Parliamentary Commissioner for the Environment
Te Kaitiaki Taiao a Te Whare Pāremata

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Hon. Stuart Nash
Minister for Fisheries
Parliament Buildings
Wellington

Hon. Eugenie Sage
Minister for Conservation
Parliament Buildings
Wellington

Dear Ministers

I have been following the consultation on a revised Threat Management Plan (TMP) for Hector's and Māui dolphins. The fate of these threatened taonga – the Māui subspecies being critically endangered – depends on new and evolving scientific research and our ability to respond rapidly and effectively to threats.

The risk assessment underpinning the TMP addresses, in particular, fisheries by-catch and the disease toxoplasmosis, caused by the parasitic protozoan *Toxoplasma gondii*. Possible responses to the fisheries threat are understandably analysed in great depth. However, relatively scant consideration is given to a response to the emerging threat of toxoplasmosis, despite the consultation document indicating that this disease poses an important threat to the dolphins.

Leaving debate about population models aside, the death of two individuals from toxoplasmosis in a species with a population size estimated between 57 to 75 breeding individuals, as is the case for the Māui dolphin, surely justifies further investigation. Without swift action, it seems that the Māui dolphin faces extinction,[1] and given that toxoplasmosis has been linked to marine mammal decline elsewhere,[2] the case for urgent precautionary action seems clear. My concern is that we cannot afford to wait until the science is settled before acting to reduce the contribution of toxoplasmosis to dolphin decline.

It appears to me that research efforts here and internationally could narrow down the management actions needed to give the dolphins a chance to recover, if pursued with some urgency. Beyond dolphins, research to understand the transmission of *T. gondii* through soil, water and infected organisms may have broader benefits to public health, primary production and conservation. Some international research looks at toxoplasmosis through a One Health lens,[3] as it is a zoonotic disease with potentially broad impacts.

I understand that you are developing plans to address toxoplasmosis through a multi-stakeholder process and are considering a platform to identify scientific priorities for research on toxoplasmosis. I support such leadership being taken on this issue and would like to suggest some considerations to bear in mind when establishing these processes.

Firstly, it is essential that sufficient capacity and resourcing is allocated to the toxoplasmosis issue. I would, however, stress that such resourcing should be *in addition to*, not in place of, that allocated to addressing threats currently being addressed, such as fishing by-catch. Fishing is a well-established cause of dolphin mortality and mitigation actions have proved to be effective at increasing adult survival.

Secondly, it is also essential to prioritise and target research. I would urge that effort is focused on enabling the implementation of evidence-based interventions. This includes directing resourcing and capacity at the operational level to ensure that interventions are timely and cost-effective, not just resolving a scientific debate.

Thirdly, while it is important to fast-track work to reduce the threat to Hector's and Māui dolphins, I recommend that appropriate account be taken to understand the potential for broader impacts of toxoplasmosis as an emerging threat. Even if some argue that the toxoplasmosis–dolphin mortality link is weak, toxoplasmosis is a wider problem and it does merit a more joined-up, focused approach. The management response should be proportional to the threat. As such, toxoplasmosis research should be funded and conducted under urgency. If further research downgrades the risk of toxoplasmosis, funding and resources can be downgraded accordingly.

Finally, as understanding the impacts of toxoplasmosis is an emerging field of research worldwide, any science platform should have a broad mandate to access local and international knowledge to achieve an approach that is effective and locally relevant. At a local level, this means ensuring engagement with Māori to incorporate and implement mātauranga Māori approaches where available. For example, mātauranga Māori has provided a potential solution to kauri dieback. Internationally, New Zealand researchers should tap into the breadth of research and expertise already available on toxoplasmosis, including that concerning Australian marsupials, Hawaiian monk seals and California sea otters, to name but a few.

Yours sincerely

Simon Upton
Parliamentary Commissioner for the Environment
CC: Prof. Ken Hughey

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[1] Hare *et al.* (2019) state that Māui dolphin "are the rarest marine dolphin in the world... No global precedent exists for the successful recovery of a cetacean once the population reaches such low numbers. However, future conservation actions include active mitigation against anthropogenic risk and monitoring for possible genetic hybridisation via recent dispersal of Hector's dolphins." Hare et al. (2019). Journal of the Royal Society of New Zealand. https://doi.org/10.1080/03036758.2019.1599967.

[2] For example, the endangered Hawaiian monk seal and California sea otter.

[3] Aguire et al. (2019) define One Health as a "collaborative, interdisciplinary effort that seeks optimal health for people, animals, plants, and the environment." Aguirre et al. (2019). EcoHealth. https://doi.org.10.1007/s10393-019-01405-7.