **SE Finfish** state that the draft TMP is strongly emotive, stirring the opinions of a misinformed public and to misleading politicians.

335 **SeaFIC** submits that there have been fundamental flaws in the process through which the draft TMP has been prepared and promoted. The draft TMP proposes measures in the absence of good information about the biology, population and trends of Maui’s and Hector’s dolphins or about the actual levels of human-induced mortalities. **SeaFIC** also states that the draft TMP has not done a good job of critically reviewing the information that does exist.

336 **SeaFIC** express concern over statements such as “departments have a preference for putting in place measures which cover the range of the dolphins”, and “DOC has a preference for measures that reduce the likelihood of fishing-related mortality to the lowest level possible”.

¹⁷ Cost range due to difference in impact between 2 and 4nm closure in the South Island.

337 **Challenger Finfish** question conflicting statement in the draft TMP about whether national consistency is preferred or whether the costs and benefits of each population should be addressed separately.

338 **TOKM** is not confident that the deficiencies in the draft TMP will lead to an effective FAP as this will require significant investment over time by government and a cohesive long-term action plan across a range of sectors using quality information and analysis.

339 **TOKM** express several concerns regarding risk mitigation and impact on current use for each option. Specifically:

- a) It suggests that the status quo has little or no risk mitigation and imparts no cost on current users;
- b) It suggests that the options involved are part of a steady and almost equal progression. A detailed look at the actual options proposed shows that this is not the case;
- c) It conveys no information to the decision-maker on what the actual (absolute) level of risk mitigation is for each option and how this measures against defined thresholds to ensure viable dolphin populations;
- d) The status quo indicates to **TOKM** that current levels of mortality are less than PBR values, indicating the effective performance of measures.

340 **NZFCF** submit that to impose a real annual cost of \$89 million on New Zealand to address a perceived and unsupported threat to the dolphin populations is not a reasonable judgement. **NZFCF** state that the lack of problem definition and erroneous claims throughout the Draft TMP leave the proposal wide open for legal challenge from the commercial industry, which is extremely counter-productive and weakens relationships. However, **NZFCF** see no alternative given the way the draft TMP has been presented and the lack of genuine engagement with the industry.

341 **WWF** urges Ministers to take time in considering all the submissions and in considering whether the dolphins may or may not survive given the protection options. This is a critical time for Hector's and Maui's dolphins which will be dependent on the Ministers' decisions.

342 **NZRFC** are concerned that the fine scale management that is going to be required to address the issue of Hector's and Maui's deaths is not going to happen given the short time frame for management proposals to be put in place (they have heard by Christmas) and the Ministry will opt for a "one size fits all" approach. This will be unacceptable. They do not believe that MFish or DOC have taken any notice of local information about where the animals are or how to ensure their survival (para 62). Further, they state that the amateur sector is severely under resourced to produce a full analysis of the draft TMP in the time available (para 64).

MFish response

343 MFish do not agree that the TMP is in some way biased toward taking measures. The document does not contain recommendations directing you to implement measures. MFish consider that you have considerable discretion to do implement measures on the basis of best available information if you consider it necessary to do so. MFish agree with SeaFIC that cost issues are relevant to your consideration if you determine that additional management measures should be applied.

344 A number of industry representative groups have raised issues with the risk analysis outlined in the TMP in particular lack of quantification of risks. A number of the points raised by SeaFIC and others have been answered in the legislative context section above. The TMP and discussion of measures is based on analysis of best available information.

345 There is insufficient information to quantify existing risk or quantify the effect of measures proposed in the IPP in terms of reduction to defined risk. This lack of information creates uncertainty in the overall analysis of costs and benefits of measures. As noted elsewhere, you should take the uncertainty in information into account when making a decision and be cautious in your decision. However, the qualitative nature of the assessment does not prevent you from making a decision if on the basis of the information presented you consider it necessary to implement new or additional measures to avoid, remedy or mitigate the effects of fishing on Hector's and Maui's dolphins.

346 The TMP has been structured to include discussion of management at a population as well as a species level and at a regional level. The regional level discussion in particular also consideration of scales of management appropriate to sub-populations.

Non fishing threats

Key Points

347 **SeaFIC** states that in order to properly assess the threat to dolphin population viability from human induced mortality, as minimum, usable estimates of mortalities due to recreational fishing, boat strikes, pollution and disturbance are required. **Challenger Finfish** submits that while the TMP hinges on the belief that fishing is the largest known cause of human induced mortality, the TMP does not acknowledge that known causes make up only a small proportion of the total deaths. **NZFCF** states that to downplay the existence of non-fishing threats is to misinform the public and Ministers.

348 **SeaFIC** and **Sanford** also question why the government is not proposing real measures to deal with the likely impact of boat strikes, marine energy turbines and pollution, given that Maui's dolphin cannot bare even one human induced death. **SeaFIC** states that the current proposals are high-flown and generally ineffective. **Sanford** and **Challenger Finfish** consider that the TMP fails to identify and address non-fishing related interactions.

349 **Challenger Finfish** states that if Government wants to adopt a zero risk approach, all threats must be addressed immediately.

350 **TRSA** submits that improving water quality would be a better approach than worrying about set nets, as pollution in the Manukau Harbour is still at unacceptable levels.

351 **WRMFA** expresses concerns that non-fishing threats are not being addressed. Specifically, the issue of protecting Maui's dolphin food source is not well understood by officials. **WRMFA** submits that yellow-eyed mullet are the main food source of dolphins and that yellow-eyed mullet spawning areas and their food source (insects living in beach-cast seaweed), are being affected by pollution from sewage discharge.

352 **WRMFA** submits that the failings of the New Zealand Coastal Policy Statement to adequately describe and preserve the value of the inter-tidal zone is destroying the food source of Maui's dolphin and has been the single major contributing factor to their decline.

353 **WRMFA** states that the TMP does not describe the threat from jet power tourist craft such as 'eco friendly tourism', despite the effect these craft have on plankton-rich surface water where all marine life begin their life.

MFish Response

354 MFish and DOC recognize the importance of identifying and managing all threats to Hector's and Maui's dolphin. For this purpose a panel of independent experts was tasked with developing a list that outlined all threats. The IPP describes the range of threats identified. The threats identified were then prioritized by impact (significance of threat) and treatability. Fishing was the highest priority threat identified for consideration of management given best available information. However DOC has developed a range of options for managing non-fishing related threats to the dolphins which will be considered by the Minister of Conservation. There is no information to suggest that initiatives related to management of fishing activity, if you considered it necessary to introduce further measures, would be undermined by other non-fishing threats

Regulatory impact statement

355 **SeaFIC** states that the draft regulatory impact statement is circular and self-fulfilling, failing to establish a problem and not providing the likely costs and benefits of the proposals.

MFish response

356 The draft Regulatory Impact Statement (RIS) included with the TMP is a summary based of the more detailed problem definition contained in the TMP. Both sections are based on best available information. Issues around the problem definition are outlined and responded to above, amendments made to the problem definition as a result of information from submissions will be included in the a revised RIS if you decide to proceed with changes to regulations.

Deed of Settlement

Input and Participation of Tangata Whenua

357 **TOKM** is unaware of MFish or DOC making particular efforts to consult with iwi directly over the draft TMP.

358 **Treaty Tribes Coalition** believe that inadequate consideration as been given to Maori cultural values in the preparation of the draft TMP (para 3.1), and no enquiry was made of any Maori persons as to the nature of that significance (para 3.2). Meaningful engagement with coastal iwi and hapu could have produced a different result (para 3.4).

359 **Treaty Tribes Coalition** state that they, and other coastal iwi and hapu, would be more than willing to engage in meaningful discussions of proposed measures that are scientifically shown to be necessary or to be likely to achieve the desired result.

360 **TOKM** consider that the process followed and analysis to date does not give due recognition to the Treaty and Fisheries Settlement. This is particularly surprising given that Section 4 of the Conservation Act (and therefore the MMPA) requires the Crown to give effect to the Treaty of Waitangi. **TOKM** state that this means a requirement to consult in good faith and a duty of active protection. **TOKM** also refers to obligations under the Act to rights established in the Fisheries Settlement, including the need to provide for input and participation.

Comments on impacts on customary fishing

361 **Treaty Tribes Coalition** believe that the draft TMP lacks a full consideration of the substantive, as well as the procedural, interests of iwi and hapu

362 **TOKM** submit that additional measures are not needed and will impose unnecessary restrictions on the ability of hapu and iwi to use commercial and non-commercial fisheries settlement assets.

363 Given the scale of measures, **TOKM** submit that these proposals will have significant and perhaps debilitating impacts on most if not all iwi that about the WCNI and all iwi in the South Island, particularly Ngai Tahu.

364 **TOKM** submit that the draft TMP will have an effect on customary non-commercial use, despite statements to the contrary in the draft TMP. This is because:

- a) If iwi are convinced that restraint is needed, there will be no authorisation to fish using 'prohibited' methods granted by kaitiaki;
- b) Iwi are integral to the community in which they live – they would not want to create disharmony by operating to a different set of controls;
- c) A number of iwi obtain customary non-commercial kai by sourcing it from commercial vessels that fish the area. The proposed measures will affect this process;
- d) Obtaining customary non-commercial kai from other iwi through manaki, this will place a burden on other iwi resources;
- e) **TOKM** rejects the assertions in the draft TMP that there will be an increase in authorisations granted by kaitiaki due to restrictions on amateur fishers, for the reasons stated above.

365 **Treaty Tribes Coalition** express concern that the draft TMPs consideration of the Treaty of Waitangi and Māori cultural values is scanty (para 4.1).

366 **Ngāti Mutunga** state that DOC and MFish have failed to regard how the draft TMP will affect **Ngāti Mutunga's** customary commercial and non-commercial fishing interest (page 1), including their rights to aquaculture guaranteed under the 2006 Treaty Settlement (page 2).

367 **Te Tau Ihu** state the plan fails to acknowledge tangata whenua that have rights guaranteed under the Treaty of Waitangi. The customary right is to be protected and enduring for all time. They state that if the Minister of Fisheries and the Minister of Conservation fail to protect their right by denying or limiting their customary rights it will result in a contemporary grievance being filed. They express serious concerns with the draft TMP in that the customary right is becoming limited and is in some areas denied through the implementation of proposed closures to areas and set net bans within Te Tau Ihu takiwa and rohe moana (page 4).

368 **Te Tau Ihu** state that set net bans within Te Tau Ihu will have long enduring impacts on customary fishing and commercial Treaty rights. This practice provides an opportunity to pass on knowledge to whanau members such as where to set nets, when to set nets and what appropriate mesh size is required for the various fin fish species. **Te Tau Ihu** urges both Ministers to recognise

their Treaty rights and allow for the customary practice of mahinga kai within their rohe moana (page 6).

MFish response

369 TOKM suggest that moral suasion will prevent representatives from issuing permits to harvest which will be a breach of the settlement. They further suggest that the Minister should have specific regard to impact of devaluing settlement quota when considering costs and benefits of measures.

370 The Act is clear in relation to the definition of customary fishing. The measures proposed apply to amateur and commercial fishers. It is possible that the proposed prohibitions on amateur set netting might lead to an increase in authorisation applications for customary set netting. MFish notes that customary fishing regulations enable Tangata Tiaki, or a tangata whenua representative appointed for the area, to issue authorisations in contradiction to any amateur set net area closures. The representative can choose whether or not to allow permits to be issued. MFish intend to discuss risks around use of set nets with representatives in areas depending on decisions made. The intention is to ensure that decisions on whether permits are issued if a ban on fishing is in place are made using best available information. MFish notes that permits could also be conditioned to ensure that fishers remain with their nets, do not set nets at night and fish where possible in areas where dolphins are not likely to be present.

371 MFish believes it would be entirely consistent with the settlement for discretion to be exercised in this way in relation to a sustainability issue. MFish consider that quota is the medium of the commercial portion of the treaty settlement. Quota is issued within the constraints defined in legislation. Ensuring sustainability, including managing the effects of fishing is one of those constraints. The constraints apply equally to all quota. MFish do not believe the Act requires the Minister to have special regard for quota owned by Maori in relation cost implications. Case law has confirmed this position.

372 However you should have regard to the impacts on utilisation generally when considering the cost and benefits of measures proposed if you decide that action to mitigate the effects of fishing on the Hector's dolphin is necessary

Process (including consultation)

Availability of critical information

373 **SeaFIC** considers that the TMP lacks detail around social impacts and population modelling, disadvantaging submitters who will not have access to important information. Overall, it is inadequate as a basis for consultation. **SeaFIC** also consider that the draft is inadequate as a basis for consultation because it lacks explanations and justifications about details of marine mammal sanctuary boundaries and potential management measures, and contains contradictions in some of the tables of options.

374 **SeaFIC** submit that they have been hampered in efforts to obtain critical information on matters such as sightings of dolphins, aerial surveys, POD surveys and risk assessments. **SeaFIC** state that this information may be critical to Ministers' decision-making and should have been included in the IPP.

TMP Development Process

375 **SE Finfish** state that the draft TMP is incorrect and misleading because it alleges that a national advisory group, or expert panel, developed the draft TMP for consultation. **SE Finfish** consider this to be untrue and insulting as the group met infrequently, the draft TMP was not reported back to them for pre-consultation discussion and the pre-consultation road show was hugely compromised by focussing totally on the effects of fishing.

376 **WWF** are concerned that the draft TMP was not presented to the Technical Advisory Group for review prior to release for public consultation as required by the Terms of Reference, hence the draft TMP does not necessarily reflect the final input the Advisory Group may have been able to provide had the review occurred (page 12).

377 **Option4** object to the consultation process being undertaken by both MFish and DOC and deem it unlawful according to the Court of Appeal decision relating to the Wellington Airport Case (para 33).

378 **NZRFC** express disappointment with the level of consultation given the impacts on amateur fishing that are suggested within the draft TMP (para 12). They state that the draft TMP was written with significant input from environmental groups however the input from the fishing sector was almost non-existent (para 16); and the period of consultation is far too short to have been able to contact all of those who will be affected by the planned measures (para 58). They state that the emphasis on fishing related mortalities is unacceptable (para 15) and that there are other reasons why Maui's dolphin are in decline (para 57).

379 **Treaty Tribes Coalition** states that despite the clear statutory directives (paras 4.2 to 4.4), it does not appear that meaningful efforts have been made to engage with coastal iwi and hapu in the development of the proposals. Other than in relation to the management of customary set netting, it is not apparent that such engagement as might have occurred has had any impact on shaping the final proposals (para 4.5).

380 **Ngāti Mutunga** state that neither MFish or DOC informed them of the proposals prior to consultation, or involved them in the initial development of proposed management options that affect their commercial and non-commercial fishing rights (page 1).

381 **Te Tau Ihu** state that tangata whenua have not been involved in socio-economic cost research being currently undertaken. They are concerned that should the socio-economic cost research be accepted by both Ministers, no opportunity has been afforded to Te Tai Ihu to view the assessment or address the content (page 5).

382 [REDACTED] appreciate the work that has gone into the draft TMPs development and dissemination (page 1).

Aranovus Report

383 **SeaFIC, KHSFMSG, Sanford** and **NSG** express concern that the economic impact report commissioned from Aranovus by MFish will not be completed until after the submission period and that many promised one-on-one interviews have not been held, or information was required in too tight a timeframe. **SeaFIC, KHSFMSG** and **NSG** consider that the information in this report is likely to be understated and incomplete. **NSG, Challenger Finfish** and **Sanford** add that the impact on quota holders and the wider fishing community was not assessed, and the fact that the

report uses Port Prices instead of Free on Board (FOB) prices render it unusable. **SeaFIC** provide advice on what socio-economic information should be collected and assessed and **Challenger Finfish** provide advice on what factors may contribute to the costs on individual fishers of the proposals

384 **Challenger Finfish** express concern that Aranovus were not going to interview Taranaki fishers, did not appear to understand the difference between quota and ACE and that the research project is hugely lacking in understanding of the commercial fishing industry.

385 **SeaFIC** and **Challenger Finfish** submit that it is unfair that the public have no opportunity to review the Aranovus report or MFish's views on that report; and state that it is unacceptable that a report from NIWA on modelling will not be available for submitters to review.

386 **KHSFMSG** (page 5) and **Option4** (para 40) are concerned that the economic impact report commissioned from Aranovus will not be completed until after the submission period (page 5).

Public Meetings

387 **KHSFMSG** express concern at the way consultation was carried out, stating that the presentation of the draft TMP was been especially inadequate. **KHSFMSG** state that:

- i) There was a lack of public notification;
- ii) The format of meetings was casual with no definite time for the presentation;
- iii) The presentation was rushed with no opportunity for detailed discussion;
- iv) Attendance was poor due to meetings being held during daylight hours;
- v) MFish were not amenable to more structured meetings held later in the evening.

388 **CRAMAC 5** and **PAUAMAC7** express concern at the dismal public consultation process, stating that the wider Marlborough community had only 11 days to complete a submission following the public consultation meeting. Further, **PAUAMAC7** saw no evidence of the meeting being properly advertised.

389 **PPFA** is very disappointed that DOC and MFish did not inform the public with a proper and robust process given the level of effect the draft TMP will have on the fishery. **PPFA** state that one public meeting held in Blenheim, which was not advertised and occurred less than two weeks before submissions closed, was insufficient.

390 **NSG** and **Sanford** express concern that verbal submissions made at "meet and greet" meetings will not be presented to Ministers, leading to many useful verbal submissions being left out of the decision making process.

391 **KHSFMSG** state that a lack of public notification through local papers and press releases has meant that many members of the Kaipara community have been denied the opportunity to participate in the consultation process. Others felt the rushed nature of the presentation allowed no opportunity for the level of discussion necessary to gain the information needed to make an informed decision (page 5).

392 **Option4** state that some west Auckland residents were so concerned that proposals were not well publicised that they organised a public meeting and invited MFish and local mayoral candidate John Tamihere along. The meeting attracted around 50 people, mainly locals (para 37).

393 **SE Finfish** state that the draft TMP consultation and meetings has been strongly emotive, stirring the opinion of a misinformed public and misleading politicians.

Timeframe for Consultation

394 **NSG** express concern that despite a long development period, the draft TMP is deficient in several parts and contains incomplete economic information. **NSG, SE Finfish, TOKM, NZFCF, Challenger Finfish** and **SeaFIC** state that it is insufficient to only allow a seven week consultation timeframe, making it challenging to inform and canvass the diverse inshore fishery. **SeaFIC** and **Challenger Finfish** add that the commercial fishing industry has been asked to explicitly provide information in 40 places in the IPP and **Challenger Finfish** and **NZFCF** note that it is a very busy time and that there is no justification for not granting an extension.

395 **TOKM** submit that the draft TMP consultation with iwi was inadequate and did not adequately consider the Treaty and the Fisheries Settlement. **TOKM** state that prior to undertaking consultation, and certainly well before submissions need to be lodged, officials should have provided additional material on the PBR review that MFish has commissioned, on the NIWA modelling of the proposed options for set nets and on the socio-economic analysis by Aranovus.

396 **Option4** consider the truncated timeframe and lack of opportunity for people who will be most affected by these measures to have a say prior to the early December decisions is unacceptable, particularly because many set netters are elderly, not familiar with the statutory process and are not able to read the document in the timeframe given (para 34).

Availability of Critical Information

397 **SeaFIC** consider that the draft TMP lacks detail around social impacts and population modelling, disadvantaging submitters who will not have access to important information. Overall, it is inadequate as a basis for consultation. **SeaFIC** also consider that the draft TMP is inadequate as a basis for consultation because it lacks explanations and justifications about details of marine mammal sanctuary boundaries and potential management measures, and contains contradictions in some of the tables of options.

398 **Challenger Finfish** submit that they found the consultation document to be long, repetitive and contradictory, particularly given the possibility of a “matrix of options” being chosen by the Minister. **Challenger Finfish** therefore believes that the document may not meet the requirements of consultation set out in the Act.

399 **SeaFIC** submit that they have been hampered in efforts to obtain critical information on matters such as sightings of dolphins, aerial surveys, POD surveys and risk assessments. **SeaFIC** state that this information may be critical to Ministers’ decision making and should have been included in the draft TMP.

400 **Quality Equipment** are concerned that many fishers (recreational and commercial) have not had access to any information regarding the draft TMP and how it may affect them. **Quality Equipment** feel the lack of contact from MFish is very poor in relation to the commercial sector (page 2).

401 **NZ RLIC** strongly object to the neglect of the Parliamentary process. The **NZ RLIC** consider there are risks associated with Ministerial decision making based on equivocal research information and appalling standards of consultation (page 4).

MFish comment

402 The Hector's and Maui's dolphin threat management process has been two years in the making. The draft plan was preceded by interim protection measures in 2006 and a discussion document (providing background information about dolphins and threats) earlier this year. In addition, the Government signalled the plan to stakeholders in April so people with an interest were forewarned of upcoming proposals.

403 MFish consider the process is one of the most comprehensive processes ever undertaken by the Ministry.

404 The majority of meetings around the country were held in the evening. MFish and DOC held seven public meetings on the west coast of the North Island to support the release of the TMP, and attended at least five other stakeholder meetings between New Plymouth and the wider Auckland area on request. It involved two rounds of public meetings—one to give people the chance to comment on the discussion document, the second to explain the content in the draft TMP, the consultation process and so people could provide verbal comment on the plan proposals. In addition there was information provided on both the MFish and DOC websites, summary brochures set directly to all west coast commercial fishers and other interested stakeholders, and ongoing media coverage. Similar steps were taken in the South Island.

405 The meetings were structured as “drop in sessions” where people could come in early or stay late to discuss TMP issues directly with MFish and DOC staff. There was also a formal presentation that provided more explanation about the TMP and the options proposed in it. A record was kept of all discussions and is being used in this assessment of issues and options.

406 Also, the TMP itself was broken into sections so people could focus on areas most relevant.

407 Given these factors MFish consider the seven week consultation period was reasonable. And we note that 2500 submissions were received by the deadline which indicates a large number of people had time to comment. It is ideal to allow the maximum time for consultation, but there is also a need to find a balance between making decisions in a reasonable period and allowing enough time for comment.

408 MFish acknowledge SeaFIC concerns regarding timing of availability of the socio-economic impact assessment undertaken by Aranovus and the risk assessment undertaken by NIWA.

409 The Aranovus material was received by the Ministry in November 2007. Following review and completion of the contract with the consultants the material was released for consultation to interested parties via the MFish website. Fishers who had been involved in the process were also informed by letter. Fishers were given a lengthy period to provide submissions. Analysis of the submissions received and the Aranovus report are attached to this FAP.

410 MFish agrees that it would have been ideal to have the results of the model available for inclusion in the consultation process on the draft TMP. However, this was not possible due to timing delays in development of the model and completion of the project.

411 The modelling work undertaken by NIWA has been reviewed by the Aquatic Environment Working Group which includes industry participants. In addition industry also had multiple representatives on the expert group which was involved in all critical decisions on the details of the modelling. The results of the model are discussed in more detail in a separate section later in this paper. MFish consider the amount industry involvement and knowledge of the project acceptable in this instance.

Implementation

Timing and use of Gazette Notice

412 **SeaFIC** state that they are concerned that it is intended to put measures in place by Christmas using a Gazette Notice, followed up with regulations. **SeaFIC** submit that this process appears to be driven by political expediency at the expense of proper accountability and sound process. **SeaFIC** do not consider it appropriate to use a Section 11 Gazette Notice, given the potential impact on property rights and the lack of parliamentary control and scrutiny of the Gazette Notice regulation-making process.

MFish response

413 MFish note that Gazette Notices are the basis of the TAC setting process, which is the most fundamental impact on property rights under the QMS. The Act provides for use of Gazette Notices in specific circumstances [REDACTED]. However, the use of a Gazette Notice was proposed primarily to allow measures to be implemented before Christmas under the pre-Christmas original timetable. In late 2007 you agreed to a revised timetable allowing advice to be submitted in March to give sufficient time to analyse the large number of submissions received. Under the revised timetable you have the choice to implement measures using regulations. MFish strongly recommends the use of regulations to promulgate any measures decided on as the regulatory process is more robust and will likely stand a greater degree of legal scrutiny.

Education

414 **F&B (Ashburton)** request an education regime to ensure compliance with MMS regulations (page 1).

415 **F&B (Marlborough)** state that good education programmes using a wide range of media are needed to inform and show commercial and recreational fishers how to use best fishing methods, latest technologies (pingers etc) and explain the rules (page 1).

416 **Greenpeace** (page 3) and **F&B (Golden Bay)** (page 4) want an education and enforcement regime to ensure that commercial and recreational fishers do not breach any bans.

417 **NZRFC** is angry that responsible fishers are being penalized for the actions of a few who are ignorant and already breaking laws that are not adequately enforced. They want an educational programme established on the correct use of set nets (para 60).

418 **F&B (Hastings & Havelock North)** state that education in itself is not enough and that legislation is required (page 1).

ANNEX THREE: OUTLINE OF THREATS

Human induced threats to Hector's dolphins

Fishing threats

419 Because Hector's dolphins have a close inshore distribution, their range overlaps with commercial and amateur set net fisheries, and inshore trawl fisheries. Fishing-related mortality through net entanglement is recognised as a significant threat to Hector's dolphins. Further information about fishing threats to Hector's dolphins is provided below.

Set netting

420 Set netting involves the placing of a net, either in midwater, or on or near the sea floor. Set nets are made from fine nylon, so fish can't see them. They may be up to 10m high and several hundred metres long. These nets catch marine life that swims into them and gets tangled. Fish bigger than the net's mesh size get tangled in the net by their gills or fins; smaller fish swim through the net. Set netting usually occurs in shallow waters within a few miles of the coast.

421 The vulnerability of Hector's dolphin to net entanglement, particularly in inshore set nets, has been established through a combination of interviews with fishers, independent observer programmes and necropsies of bycaught and beach-cast animals.

422 The summer period is when dolphins tend to be closer inshore, and is therefore the time of year when Hector's dolphins are at most risk of set net entanglement. In the South Island, this summer inshore movement coincides with greatest amateur and commercial set netting effort, particularly for flatfish, red cod, mullet, butterfish, moki and small sharks.

423 The DOC incident database indicates that 32% of the total reported incidents, and 63% of incidents where the cause of death was able to be assessed, are attributable to set net entanglement¹⁸; indicating that set netting is the greatest known cause of human-induced Hector's dolphin mortalities.

¹⁸ Since 1921 when the first incident was recorded. Natural mortalities are included in the database.

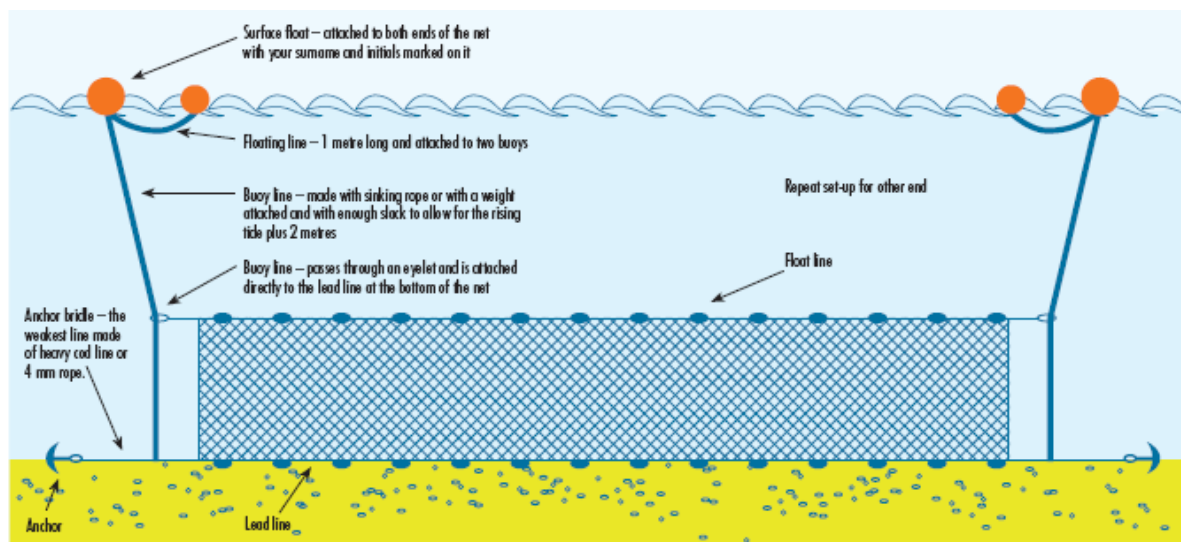


Figure 1: Features of a set net

Trawling

424 Trawling involves towing a specialised net. Steel paravanes (trawl doors) are adjusted to “fly” through the water in opposing directions and hold the mouth of the net open. The net is set to herd fish into its mouth, and eventually into the cod end (Figure 2 below). In New Zealand, most trawling is carried out near the bottom, and in water depths ranging from around 10 metres to more than 1000 m deep.

425 Hector’s dolphins have been known to occasionally become caught by inshore trawl vessels where nets are towed along the sea floor or in midwater.

426 Total reported instances of Hector’s dolphins caught in trawl nets are low compared to set nets. However, the focus of observer programmes and interview programmes to assess dolphin bycatch has tended to target set net fisheries. Nevertheless the incident rate (per day fishing) appears to be lower for trawl than set net fisheries.

427 Since 1921, there have been 19 reported dolphin mortalities definitely attributable to trawling (around 9% of incidents with a known cause of death). All of these incidents were in South Island trawl fisheries and occurred within 2nm from shore.

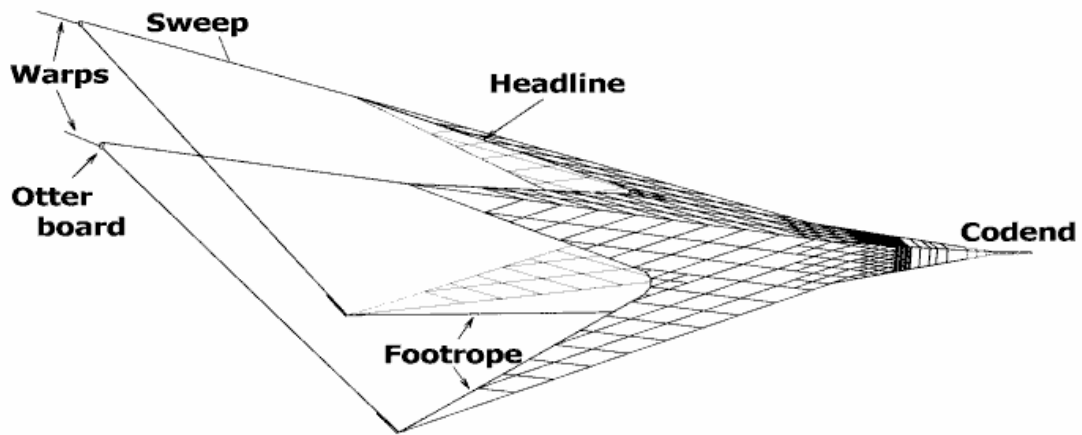


Figure 2: Features of a Trawl Net¹⁹

Drift netting

428 Drift netting is a form of set netting where nets are not anchored to land or the sea bed so they drift freely with the current. Drift nets are included in the definition of set netting but are distinguished from the set net method described above. Because drift nets drift freely with the current they do not roll up like set nets commonly do. This is what presents the risks to Hector's dolphins, because any net that drifts into the dolphins range may entangle them.

429 There is a current drift net prohibition that exists in New Zealand waters (Driftnet Prohibition Act 1991). The distinguishing criteria for drift netting that is prohibited is that nets are, when either singly or tied or connected together in combination with other nets, more than 1 kilometre in length. Drift net fishers fishing at the Waikato River (where drift nets are occasionally used) use much smaller nets not covered by the Driftnet Prohibition Act 1991.

430 Drift netting threats relate specifically to the Maui's dolphin population. Commercial and non-commercial fishers have used drift nets to catch mullet at the Port Waikato. There has been one report of a possible Maui's dolphin entanglement in a lost drift net. However, use of these nets has declined recently.²⁰ All drift net fishing occurs at Port Waikato (including the Waikato River) but it is a short distance out to sea, so lost nets can float out with the current.

Craypotting/Rock Lobster Potting

431 Potting involves setting a baited trap on the seafloor. These traps (pots) are either made from nylon mesh; or are made from steel and wire (Figure 3). There have been three known incidents of Hector's dolphins becoming entangled in a rock lobster pot line²¹. All of these incidents have occurred in the Kaikoura region. This is likely to be because the area around Kaikoura is highly tidal and has a high level of potting intensity; consequently the rope used to attach the rock lobster pot to the buoy is longer than usual to prevent loss of pots. The rope hangs loose in the water at low tide creating a potential situation where Hector's dolphins can become entangled.

¹⁹ Source: Australian Fisheries Management Authority. South East Trawl Fishery Bycatch Action Plan (2001). <http://www.afma.gov.au/information/publications/fishery/baps/docs/setbkgd.htm>.

²⁰ Anecdotal information suggests that this is because of low quality of catches.

²¹ One incident in: 1989; 1997; and in 2004. All three resulted in death of the dolphin involved.

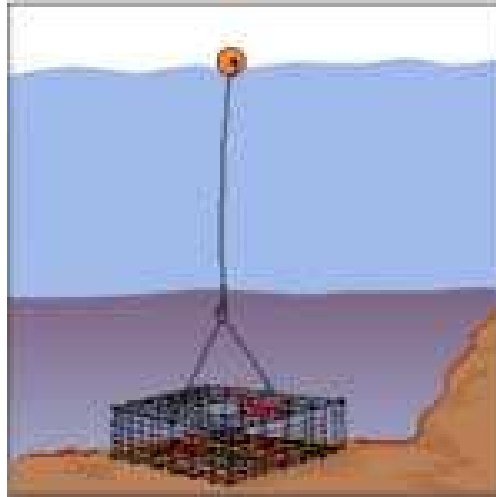


Figure 3: Rock Lobster Pot

Non-fishing related threats

432 There are a number of non-fishing related threats to Maui's and Hector's dolphins. These threats are not your legislative responsibility but useful as context. These are seen as a major component for the management of Hector's and Maui's dolphin. These threats include:

- a) Disease
- b) Impacts associated with interactions between the dolphins and vessel operations,
- c) Permitted and non-permitted tourist vessels
- d) Pollution from discharges into the coastal marine area
- e) Plastic debris generated from dumping of both urban and marine based waste

433 A range of nationally consistent actions are proposed to mitigate non-fishing threats. Measures include investigating areas that may need vessel speed restrictions, a four year moratorium on the issuing of marine mammal viewing permits and the inclusion of Hector's and Maui's dolphin habitats in the review of the New Zealand Coastal Policy Statement.

Screening of threats for management

434 In order to prioritise the most serious and manageable threats for treatment, the Hector's dolphin Expert Panel undertook a first cut prioritisation of the threats they had identified. This was done with respect to two broad dimensions:

- a) Impact – the significance of the threat to Hector's dolphins
- b) Treatability – the extent to which the threat can be treated

435 Threats that were identified by the Expert Panel as being of lower significance and/or not treatable (or treatable with difficulty) were: craypotting (rock lobster potting); shooting; climate change; disease; predation; parasites; stochastic effects on small populations; weather and inbreeding. With the exception of craypotting, these threats will not be explored further with regard to threat management options in this draft TMP. MFish and DOC consider that consideration of management measures for craypotting/rock lobster potting is warranted because entanglement in pot buoy lines is a known cause of Hector's dolphin mortality.