

APPENDIX ONE

New Information: Submissions and Analysis

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Background

1 On 20 March 2008, MFish and DOC made available two sets of new information relevant to consultation on the draft TMP. One set of new information related to a population risk analysis done by NIWA, which was not complete (and hence unavailable) when the draft TMP was released for public consultation. The other related to population survey and sighting information collated by DOC and an update to the Hector's and Maui's dolphin incident database to include recent reported mortalities.

2 Representative stakeholder groups were sent a letter informing them that the new information was available on the MFish website, and were given four weeks to provide comments on the information as it pertained to the draft TMP.

NIWA risk analysis

3 NIWA's risk analysis examined the effect of different management strategies on the sizes of Hector's and Maui's dolphin populations. The preliminary report was considered by the Aquatic Environment Working Group (AEWG) in September 2007. The AEWG agreed that the modelling had been done very skilfully and appropriately. Nevertheless, the AEWG noted that because of the assumptions and uncertainty in the model projections under different management strategies, there was no agreement on the quantitative or qualitative benefits of the results of the model for management purposes.

4 Accordingly, in line with MFish processes for working groups, the Chair of the working group made comment on the management utility of the report. The Chair's memorandum was also made available for stakeholder consideration and comment, and is attached as Annex 1.

DOC survey, sighting and incident information

5 Subsequent to release of the draft TMP, DOC collated information from recent aerial and boat surveys that form part of DOC's ongoing Hector's and Maui's dolphin research programme. DOC also collated Maui's dolphin sighting reports and updated the DOC incident database that records reported Hector's and Maui's dolphin mortalities.

6 A summary of stakeholder comments on the new information and MFish's response to these in the context of the Minister's decision-making are set out below.

List of Submitters

Name	Acronym/Abbreviation
Akaroa Harbour Recreational Fishing Club	AHRFC
Anderson Lloyd Lawyers	ALL
[REDACTED]	
[REDACTED]	
[REDACTED]	
Care for the Wild International	CWI
[REDACTED]	
[REDACTED]	
Environs Holdings Ltd	EHL
[REDACTED]	
[REDACTED]	
Egmont Seafoods Limited	ESL
[REDACTED]	
[REDACTED]	
[REDACTED]	
New Zealand Recreational Fishing Council	NZRFC
Option4	
[REDACTED]	
Royal Forest and Bird Protection Society of New Zealand Inc.	F&B
[REDACTED]	
[REDACTED]	
South East Finfish Management Ltd	SE Finfish
[REDACTED]	
The New Zealand Seafood Industry Council Ltd	SeaFIC
The Northern Fisheries Management Stakeholder Company Limited	NSG
Te Ohu Kaimoana	TOKM
[REDACTED]	
World Wildlife Fund-New Zealand	WWF

Note:

Many of the submissions received on the new information make direct reference to initial submissions provided in response to the draft TMP. This summary considers the specific views expressed to the new information only.

General comments

7 Many submitters make reference to their initial submissions to the draft TMP to provide a context when responding to the new information.

8 **SeaFIC** states NIWA's risk analysis does not provide an accurate representation of past and present status of the four dolphin populations (under existing management measures) and is unable to provide useful guidance about the likely effects of the management measures proposed in the draft TMP. **SeaFIC** also states NIWA's risk analysis predicts that none of the populations are at imminent risk from collapsing.

9 **TOKM** considers the new information does not provide evidence to justify additional management measures, and that their conclusions and recommendations outlined in their initial submission remain unchanged.

10 **EHL** states that NIWA's risk analysis confirms that all proposed options (other than status quo) should increase the Hector's and Maui's dolphin population size.

11 **AHRFC** is pleased that a thorough appraisal of the available data on Hector's dolphins is now available, although it notes that no reliance can be placed on the analysis if the input data are inaccurate, insufficient or statistically biased. It notes that all of these comments apply to NIWA's risk analysis, and therefore its predictions must be treated with caution. It adds that it would be unfair to impose fishing restrictions on the industry based on inaccurate predictions.

12 **Option4** objects to the "ad-hoc" consultation process to consider the new information.

13 **NZRFC** considers that the new sightings information is unacceptable and inadmissible because the information has not been peer reviewed.

14 [REDACTED] states the new information essentially confirms [REDACTED] research that predicts Hector's and Maui' dolphin populations have substantially declined due to fisheries bycatch. The information indicates populations will continue to decline under current management and could recover if completely protected. [REDACTED] supports a precautionary approach to decision-making where there is uncertainty about the effectiveness of different management measures.

15 **WWF** state that its initial submissions raised a number of concerns about the draft TMP and the release of the new sighting and modelling information go somewhat to allaying these concerns. It notes that the draft TMP downplayed or minimised the extent of fishing threats and the need for management action, as well as selectively reporting sighting/survey data and the available information. It notes that it is pleased DOC has released maps of sightings that include WWF's own sightings network. However, it expresses concern that the level of sightings within harbours and alongshore distribution is still not adequately presented in the new information.

16 **CWI** states the new information supports the concerns and comments raised in its initial submission on the draft TMP and therefore supports the use of the Precautionary Principle to give greater protection to Hector's and Maui's dolphins. CWI notes that while there is uncertainty about the level of fishing-related mortality in the commercial gillnet fishery, there is no such uncertainty about the extreme status of dolphin populations, past declines in population size, the threats of fishing, and predicted population decline under the current management approach.

17 **F&B** states the new information reinforces its call to ban set netting throughout the range of Hector's and Maui's dolphins.

18 [REDACTED] states the new information confirms the worst case scenario about the plight of Hector's and Maui's dolphins and support banning gill netting and trawling within their habitats.

19 Several individual submitters [REDACTED] express disappointment that you accepted new information. They note the new information is technical in nature and they are not in a position to comment on NIWA's risk analysis.

20 **ALL** (acting on behalf of Clifford Bay Marine Farms Limited) states that set netting remains the greatest threat to Hector's and Maui dolphins, and therefore seeks various amendments to the draft TMP in recognition of their client's marine farm interests in Clifford Bay.

21 A number of submissions [REDACTED] were received that do not provide comments on the new information. Rather, these submissions include statements on the need to impose additional fishing restrictions to give greater protection to Hector's and Maui's dolphins.

Process

Context of the information

Submitter comments

22 **SeaFIC** accepts that the new information does not alter the options presented in the IPP, and that it forms part of the pool of available information. However, it submits that MFish sought public comment on the new information without reconciling it with existing information in the draft TMP or explain its "weighting or position" to enable submitters to meaningfully comment. **SeaFIC** questions the process used to seek submissions as it believes the new information contains technical and detailed information without sufficient explanation. It notes it is unclear whether the new information is more relevant to decision-making than the material covering the same matters in the draft TMP.

23 **SeaFIC** notes the lack of an overall context and supporting analysis by DOC between the new information and that presented in the draft TMP is particularly concerning given MFish and DOC will provide separate advice to respective Ministers. It raised concerns the two departments will not use a common set of information in the preparation of ministerial advice. In addition, it notes that submissions were to be sent to MFish, and therefore, it is unclear whether the Minister of Conservation will use the information when making decisions on the draft TMP.

24 **SE Finfish** has concerns about the consultation process to consider the new information. It also expresses concerns about a lack of context as to how the information will be integrated in to the already consulted draft TMP, and the effect this information will have on the proposed TMP.

25 **SE Finfish** states the new information is of a "highly technical nature" and believes the ability for submitters to provide an informed response is "seriously compromised".

26 **ESL** notes a lack of overall context in which to consider the new sighting and survey information.

27 **NSG** states that stakeholders have been asked to consider new information without clear explanation on the linkage with the draft TMP. It is therefore difficult to understand what impact this information has on the options presented in the draft TMP.

28 **TOKM** considers that insufficient information was provided to understand the context of the new information as the material, website and officials had not made this clear.

29 **NZRFC** notes that the sightings information was provided with no information to go along with it.

30 **CWI** expresses concerns that NIWA's risk analysis was not publicly available until after the consultation period on the draft TMP.

MFish/DOC response

31 MFish and DOC note that the TMP is a joint process and that although submissions were to be sent to MFish, DOC is aware of the comments on the "new information" consultation. MFish has provided DOC with copies of all submissions, and comments on sightings and the incident database are noted by both MFish and DOC.

32 MFish disagrees with submitters' comments that the new information was made available without a full context or explanation on how this information would be used by you. The MFish website clearly stated that:

"The new information is relevant to the Minister of Fisheries decision on whether new and/or additional measures are necessary to avoid, remedy or mitigate the effect of fishing-related mortality on Hector's and Maui's dolphins. The Ministry invites comment on both sets of information as they pertain to the draft TMP."

33 MFish is confident the above statements provide submitters with clear guidance the new material forms part of available information on Hector's and Maui's dolphins, and that it would be available to the you when making decisions on the options set out in the draft TMP. The above statements also make it clear that submitters should consider their comments in relation to the draft TMP, and this includes the proposed options presented within that plan.

34 The purpose of the consultation process was to seek submitters' views on the relevance and weighting of the information. The information related to a scientific risk assessment based on modelling work that contained a number of assumptions and clearly identified uncertainties in information and also anecdotal sightings information from DOC of particular relevance to the Maui's dolphin. The draft TMP already contains lengthy discussion about application of sightings information which should enable stakeholders to understand how MFish is using this information to inform the Minister. MFish also considers the relevance of a scientific assessment of risk to each Hector's population should be intuitive.

35 MFish notes submitters' views that the information was presented in a way that made it difficult to interpret (primarily due to its technical nature) and this hindered their ability to provide meaningful response.

36 MFish agrees the NIWA's risk analysis is highly technical in nature. However, the intention of the consultation process was not to primarily seek stakeholder views on the technical aspects of the new information which had previously been canvassed through the AEWG process, but rather to seek comment on the general applicability of the modelling work to your

decision-making on dolphins, given the memo from the Chair of the AEWG. Nonetheless, MFish notes that in describing their position on the relevance of the modelling work some submitters have chosen to outline concerns with technical aspects of the document in some detail.

Process failure

Consultation period

Submitter comments

37 **ESL, NSG and SeaFIC** consider the consultation period was unreasonable and inadequate. **SeaFIC** notes the consultation period included the Easter and school holidays, as well as a “plethora” of MFish technical working groups. This required **SeaFIC** to withdraw its participation away from MFish’s working group process to be able to provide a submission on the new information, and this has disadvantaged both **SeaFIC** and shareholders.

38 **ESL** is critical of the timing and timeframe to provide comments on the new information. It notes that government has not met its own timeframe but expects stakeholders to provide information within unrealistic timeframes. It highlights that the new information has been poorly presented and distributed and questions whether it really is information.

MFish Response

39 MFish acknowledges the views of a number of submitters regarding the duration and timing of the consultation period for stakeholders to consider the new information.

40 However, MFish considers the consultation period was reasonable and sufficient given the background and the process where the information was developed, as well as the nature of the information. MFish notes NIWA’s risk analysis had been through a robust scientific analysis through the Hector’s Dolphin Technical Working Group and AEWG. The fishing industry and various NGO groups were familiar with the new information through this process and have provided comments on the scientific merits of the work through the working group process and through submissions. MFish also understands that some of the submitters who comment on the short timeframe have had access to an earlier version of the DOC sightings database that has been made publicly available through the Official Information Act (OIA) in advance of consultation on the “new information”¹.

NIWA risk analysis information

Submitter comments

41 **SeaFIC** states the consultation process has improperly circumvented the AEWG process in order to meet deadlines imposed by the TMP process. This prevented opportunity for the AEWG to request additional information or analyses as part of a review of the NIWA model. **SeaFIC** notes the failure for AEWG to consider the risk analysis is inconsistent with the group’s existing and proposed terms of reference in respect to process and MFish’s statement to industry that recommendations from the risk analysis would be derived from AEWG. **SeaFIC** contends the AEWG’s reported position on the risk analysis does not accurately portray the diverging views held by the various members and calls into question the wider integrity and role of the AEWG process.

¹ Sightings information was sent to SeaFIC on 15 February 2008.

42 **SeaFIC** has undertaken an independent technical review of the NIWA risk analysis report in response to a failure of the science process to fully consider the risk analysis information (refer SeaFIC submission). The findings of this review are summarised below under Technical Comments – NIWA risk analysis information.

43 **SeaFIC** considers the process to develop and review the NIWA risk analysis was not robust for the following reasons:

- a) MFish failed to provide a clear timeline and clear objectives for developing the model.
- b) SeaFIC scientists did not have an opportunity to contribute to the compilation of the final report because of timing constraints despite being involved during the initial development of the model. As such, these scientists do not agree with all of the report's conclusions.
- c) A failure to secure necessary sets of biological information for input into the model due to data ownership and intellectual property issues despite data being collected through publicly funded research programmes. This led to a reliance on limited information from the Banks Peninsula model [a model that was developed a number of years ago for decisions on management measures for Maui's dolphins].
- d) Failure of information sets to be fully reviewed by the Hector's Dolphin Technical Working Group.
- e) Failure by DOC and MFish to make new information on the Te Waewae Bay population available for the model, and the lack of peer review of this information by the Hector's Dolphin Technical Working Group.

44 **SeaFIC** believes the above issues prevented a full review of the final report by both Hector's Dolphin Technical Working Group and AEWG. **SeaFIC** accepts that while the usefulness of the model projections are limited in guiding management decisions, it does provide important information in exploring the limitations of existing data and defining the best available information of fishing impacts on dolphin populations.

45 **ESL** states the AEWG chairperson's comments on the NIWA risk analysis does not reflect a consensus of views, and therefore questions the working group process.

46 **NSG** states the AEWG chairperson's comments on the NIWA risk analysis fail to accurately represent the diverse range of views held by members. This creates confusion regarding the risk analysis, and AEWG process, and the ability for NSG to provide meaningful comment.

47 **SE Finfish** is extremely concerned that MFish has "manipulated" AEWG's position on the NIWA risk analysis in the absence of consensus from group members.

48 **TOKM** expresses significant concerns about the integrity of NIWA's risk analysis and the process used to develop the model. It notes the risk analysis provides no materially information to change its initial views.

49 [REDACTED] is critical of the process used to develop the NIWA risk analysis noting that most of the participants in the AEWG and Hector's Dolphin Technical Working Group

were from the fishing industry, DOC, MFish and NIWA. ■ noted problems in decision-making during meetings of these groups, and potential conflict of interest issues.

MFish response

50 MFish notes industry's concerns about the approach to develop and review NIWA's risk analysis, including the chairperson's commentary on the findings of the analysis. MFish considers the process to develop and review the model was robust and inclusive of interested parties. The Hector's Dolphin Technical Working Group met on five occasions to develop and review the risk assessment model (31 August 2006; 8 March 2007; 23 May 2007; 19 June 2007; and 17–18 July 2007). This was followed by a full-day meeting of the AEWG, on 17 September 2007. While the AEWG recognised that some aspects of the work could be done differently, and some likely biases were identified, the discussion did not, in the Chairperson's view, identify any fatal flaws in the approach taken. In fact, there was general agreement that the work had been done very skilfully. It was highlighted at the start of the process to develop the model that the paucity of information was a major issue, leading to very substantial uncertainty in the model projections and a need for the risk analysis to be communicated to managers with appropriate caveats.

51 MFish accepts that no clear consensus was reached by AEWG when considering the risk analysis. Whilst a common view on the analysis would have been preferable, it is not surprising a clear consensus was unable to be obtained given the wide range of interests and views held by the various AEWG members. The revised guidelines for working groups generally, and AEWG specifically, provide for the Chairperson to decide that a consensus cannot be reached and, subsequently, for the Chairperson to decide on the merits and applicability of the work.

Survey/sighting information

Submitter comments

52 **SL, NSG, SeaFIC, SE Finfish** and **TOKM** express concerns about the process to consider the new sighting/survey information, and the nature and integrity of this information. These submitters highlight that much of the new information had changed during the consultation period and this seriously compromised stakeholders' ability to provide a meaningful response, as well as questioning the credibility of the new information.

53 **SeaFIC** states that DOC made no attempt to reconcile the new survey/sighting information with the draft TMP and identifies inconsistencies between the different sets of information.

54 **SeaFIC** contends that AEWG should have been given an opportunity to review the new information prior to public consultation given the potential significance of the new information to management decisions.

55 **SeaFIC** also states that DOC initially failed to provide all relevant information on its website, and that this was only made available to SeaFIC following a request under the OIA. It notes that DOC endeavored to rectify this issue part way through the consultation process, but failed to publicly notify the public of the availability of this information. This has significantly disadvantaged submitters given the substantially different sets of information on the website. **SeaFIC** expresses concern that DOC's failure to provide all information when first released on its website has prevented submitters from being able to fully interpret the new information and assess the reliability of the new information.

56 **SeaFIC** is also critical that no extension to the consultation period has been granted given the availability of the additional information. It also raises concerns that the information has been periodically amended during the consultation.

57 **SeaFIC** expresses concern that MFish and DOC has failed to provide any documentation to support sighting information of Maui's dolphins in Manukau and Kaipara Harbours. **SeaFIC** also expresses concerns that much of the new information has not be subject to scientific peer-review through the appropriate working group.

58 **SeaFIC** contends the maps posted on the DOC website include insufficient information on survey specification and proper scientific analysis to make an informed submission, including appropriate weighting of the various information types. **SeaFIC** notes that without this information, the public is mistakenly given the impression that dolphins are distributed more widely than might be the case.

59 **SE Finfish** is extremely concerned the new information has not been considered by the AEWG.

60 **NSG** expresses concerns about the DOC sighting database, as the database is unclear whether it reports historical or recent sightings, and the validity of each sighting. This prevents NSG from providing meaningful comment.

61 **NZRFC** consider that the inclusion of unpublished information which has not been peer-reviewed is inadmissible at this point in time. NZRFC also note that there has been no substantiation of the 2006 and 2007 offshore aerial sightings, and that none of their members have seen Maui's dolphins more than 3.5 nm offshore.

DOC/MFish response

62 DOC and MFish acknowledge that some of the sightings information has been changed or added to over the duration of the consultation. Initial information comprised of two maps illustrating all available sighting and research survey information. Additional information (two maps and two spreadsheets) was subsequently included on the website. Additions were made to the information due to the completion of research surveys during the consultation period and some historical research data were also added. The historical data is, and has been, in the public domain.

63 While unfortunate, the additional information was included to provide stakeholders with greater clarity in which to consider the new material, and MFish understands from DOC that most of the "new information" on the dolphin populations was not new and was already in the public domain (for example, the incident database and most of the sightings information). MFish notes that all submissions were received after the additional information become available on the DOC website.

64 MFish acknowledges that ideally the sightings/survey information would have been subject to verification to improve certainty around its validity. Nevertheless, MFish notes that the aerial surveys were undertaken by DOC scientists and these non-reviewed sightings constitute part of the currently available information on Maui's dolphins' distribution. However, because the findings have not been peer-reviewed you should exercise caution when determining how much weight to give the new sightings information as part of his decision-making.

Technical comments

NIWA risk analysis information

Submitter comments

65 **SeaFIC** states that it has undertaken an independent review of NIWA's risk analysis and has identified a number of problems and concerns. **SeaFIC** provides a large number of comments and statements of a highly technical nature. This section does not attempt to summarise these technical matters and direct reference should be made to the submission itself.

66 **SeaFIC** submits that the model does not provide an accurate representation of past and present status of the four dolphin populations (under existing management measures) and is unable to provide useful guidance about the likely effects of the management measures proposed in the draft TMP. **SeaFIC** adds that the analysis cannot establish whether populations are increasing, decreasing or remaining stable, and that the model's predictions are unrealistic and not supported by comparisons with other information.

67 **SeaFIC** also notes that:

- a) They have concerns with the model structure in which dolphin bycatch is inevitable whenever dolphins and fisheries share a model stratum, irrespective of measures to reduce interactions.
- b) A temporally and spatially constant bycatch rate and a temporally invariant distribution of fishing effort overestimates all bycatch observations since 1998 and implies an assumption that no historical management measures (both voluntary and regulated measures) have had any effect.
- c) The inability of the model to estimate dolphin productivity from available data does not allow a credible assessment (whether quantitative or qualitative) of the current status of dolphin populations or the likely effects of the management measures considered.
- d) There has been a failure to consider the credibility of the outputs in light of other information on both historical population abundance and bycatch rates.

68 **SeaFIC** disagrees with AEWG chairperson's conclusion that "the work can provide qualitative guidance as a risk assessment". Rather, **SeaFIC** notes the model does not provide either a quantitative or qualitative approach to adequately assesses the status of the various dolphin populations at present (under existing management measures) and is unable to provide useful guidance about the likely effects of the management measures proposed in the draft TMP. **SeaFIC** does consider that the model is very relevant in the context of measures proposed under the Fisheries Act, as it represents the most comprehensive attempt to compile all available information into an integrated population model.

69 **SeaFIC** notes that while the model does not represent a useful assessment of risk to dolphins under the *status quo* or proposed measures, it agrees the qualitative patterns in model outputs are generally "not optimistic" regarding the fate of dolphin populations. It highlights that these patterns arise because the model structure imposes a direct, and invariant, relationship between fishing effort and dolphin bycatch. This results in predictions that do not fit observational data since 1998 and contrary to other information. **SeaFIC** notes the inability for the model to

credibly assess the current status of Hector's and Maui's dolphin populations result primarily from an ongoing failure to collect relevant data.

70 **SeaFIC** questions the levels of projected captures for the east and west coasts of the South Island. It notes these predicted levels are easily testable and a single year of comprehensive observer coverage in these areas could establish whether or not they are realistic.

71 **SeaFIC** highlights that even under the most pessimistic outcomes in the model's protections for the four dolphin populations; none are in imminent danger of collapse or extinction.

72 **TOKM** expresses concern that the model cannot accurately predict dolphin populations due to a failure to vary predicted bycatch, irrespective of any measures imposed to reduce interactions. It notes, however, the model demonstrates no severe risks to the populations that require action.

73 **TOKM** highlights the need to collect additional information to provide greater integrity to the model, and requests that decisions are not made until urgent steps are taken to fill information gaps and more suitable management measures are developed. These information gaps include better information on actual dolphin bycatch (through observer coverage or video monitoring) and dolphin distribution and habitat use (using satellite tagging). **TOKM** requests that government works with industry on addressing these information gaps.

74 **TOKM** states it is prepared to convene a meeting with suitable industry participants to progress this matter urgently. This approach provides the most productive course of action in the short-term to appropriately protect the dolphin populations.

75 **ESL** notes the AEWG chairperson's comments on the NIWA risk analysis highlights the uncertainty of the risk analysis. It contends that the information should be withdrawn and not used in decision-making on the management of Hector's and Maui's dolphins.

76 **AHRFC** notes the model provides a higher estimate of the population size on the east coast of the South Island because it takes into account dolphins outside 4nm from shore. However, it is likely to underestimate the number of dolphins offshore as they are less obvious than when closer to shore. **AHRFC** notes that its preferred response to the draft TMP for the east coast South Island is supported by NIWA's risk analysis that predicts a population increase. However, it notes the analysis has failed to truly reflect the populations due to insufficient information, and therefore should be rerun with realistic fishing-related deaths.

77 **AHRFC** states NIWA's risk analysis model should be rerun for the Te Waewae population as it does not include the most recent population estimate.

78 [REDACTED] states that MFish should consider the professional opinions of Hector's dolphin scientists and the wealth of information available to guide decision-making that is objective and scientific. He considers this approach is supported by the AEWG chairperson's report on the NIWA model.

79 [REDACTED] notes NIWA's risk analysis includes many assumptions in response to paucity of information. He submits information on amateur set netting to address this matter and includes:

- a) Information of historical amateur set netting practices – fishers targeting butterflyfish set nets in a way that did not interact with dolphins, although past

interactions did occur with nets set off beaches to target rig that would be stranded at low tide and with long soak times.

- b) Restrictions on set netting such as seasonal prohibitions, staying with nets, and specifying net design, together with increased public awareness has drastically reduced dolphin entanglements.

80 [REDACTED] resubmits information that relates to DOC's Hector's/Maui's dolphin incident list.

81 [REDACTED] believe the new evidence is based on a very unstable computer model based on unreliable and emotive information. They consider the new information ignores current research and reliable anecdotal information.

82 **CWI** submits NIWA's risk analysis confirms that bycatch in gillnet and trawl fisheries is the main threat to Hector's and Maui dolphins. It believes the model's findings go well beyond the options presented in the draft TMP as Option 3 is insufficient to remove all forms of fishing-related mortality. It believes the model confirms research by Assoc. Prof. Slooten that dolphin numbers have dramatically declined, and will continue to do so under the current management approach. It notes the model provides evidence of substantially higher probabilities of population growth under a zero fishing-related mortality level. **CWI** note the Maui's dolphin and SCSI Hector's dolphin populations are at an extremely high risk of extinction under current fishing-related mortality levels.

83 **CWI** contends that NIWA's risk analysis includes several assumptions that prejudice results and interpretations against effective actions to protect Hector's and Maui's dolphins against fishing mortalities. It wishes to draw attention that two of the five authors of NIWA's report are associated with the fishing industry (SeaFIC) and therefore subject to a clear conflict of interest. It believes the report may have been influenced by SeaFIC's policies and raises a number of examples where bias may have been incorporated into the report.

84 **CWI** also raises a number of concerns about NIWA's risk analysis including failures to include risk posed by fishing on species that form the dolphins' diet (ie, flatfish, yellow-eyed mullet, grey mullet, and eels) and dolphin mortalities within North Island harbours (despite substantiated evidence of dolphins inside harbours and around New Plymouth), as well as not highlighting the unsustainable nature of the existing populations.

85 **F&B** supports NIWA's risk analysis and contends the Minister should act cautiously before the model's predictions are optimistic. The risk analysis does not include all possible fishing impacts (it does not include recreational gillnetting, trawling or cray potting) and will underestimate the actual number of fishing-related mortalities. Total mortalities could be as high as 269-367 dolphins once other fishing methods are taken into account. **F&B** believe the projections underestimate real certainty in current status and future outcomes.

86 [REDACTED] contends the NIWA risk analysis confirms previous research undertaken by Otago University. The analysis confirms predictions that Hector's and Maui's dolphin populations have substantially declined due to fisheries bycatch, and will continue to do so under current management. [REDACTED] highlights the risk analysis has been developed and reviewed in very different ways compared to Otago University research, and notes the NIWA analysis has undergone less scientific peer review.

87 [REDACTED] states the conclusions of the NIWA risk analysis are optimistic because the analysis did not include bycatch in recreational gill netting, trawling, North Island harbours, as well as not including impacts of fishing on the dolphins' prey species.

88 WWF highlights NIWA's risk analysis supports the existing information about the serious threats to dolphins. It notes the model predicts that dolphin populations will continue to decline under the current management approach, and that the options presented in the draft TMP do not go far enough to provide sufficient protections to these populations. It believes the model's assumptions are overly optimistic and do not truly reflect the full range of dolphin distribution (e.g. Tasman and Golden Bays), the true level of fishing mortality, and the nature and extent of required protection.

89 WWF therefore believes Option 3 should be amended to reflect the species' natural and historic distribution. It notes the high public support for a total set net and trawl fishing ban to provide greater protection to dolphins based on recent WWF/Colmar Brunton opinion poll and petition.

MFish response

90 Forest & Bird include in their submission an extrapolation of total fishing mortality from estimated commercial set net mortality from the NIWA risk assessment model based on DOC entanglement data. MFish cautions against use of such extrapolations given that some of the entanglement data were collected prior to the establishment of closed areas (both regulatory and voluntary) and hence do not apply to the current management.

91 SeaFIC in their submission acknowledges that the risk assessment model (as described by Davies et al. 2008) was a good approach given the data limitations and an improvement over previous modelling work on Hector's and Maui's dolphins.

92 SeaFIC's comments highlight the level of uncertainty in the risk assessment model including: bycatch estimations, spatial representation of fishing effort and dolphin distribution, survival estimates, and the lack of data on life history characteristics. MFish have undertaken an additional review of the risk assessment model base on SeaFIC's submission. This review by one of the junior authors of Davies et al. (2008) also highlighted the data deficiencies and resultant uncertainty in the model outputs.

93 MFish agrees that the model is uncertain, but considers that it is not necessary to address the individual areas of uncertainty point by point particularly since we are not proposing that the model be used for choosing between alternative management actions. Despite high levels of uncertainty it seems unlikely that it would be possible to produce a more definitive model at the present time.

94 MFish agrees that the risk assessment model results can not be used in a management sense beyond comparing and contrasting the qualitative trends in the populations resulting from status quo management and any of the alternative management options. The risk assessment suggests that the WCSI and ECSI Hector's dolphin populations are more likely to increase than decrease under any of the alternative management options, but cannot differentiate between the options.

95 For Maui's dolphins in WCNI, the status quo management regime already includes substantial protection for dolphins, and the likelihood of continued decline depends strongly on the assumed level of productivity.

96 In the case of the SCSI Hector's dolphin population, new abundance survey information released by DOC since the completion of the risk assessment model suggest that the model results cannot be used in either a quantitative or qualitative sense.

97 One of the values associated with any modelling exercise is that it highlights gaps in the knowledge supporting the model. The risk assessment model has highlighted data gaps that are critical and produce uncertainty in model outcomes, such as life history characteristics, abundance surveys, and bycatch estimates. Future data collection programmes need to address these gaps (see Research section).

98 MFish agrees that there is benefit in collecting additional information to improve what is known about the effects of fishing on Hector's and Maui's dolphins. However, you cannot use uncertainty as a reason to delay taking necessary action (refer to Introduction, '*Factors to be considered: uncertainty in information*' (page 6)).

Survey/sighting information

Submitter comments

Research sightings

99 **SeaFIC** highlights that with only a few notable exceptions, the Maui's dolphin research sightings fall within the existing set net closed area and this supports the assertion by SeaFIC and commercial fishers that Maui's dolphins are already protected over their full range.

100 **SeaFIC** highlights that 2006 sightings outside the closed area are highly uncertain due to concerns by DOC over the reliability/consistency between observers, correct identification of species, and the lack of corroborating evidence by experienced commercial fishers.

101 **ESL** questions the sighting of Maui's dolphins off Whitecliffs during the 2008 survey as there had been a large number of boats and sea users in Taranaki over the past summer (due to very good weather). During this period, there have been no public sightings of Maui's dolphins within Taranaki despite a record number of recreational boats fishing within the Taranaki area. The absence of recent sightings casts doubt on the validity of the 2008 survey.

102 **WWF** submits that "one off" surveys are likely to severely underestimate the full distribution of Maui's dolphins given the very low population size.

Public sightings

103 **SeaFIC** raises concerns about the high proportion (41%) of sightings recorded in DOC's database are made by members of the public. While acknowledging that many of these sightings will be valid, it contends that none have been corroborated by other information, and as such, highlights the "danger" of using such information when providing advice to ministers. **SeaFIC** notes that a proportion of public sightings are made in areas and/or depths where research surveys have not found evidence to support the existence of dolphins within these areas. It notes the database has insufficient information to distinguish between verified and dubious sightings. It also notes various issues with the use of precise location information associated with various public sightings, particularly those where GPS data are provided.

104 **EHL** states the sighting information confirms the general range of Maui's dolphins is south of Kaipara Harbour and there is no justification to restrict fishing inside the harbour.

105 [REDACTED] does not support a set net ban in Kawhia Harbour as Maui's dolphins do not occur inside the harbour and there have been no dolphin mortalities.

106 [REDACTED] questions the validity of the sighting database as he considers many sightings are extremely unreliable. He believes many sightings are reported to force you to make unqualified decisions.

107 **F&B** states the new information confirms that Maui's dolphins are distributed from Maunganui Bluff to New Plymouth. It notes that several sightings were more than 4nm from shore and south of the set net closure, including some pods comprising of up to 15 dolphins. There are also sightings inside harbours (Kaipara, Manukau and Raglan). F&B notes you should take into account the risk from fishing activities outside the current protection measures, and therefore closures should be extended to protect the full distribution range.

108 **WWF** submits that reported sightings on its own database are independently validated using a "scientifically verifiable validation criteria" to rank reports as to their validity and strength. It notes the value of public sightings should not be downplayed as it provides a useful tool to identify the distribution of Maui's dolphins and gives another important source of information for decision-making.

109 **WWF** expresses concerns that the new information does not adequately represent the full extent of sightings. It contends there is substantial evidence of Maui's dolphins in the Manukau, Kaipara and Kawhia Harbours, and along the adjoining coastline (Piha, Bethells, and Muriwai Beaches) based on sightings, acoustic research and fishing mortality information.

110 **WWF** states the draft TMP selectively under reports the sighting information within Taranaki, and this approach provides no allowance for recovery and year-to-year dolphin movement. It also notes there is sighting information to confirm that dolphins are beyond the offshore limits of the current set net closure.

Acoustic detections

111 [REDACTED] states the presence of Maui's dolphins within harbours (in at least three of the five harbours) is well documented including acoustic detections, and should be included in NIWA's risk analysis. She notes Maui's dolphin sounds are indistinguishable from Hector's dolphins and this provides confidence that T-PODS are effective as a research tool for studying Maui's dolphin distribution.

112 **SeaFIC** notes that the DOC database includes a number of acoustic detections and reiterates its concerns over the use of these data to determine dolphin distribution. It notes that acoustic detections are not supported by visual sightings.

Incident information

113 **SeaFIC** states that the inclusion of historical stranding data on DOC's website provides very limited information as it does not differentiate between incidents that occurred before fishing restrictions were put in place in 2003 and that occurred after. It highlights that no reference is made to the fact that there have been no deaths of Maui's dolphins attributed to fishing since 2003. **SeaFIC** believes making this information available is misleading and will increase public

misconceptions about the impacts of fishing on Maui's dolphins. It expects ministerial advice on stranding data to demonstrate a higher degree of analytical rigour.

114 **ESL** notes that the DOC incident database includes a number of errors that draws into question its validity, and suggests DOC is adopting this approach to justify extending the southern boundary of the set net closure. It highlights there have been no fishing-related mortalities since the 2003 set net restrictions, and that DOC must obtain more accurate, factual and useful information before decisions are made.

115 **AHRFC** contends that the DOC incident database demonstrates very low level of entanglements with recreational set nets, e.g. one dolphin mortality per year over the past 20 years. It believes the database does not present the risk of recreational set net entanglement current situation well.

MFish response

116 **MFish** acknowledges that the DOC sightings database represents some scientific survey and anecdotal information. The weighting assigned to particular information is subject to the certainty, reliability, and adequacy of that information. In general terms there is a hierarchy in the quality of information available:

- a) Scientific peer-reviewed material
- b) Scientific un-peer-reviewed material
- c) Anecdotal reviewed material (Maui's Public Sighting Database)
- d) Anecdotal unreviewed material from reliable sources (DOC catalogue)
- e) Anecdotal unreviewed material (DOC catalogue)

117 In general, greater weight should be placed on scientific information above anecdotal information, particularly where the information has been scientifically peer reviewed. Within the overall context and weight given to anecdotal information, greater reliability could be placed on anecdotal information that has been subject to some form of systematic review and/or validation process as opposed to more general anecdotal information from the public.

118 In relation to information on Hector's and Maui's dolphins, **MFish** considers scientific material such as population surveys and aerial sightings information should be given greater weight than anecdotal information such as that contained in the DOC catalogue or the Maui's Public Sighting Database. The DOC catalogue contains both scientific and anecdotal information. DOC notes that the anecdotal information has come from a variety of reliable sources (including DOC and **MFish** staff, commercial fishers, recreational fishers, surfers and the general public), but acknowledges that there may be uncertainty surrounding sightings information and for that reason has removed sightings with a high level of uncertainty. Nevertheless, **MFish** notes that the unreviewed anecdotal information (public sightings) remains highly uncertain and should be treated with caution when considering weight to be applied for the purposes of making management decisions.

119 The **MFish** final advice on Maui's dolphin contains a detailed analysis of available information on sightings, acoustic detections and reported mortalities, including considerations of appropriate weighting that should be given to the information for the purposes of decision-making.