



Facing Extinction

New Zealand's Forgotten Dolphins

ON THE VERGE OF EXTINCTION

Hector's dolphins (*Cephalorhynchus hectori*) and their close relative the Maui's dolphin (*Cephalorhynchus hectori maui*) live only in New Zealand and are both the smallest and rarest marine dolphins on earth. Since the introduction of nylon filament set nets in the 1970s, Hector's dolphin numbers have dropped from 30,000 to 7,270 (CV 0.16). The situation for Maui's dolphins, a subspecies of Hector's dolphins, is even worse. More than 94% are already lost. With just 55 survivors older than one year (48-69), less than 20 breeding females, and an annual decline of around three percent, Maui's dolphins are facing imminent extinction.

Hector's and Maui's dolphins have declined for more than three decades because their protection is inadequate in terms of the areas and the fishing methods it covers. Recent research, considered by the IWC's Scientific Committee in June, showed that protected areas are too small to be effective and progress in extending set net and trawl net free areas has been too slow to achieve recovery as part of New Zealand's national and international obligations (Slooten 2012).

New Zealand Dolphins and the IWC

Following the extension of protection measures for Hector's dolphins in 2008, the IWC's Scientific Committee commented on this issue by stressing "that additional measures may be required to ensure recovery of the species." (IWC 2009). Substantial areas of dolphin habitat were excluded under the new measures ignoring strong scientific evidence and advice. Dolphin bycatch has continued in these areas and the New Zealand government has since reversed some of these fishing restrictions further reducing protection.

On 28th June 2012 temporary emergency measures for the protection of Maui's dolphins were announced. Yet, even if these most recent changes are taken into account, Hector's and Maui's dolphin range continues to overlap substantially with gillnet and trawl fisheries (see map overleaf).

At its 2012 meeting of the IWC Scientific Committee noted that bycatch in gillnet and trawl fisheries is still

the most serious threat to Hector's and Maui's dolphins, reports that "Bycatch in 'exemption' areas without protection measures, and in areas with incomplete protection, is causing continued population declines and population fragmentation" for Hector's and Maui's dolphins. "Weak protection on the west coast South Island, a lack of protection on the north coast South Island and 'exemption' areas in other regions are preventing species recovery".

The SC added that Hector's and Maui's dolphin populations are "predicted to recover if the boundaries of the protected areas were extended to the 100m depth contour." The SC "expressed particular concern about the low abundance of Maui's dolphin "given the latest population estimate of only 55 individuals over one year old and the estimated population decline of about 3% per year."

The SC "recommends the immediate implementation of the proposal by the New Zealand Ministry for Primary Industries to extend the North Island

protected area to approximately 80 km south of the latest dolphin bycatch site". The Committee recommends further that protected areas should extend "offshore to the 100m depth contour, including the harbours for gillnet and trawl fisheries. This would protect part of an area with high gillnet and trawl fishing effort between the North and South Islands."

"Further population fragmentation could be avoided by also protecting the north coast of the South Island, providing safe 'corridors' between North and South Island populations", and "Adequate observer coverage across all inshore trawl and gillnet fisheries" should be put in place to "obtain robust scientific data on continuing bycatch as a means of assessing the effectiveness of protection measures".

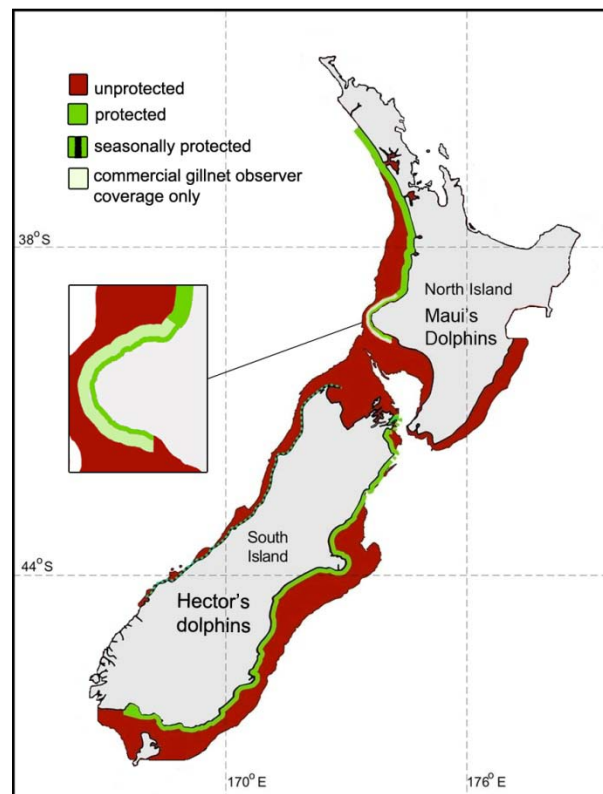
Dolphin Bycatch & Population Decline

The New Zealand government acknowledges that fishing is the greatest cause of human-induced mortality for Maui's and Hector's dolphins, where the cause of death is known. An official review of reported mortalities identifies entanglement in set nets as the greatest risk of human induced mortality, followed by trawling. Population recovery is unlikely under current management. This includes interim protection measures announced at the end of June 2012 for Maui's dolphins, which do not include controls on trawling and do not extend across the animals' full coastal range offshore. Specifically, the new measures do not apply to natural harbours and a migration corridor to connect Maui's dolphins with country's South Island Hector's dolphins. The latter is vital to counteract inbreeding and genetic isolation as it is likely that Hector's and Maui's dolphins mix in the southern part of the Maui's dolphin's range.

Reproduction and Recovery

Hector's and Maui's dolphins reproduce very slowly. Recovery is therefore protracted. However, without bycatch, Hector's dolphins could recover to at least half their original numbers within decades.

Even under ideal circumstances a population of around 60 Maui's dolphins can grow by just one animal per year at the most (2%). In the absence of human induced mortality, it would take 10 years before the population reaches 73 individuals.



Hector's and Maui's dolphins inhabit coastal waters up to a depth of 100 m (red). Because only a fraction of their home is protected against harmful fishing methods (green) their numbers continue to decline.

All risk analyses to date have focused on commercial gillnetting alone and do not incorporate the effects of trawling or recreational gill netting (Slooten & Davies 2011). Current bycatch estimates therefore significantly underestimate the population effects of fishing. This is because quantitative estimates for those fishing methods are unavailable due to a lack of observer coverage. Even so, known Hector's dolphin bycatch exceeds sustainable levels (Potential Biological Removal/PBR) about 23 times on the east coast of New Zealand's South Island



In their severely depleted state, Maui's dolphins can only absorb one human induced death every 10-23 years. They are therefore extremely vulnerable, and even the loss of a few individuals will have devastating consequences in terms of population

Genetic Diversity

The level of genetic diversity amongst Maui's dolphin is relatively low, but higher than expected for such a small population. Scientists are optimistic about the ability of Maui's dolphins to recover if human induced mortality is eliminated. From a biological perspective, Maui's dolphins are not doomed to extinction.

Legal Mandate

National Statutory Obligations

The purpose of the New Zealand's **Fisheries Act 1996** is set out in Section 8 as providing for the utilisation of fisheries resources while ensuring sustainability". "Ensuring sustainability" is defined to include the avoiding, remedying or mitigating of any adverse effects of fishing on the aquatic environment.

Decision makers are required to take into account that "*associated or dependent species should be maintained above a level that ensures their long-term viability*", that biological diversity is maintained and that habitat of particular significance for fisheries management should be protected.

Section 10 stipulates that the Minister must base his decisions on the best available information, take into

International Obligations under the Convention of Biological Diversity

New Zealand is a signatory to the Convention on Biological Diversity (CBD) and as such made a formal commitment to the Convention's Strategic Plan for 2011 to 2020 (Aichi Biodiversity Targets). This includes the obligation to ensure that "the extinction of known threatened species has been prevented and their conservation status, particularly

of those most in decline, has been improved and sustained" and that as the impacts of use of natural resources are kept "well within safe ecological limits". Current management of Hector's and Maui's dolphin populations would seem to conflict with these requirements.



account any uncertainty, and should be cautious when information is uncertain, unreliable or inadequate. The absence of, or uncertainty in, any information should not be used as a reason for postponing or failing to take any measure to achieve the purpose of the Act.

Section 5 of the Act requires the Minister to act "in a manner consistent with "New Zealand's international obligations relating to fishing, specifically the management of fishing related threats to protected species". According to New Zealand's **Marine Mammals Protection Act 1996**, threatened species should become non-threatened as soon as practicable and in any case within 20 years

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Conclusions

Objective conservation targets

The recovery of Hector's and Maui's dolphins has been marred by a consistent lack of objective, science-based, measurable management targets.

Effective Fishing Restrictions

Scientists and conservationists have been calling for a New Zealand-wide ban on gillnets and trawling in waters up to 100m depth for almost three decades. These calls have been ignored, and Hector's and Maui's dolphin numbers continue to decline. NABU International reiterates this urgent call for effective protection before it is too late. A demarcation to a water depth of 100 metres rather than an arbitrary distance from shore (i.e., 2, 4 or 7 nm offshore) best defines the animals' habitat. It also offers more effective protection in terms of transparency, compliance, cost and efficiency.

Monitoring

There is a pressing need for a comprehensive assessment of fisheries bycatch throughout the dolphins' range. With less than 1% of fisheries-related dolphin deaths between 2000 and 2006 reported by fishermen, effective monitoring and policing of bycatch levels and protection measures is an urgent requirement if the situation is to be brought under control. Failure to implement a credible observer programme for gillnet and trawl fishing will compromise the upcoming review of the Hector's and Maui's Dolphin Threat Management Plan from the outset through lack of data on continued bycatch rates and therefore the effectiveness of current protection measures.

Sustainable Fishing Methods

Furthermore, a transition to selective, sustainable fishing methods that do not kill dolphins would seem to be the best option in terms of long-term biological and economic sustainability.

Making History

The Baiji, or Chinese river dolphin, is the only cetacean to become extinct as a result of human activities. With just a few dozen survivors, Maui's dolphins are poised to follow suit as the first marine cetacean to die out due to human actions.

NABU International understands the pressure fishing interests bring to bear on the Government's decision making process. Nonetheless, we sincerely hope that New Zealand will show the commitment and leadership required to save this species and leave its long-term survival as a legacy for the world. Failure to do so will forever tarnish New Zealand's reputation as an environmentally responsible nation.

Bibliography

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