

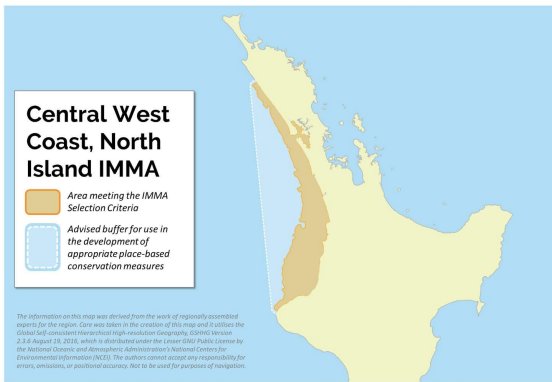
Central West Coast, North Island IMMA

Description:

The central west coast of the North Island of New Zealand encompasses open, coastal waters with high levels of turbidity punctuated by a number of harbours. This is the core habitat for the Māui dolphin (*Cephalorhynchus hectori mauī*) (Baker et al. 2002) listed by the IUCN as Critically Endangered, a subspecies whose range is now mainly restricted to a ~250km stretch of coastline between south of Kaipara Harbour and north of Raglan (Constantine et al. 2021). The sub-species' range has been significantly reduced as a result of bycatch in fisheries (Dawson et al. 2001). These dolphins favour turbid waters (Derville et al. 2016; Roberts et al. 2019a) and are exposed to risks from fishing activities (although these have been reduced with the West Coast Marine Mammal Protected Area and recent increases in set-net and trawl fishing restrictions) and disease (summarised in Roberts et al. 2019a, Roberts et al. 2019b). Harbours are rarely used by Māui dolphins now but were once important habitat (Rayment et al. 2011). The harbours along this coast are used by common bottlenose dolphins and killer whales (R. Constantine, unpublished data). The most recent Māui dolphin abundance estimate was 54 (95% CI = 48-66) dolphins aged 1+ (Constantine et al. 2021).



Figure 1 – Māui dolphin mothers and calves. Photo: University of Auckland & Department of Conservation



Area Size

19,785km²

Qualifying Species and Criteria

Māui dolphin – *Cephalorhynchus hectori mauī*
Criterion A, B1

Marine Mammal Diversity

Delphinus delphis, *Tursiops truncatus*, *Orcinus orca*

Summary

These nearshore waters, delineated by the 100m depth contour encompass the New Zealand West Coast North Island Marine Mammal Sanctuary and includes the coastal harbours. These turbid waters are the preferred habitat for endemic *Cephalorhynchus* dolphins. The area encompasses the known current habitat of the IUCN Red Listed Critically Endangered Māui dolphin and protects the important potential for distribution of the sister-taxa, Hector's dolphins (listed as Endangered by IUCN) from the South Island. The area is also used by transient common bottlenose dolphins and killer whales. Common dolphins use the more offshore waters for feeding (although occasionally are closer to shore if there are schooling fishes inshore). They are subject to fisheries bycatch pressure in particular off this coast including northern Taranaki waters.



Figure 2 – Māui dolphin dorsal fin
 Photo: Department of Conservation New Zealand/University of Auckland

The turbid waters from the harbour outflows and alongshore coastal erosion form primary habitat for Māui dolphin (Derville et al. 2016, Roberts et al. 2019a). The dolphins' preferred prey are small demersal and benthic fishes (Miller et al. 2013) in particular, ahuru and sole (Roberts et al. 2019a; Ogilvy et al. 2022). This IMMA incorporates feeding grounds for common dolphins particularly in the northern Taranaki region where they prey on pelagic schooling fishes such as Jack mackerel, an important fishery in the region but one that results in dolphin bycatch (Abraham et al. 2017). Common dolphins also use the nearshore coastal waters.

Recently, individuals assigned to the other subspecies of *C. hectori*, which bears the same common name as the species (which is red-listed as Endangered by the IUCN), have been observed in the primary habitat of Māui dolphins with individuals originating from the east and west coasts of the South Island (Hamner et al. 2014, Constantine et al. 2021). There are no estimates for bottlenose dolphins or killer whales in the IMMA but the killer whales form part of a wider-ranging New Zealand population (Baker et al. 2019) and at least some of the bottlenose dolphins are part of the northeast coast North Island population (R. Constantine, unpublished data). The common dolphins are part of a wider-ranging population found in offshore west-coast waters. They

are vulnerable to fisheries bycatch but there is no current abundance estimate for this region (Abraham et al. 2017, Stockin et al. 2014, Stephenson et al. 2020).

Criterion A: Species or Population Vulnerability

This IMMA includes the only currently occupied year-round habitat of Critically Endangered (IUCN Red List) Māui dolphins (Oremus et al. 2012, Derville et al. 2016, Constantine et al. 2021, Roberts et al. 2019a). Their current range is extremely limited compared to their historical range (Dawson et al. 2001). Māui dolphins have been isolated by ~15,000 years from the South Island Hector's dolphins (Baker et al. 2002) and their unique haplotype most likely resulted from a population bottleneck and small home range (Oremus et al. 2012, Pichler & Baker 2000). Their core range has decreased since the 1970s (Russell 1999, Constantine et al. 2021).

Criterion B: Distribution and Abundance Sub-criterion B1: Small and Resident Populations

The entire known range of the Māui dolphin is included in this IMMA. This is a small population (54 dolphins aged 1+ 95% CI = 48-66) facing threats from disease and fisheries bycatch (Constantine et al. 2021, Cooke et al. 2018, Roberts et al. 2019a; Roberts et al. 2021). Individuals have small home ranges averaging

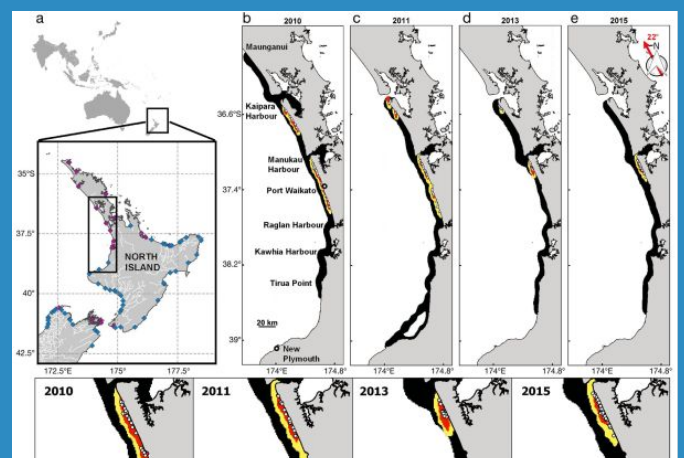


Figure 3 - Kernel density estimate contours and Māui dolphin sightings from 2010-2015 dedicated surveys. From Derville et al. (2016).

35.5 km, with a maximum range of 80 km recorded for one individual (Oremus et al. 2012). A genetic and photo-identification database has identified dolphins up to 20 years after their initial identification highlighting long-term site fidelity. In 2010, there were two female Hector's dolphins genetically identified swimming with Māui dolphins within this IMMA; one of the females was identified again in 2011 and 2020 so remained with the Māui dolphins (Hamner et al. 2014; Constantine et al. 2021). This was considered an extraordinary event, but in 2015 and 2020, two different male Hector's dolphins were also genetically identified with Māui dolphins suggesting long-range movements by Hector's dolphins from the South Island may become a more regular occurrence (Constantine et al. 2016). Surveys have been mostly conducted in summer months when neonates and calves have been observed. Groups containing calves are larger than non-calf groups. These nursery groups contain male and female adults which differs from Hector's dolphins (Oremus et al. 2012).

Supporting Information

Abraham, E.R., Neubauer, P., Berkenbusch, K., Richard, Y. 2017. Assessment of the risk to New Zealand marine mammals from commercial fisheries. New Zealand Aquatic Environment and Biodiversity Report No. 189, Ministry for Primary Industries, Wellington, New Zealand

Baker, A.N., Smith, A.N.H., Pichler, F.B. 2002. 'Geographical variation in Hector's dolphin: recognition of new subspecies of *Cephalorhynchus hectori*'. *Journal of The Royal Society of New Zealand* 32: 713-727

Constantine, R., Steel, D., Carroll, E., Hansen, C., Hickman, G., Hillock, K., Ogle, M., Tukua, P., Baker, C.S. 2021. Estimating the abundance and effective population size of Maui dolphins using microsatellite genotypes in 2020-21, with retrospective matching to 2001. Final Report to the Department of Conservation, Wellington, New Zealand.

Baker, C.S., Boren, L., Childerhouse, S., Constantine,

R., van Helden, A., Lundquist, D., Rayment, W., Rolfe, J.R. 2019. Conservation status of New Zealand marine mammals, 2019. New Zealand Threat Classification Series 29. Department of Conservation, Wellington, New Zealand, pp 18

Cooke, J.G., Steel, D., Hamner, R., Constantine, R., Baker, C.S. (2018). Population estimates and projections of Māui dolphin (*Cephalorhynchus hectori maui*) based on genotype capture-recapture, with implications for management of mortality risk. Report to the 2018 International Whaling Commission, SC/67b/ASI. 15 p.

Dawson, S., Pichler, F., Slooten, E., Russell, K., Baker, C.S. 2001. 'The North Island Hector's dolphin is vulnerable to extinction'. *Marine Mammal Science* 17: 366-371

Derville, S., Constantine, R., Baker, C.S., Oremus, M., Torres, L.G. 2016. 'Environmental correlates of nearshore habitat distribution by the Critically Endangered Māui dolphin'. *Marine Ecology Progress Series* 551: 261-275

Hamner, R.M., Constantine, R., Oremus, M., Stanley, M., Brown, P., Baker, C.S. 2014. 'Long-range movement by Hector's dolphins provides potential genetic enhancement for critically endangered Maui's dolphin'. *Marine Mammal Science* 30: 139-153

Miller, E., Dawson, S., Ratz, H., Slooten, E. 2013. 'Hector's dolphin diet: The species, sizes and relative importance of prey eaten by *Cephalorhynchus hectori*, investigated using stomach content analysis'. *Marine Mammal Science* 29: 606-628

Ogilvy, C., Constantine, R., Bury, S.J., Carroll, E.L. 2022. Diet variation in a critically endangered marine predator revealed with stable isotope analysis. *Royal Society Open Science* 9:220470

Oremus, M., Hamner, R.M., Stanley, M., Brown, P., Baker, C.S., Constantine, R. 2012. 'Distribution, group characteristics and movements of the Critically Endangered Maui's dolphin *Cephalorhynchus hectori maui*'. *Endangered Species Research* 19: 1-10

Pichler, F.B., Baker, C.S. 2000. 'Loss of diversity in the endemic Hector's dolphin due to fisheries-related mortality'. *Proceedings of the Royal Society of London B* 267: 97-102

Rayment, W., Dawson, S., Scali, S., Slooten, L. 2011. 'Listening for a needle in a haystack: passive acoustic detection of dolphins at very low densities'. *Endangered Species Research* 14:149-156

Roberts, J.O., Webber, D.N., Roe, W.D., Edwards, C.T.T., Doonan, I.J. 2019a. Spatial risk assessment of threats to Hector's and Māui dolphins (*Cephalorhynchus hectori*). New Zealand Aquatic Environment and Biodiversity Report No. 214.

Fisheries New Zealand, Wellington, New Zealand, pp. 168

Roberts, J., Constantine, R., Baker, C.S. 2019b. Population effects of commercial fishery and non-fishery threats on Māui dolphins (*Cephalorhynchus hectori maui*). New Zealand Aquatic Environment and Biodiversity Report No. 215. Fisheries New Zealand, Wellington, New Zealand, pp. 18

Roberts, J.O., Jones, H.F.E., Roe, W.D.. 2021. The effects of *Toxoplasma gondii* on New Zealand wildlife: implications for conservation and management. *Pacific Conservation Biology* 27:208-220

Russell, K. 1999. The North Island Hector's Dolphin: A Species in Need of Conservation. MSc Thesis. Auckland: University of Auckland

Stephenson, F., Goetz, K., Sharp, B.R., Mouton, T.L., Beets, F.L., Roberts, J., MacDiarmid, A.B., Constantine, R., Lundquist, C.J. 2020. 'Modelling the spatial distribution of cetaceans in New Zealand waters'. *Diversity and Distributions* DOI: 10.1111/ddi.13035

Stockin, K.A., Amaral, A.R., Latimer, J., Lambert, D.M., Natoli, A. 2014. 'Population genetic structure and taxonomy of the common dolphin (*Delphinus* sp.) and its southernmost range limit: New Zealand waters'. *Marine Mammal Science* 30: 44-63



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