Department of Conservation
Te Papa Atawhai

Interim Extension of the Marine Mammal Sanctuary and Seismic Survey Regulations to Manage the Risk of Maui's Dolphin Mortality

Purpose

1 The Department of Conservation (DOC) is seeking submissions on a proposed interim extension of the West Coast North Island Marine Mammal Sanctuary from Oakura (Taranaki) to Hawera and an extension of the seismic survey regulations within the sanctuary. This proposal is to enable management of human-induced threats to Maui's dolphins. The interim measure would remain in place while review of the Maui's portion of the Hector's and Maui's Dolphin Threat Management Plan (TMP) is undertaken and recommendations as a result of this review are put forward.

2 Submissions should be received by **1200 hours 19 April 2012** and can be sent to Sean Cooper, Marine Conservation Team Manager, Department of Conservation, PO Box 10420, Wellington 6140 or to marine@doc.govt.nz

Background

3 Maui's dolphins are protected species listed under the Marine Mammals Protection Act 1978 (MMPA). They are endemic to New Zealand and one of the world's rarest dolphins. Maui's dolphins are classified as 'nationally critical' and 'critically endangered' by the Department of Conservation (DOC) and the International Union for the Conservation of Nature (IUCN).

4 Maui's dolphins are susceptible to human-induced threats. Human threats include fishing, boat strike, mining, construction, coastal development, pollution, marine tourism, marine farming and climate change www.doc.govt.nz/mauisthreats.

5 All marine mammals are protected under the MMPA. It is the Minister of Conservation and the Department's role to enforce the MMPA and implement tools as needed for the protection and management of marine mammals.

6 One of the tools under the MMPA is the establishment of Marine Mammal Sanctuaries. The Minister of Conservation can declare a Sanctuary and restrict specific activities within it. A sanctuary defines an area that is important to a particular species of marine mammal for feeding, breeding and other important life history behaviours.

Current protection for Maui's dolphin

7 The Hector's and Maui's dolphin Threat Management Plan (TMP) (www.fish.govt.nz) was jointly developed by MAF and DOC and consulted upon in 2007. Measures to protect Maui's dolphins were put in place through the TMP in 2008.

8 The West Coast North Island Marine Mammal Sanctuary was established under the Act in 2008. This currently extends from Maunganui Bluff in Northland to

Oakura Beach in Taranaki and offshore to 12 nm (see Appendix One). The sanctuary also established restrictions on sea bed mining and on seismic survey activities as both were known to be potential threats to the dolphins.

9 Set net, trawl and drift net fishing closures (under the Fisheries Act) are in place to protect Maui's dolphins from fishing-related threats on the west coast of the North Island (WCNI). The current restrictions also run from Maunganui Bluff (Northland) to Pariokariwa Point (North Taranaki) and offshore to 7 nm.

10 MAF is consulting on proposed interim measures to the set net restrictions on the west coast of the North Island: www.fish.govt.nz.

New information available

Maui's dolphin abundance estimate

11 New research[1] estimating the population abundance of Maui's dolphins has been released. This research estimates the population of Maui's dolphins (excluding calves) to be 55 (with 95% confidence limits (CL) that the population is between 48 and 69), which is significantly lower than the 2005 estimate (111 individuals with 95% CL of 48 – 252). View the report at: www.doc.govt.nz/mauisestimate.

12 DOC is commissioning an updated Potential Biological Removal (PBR) estimate based on the new population abundance from independent researchers. This will be made available through the DOC website. The PBR analysis estimates the maximum number of dolphins, not including natural mortalities, which may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (OSP) size with high probability.

Maui's dolphin mortality in commercial set net

13 A dolphin mortality, considered by DOC likely to be a Maui's, occurred in a commercial set net off Cape Egmont, Taranaki on 02/01/12 (hereafter referred to as the January mortality). See Appendix One for the location of this incident (indicated by a red diamond).

14 The mortality was reported by the fisher to be a Hector's dolphin. It is however not possible to visually identify between Hector's and Maui's dolphins. DOC considered that the dolphin was likely to be a Maui's dolphin, based on the information reported by the fisher in regard to the location of the incident, as well as DOC's knowledge of Maui's and their distribution. However, this assessment is uncertain and strongly disputed by industry.

15 This mortality occurred outside of the current set net fishing closure and the Marine Mammal Sanctuary.

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[1] Hamner, R.M; Oremus, M.; Stanley, M.; Brown, P.; Constantine, R.; Baker, C.S. 2012: Estimating the abundance and effective population size of Maui's dolphins using microsatellite genotypes in 2010-11, with retrospective matching to 2001-07. Department of Conservation, Auckland. 44pg.

Review of Maui's dolphin threat management

16 DOC and MAF consider that, in light the above information, a review of Maui's dolphin threat management is necessary. Both agencies consider that the most appropriate mechanism to undertake this is through a staged review of the TMP. DOC and MAF expect the review of the Maui's component of the TMP to be completed by November 2012 with recommendations provided to Ministers.

17 A review would be undertaken for Maui's dolphins first, given the new information, followed by a review for Hector's dolphins.

18 The scope of the Maui's component of the review will include a risk assessment of all impacts on Maui's dolphins (human-induced and non human-induced) and provide Ministers with advice on various mitigation measures for human-induced threats, research priorities and monitoring.

19 Further information on the review process will be available shortly.

Need for interim measures

20 The consequence of an additional human-induced mortality to the Maui's dolphin population is considered by DOC to be high because:

- The Taranaki-Whanganui region was historically part of the Maui's dolphin population's distribution. Maui's dolphins were once found along most of the west coast of the North Island and up the east coast as far as the Bay of Plenty. There has been a reduction in sightings of Maui's dolphin in recent years in this southern extent of their range; indicating a reduction in range from what was once a centre of the population (TMP, pg 69).
- The Maui's population is at a very low level (latest estimate of 55 individuals excluding calves) and each or any additional mortality (including natural mortality) increases the chance that the population will not be able to recover.
- The previous PBR based on the population estimate of 111 was 1 human-induced death in 5 years. Given the smaller population estimate recently released, a revised PBR based on this estimate will be lower. DOC has commissioned a revised PBR from independent researchers. However, preliminary indications from MAF are that the population can only sustain 1 human-induced mortality every 10 to 23 years; supporting the fact that it is imperative that human-induced mortality be zero.
- Since 2002, a total of 12 Maui's dolphin mortalities have been recorded in the DOC incident database. Three of these mortalities were from interactions with set nets (two considered to be from amateur set net near or in the Manukau Harbour and one being the January commercial mortality).
- There is a 75% likelihood that the population has been declining between 2001 and 2011 (MAF preliminary assessment).

- The loss of one or two breeding females diminishes the resilience of the population and its ability to respond to any further impact.[2]
- Non-fishing human-induced mortality needs to be mitigated as well as fishing related mortality.
- Seismic surveys produce high power sound into the marine environment. The potential impacts on marine mammals from seismic surveys include masking of behaviours such as communication and foraging, but at these high levels can also lead to temporary or permanent hearing loss or auditory damage.

21 The following factors should also be taken into account:

- Although DOC considers the January mortality to be a Maui's dolphin, this cannot be confirmed.
- A small population size means that Maui's dolphins may go extinct even in the absence of human-induced mortality, through stochastic events (e.g. disease or catastrophic weather) or depensation effects.
- However, evidence from the recent report on Maui's abundance suggests that while the population size is low, there is a chance that Maui's dolphins could recover should human-induced mortality be sufficiently mitigated.[3]

Proposed Measures

22 DOC is proposing an interim extension of the West Coast North Island (WCNI) Marine Mammal Sanctuary (MMS) to Hawera with restrictions on seismic surveys throughout the MMS (12nm).

23 The Taranaki-Whanganui region was historically part of the Maui's dolphin population's distribution and decreased sightings in the area show evidence of range restriction. Despite the infrequency of sightings in the area, they still occur and a dolphin, likely a Maui's dolphin, was incidentally caught in a set net in January. To support the recovery of Maui's dolphins it is therefore important to mitigate threats in the southern extent of their range.

24 The southern boundary of these measures to Hawera is consistent with new research on Maui's dolphin home ranges, which are larger than previously believed. Research found the maximum distance between two sightings of the same individual was 80 km, and several moved in the order of 30-40 km. Hawera is approximately 79km from where the January dolphin mortality occurred.

25 Restrictions on seismic surveys within the proposed sanctuary boundaries in the interim are also appropriate. Impacts of seismic surveys on marine mammals include; masking of behaviours such as communication and foraging and at high levels can lead to temporary or permanent hearing loss or auditory damage.

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[2] The January dolphin mortality was reported by the fisher to be a female and another female Maui's dolphin was discovered dead (cause of death unknown) on the beach in Manukau Harbour in October 2011.

[3] The report highlighted in particular three results that are positive signs for the recovery of Maui's dolphins, 1) level of genetic diversity maintained, 2) sex ratio is near even but slightly biased to females which increases reproductive ability for the population, 3) and the presence of two female Hector's dolphins within the Maui's dolphin range. Should they interbreed this will boost both the reproductive potential of the population and increase their genetic diversity.

26 To mitigate the impact from seismic surveys it is proposed that the current WCNI Marine Mammal Sanctuary and the restrictions on seismic surveys within the MMS be extended to Hawera and offshore to 12nm. (12nm is consistent with the offshore boundary of the current MMS). For information on the current regulations see www.doc.govt.nz/WCNI.

Implementation and Timeframe

27 The proposed interim extension of the Marine Mammal Sanctuary and the seismic survey regulations within will be implemented under the MMPA.

28 DOC considers that a responsive implementation period is necessary should the Minister consider the interim sanctuary extension necessary. DOC proposes that the sanctuary extension could be implemented by late-May 2012.

Conclusion

29 DOC and MAF consider the new information available on Maui's dolphins warrants a review of their threat management. While the review is being undertaken there is risk of further Maui's dolphin mortalities occurring. DOC is proposing to manage the threat of human-induced mortality in the interim while this review is being undertaken.

30 The measure being proposed by DOC is to extend the current Marine Mammal Sanctuary from Oakura to Hawera and out to 12 nautical miles. Restrictions on seismic surveys would also be extended throughout the sanctuary.

31 DOC is seeking submissions on this proposed measure and/or any alternative options as well as any other detail discussed in this paper. Submissions should be received by **1200 hours on 19 April 2012**. Please address your submissions to Sean Cooper, Marine Conservation Team Manager, Department of Conservation, PO Box 10420, Wellington 6140 or to marine@doc.govt.nz.

Further Information

32 The report entitled: Estimating the abundance and effective population size of Maui's dolphins using microsatellite genotypes in 2010-11, with retrospective matching to 2001-07, by Hamner et al. can be accessed at: www.doc.govt.nz/mauisestimate.

33 For more information on Maui's dolphin sightings and the Hector's and Maui's dolphin incident database go to: www.doc.govt.nz/mauisightings, and www.doc.govt.nz/dolphinincidents

34 For more information on the current West Coast North Island Marine Mammal Sanctuary go to: www.doc.govt.nz/WCNI.

Appendix One: Proposed interim extension of West Coast North Island Marine Mammal Sanctuary with seismic survey regulation