

Hector's & Deepwater Fishing

There is no evidence of Hector's type dolphin captures (i.e. South Island Hector's and North Island Maui) in New Zealand deepwater fisheries.

The deepwater fisheries represent 80% of New Zealand's wild caught seafood.

There are no interactions between Hector's or Maui dolphins and deepwater fisheries

Hector's Dolphins

(Estimated population: 12,000-19,000)

Three main populations: along the east coast, the south coast, and the west coast of the South Island (*Ministry for Primary Industries, 2015*).

Hector's are found in shallow water so there is very little overlap with the deepwater fisheries.

Maui Dolphins

(Estimated population: 55)

Maui is a subspecies of Hector's confined inshore along the northern west coast of the North Island (*Ministry for Primary Industries, 2015*).

There is no overlap with where Maui are found and the deepwater fisheries.

Management since 2008

The Ministry for Primary Industries and the seafood industry have invested more than \$3.8m to manage risks from inshore fishing.

Measures include:

- A Threat Management Plan
- 100% government observer coverage of commercial fishing off the West Coast of the North Island where Maui's are at risk to monitor interactions (*No sightings or captures since measure introduced in 2012*)
- Marine Mammal Sanctuaries and areas where fishing is restricted (*Fig. 1*).

(*Ministry for Primary Industries, 2015*)

Threats

1. Fishing

Risk assessments have been used to identify the risks of fishing to dolphins:

- These dolphins are most vulnerable to entanglement in set nets but where this poses the greatest risk (i.e. where these dolphins and fishing occur in the same place) restrictions have been put in place (*Fig. 1*).
- Government observers monitor interactions and these are assessed to determine if further management is required (*Fig. 3*).

2. Disease

Toxoplasmosis, a parasitic disease, has become established in these dolphin populations causing fatalities (*Fig. 2*). Between 2007 and 2011, necropsies revealed that:

- 66% of Maui dolphins
 - 25% of Hector's dolphins
- examined had died due to toxoplasmosis (*Roe et al., 2013*).

Indirect effects of this disease also include:

- Behavioural changes
- Reproductive loss
- Increased risk to predation.

(*Ministry for Primary Industries, 2016 & Department of Conservation, 2016*)

Fisheries Measures Are Working

- Fishing restrictions increased **600%** (2003-12)
- **15,000 km²** is closed to set netting
- **8,300 km²** is closed to trawling
- **Almost entire range of Maui now closed** to fishing
- NO confirmed Maui captures since 2002 from any fishery
- NO confirmed Hector's captures from trawl fisheries and only seven from set netting since 2002



Disease Needs Managing Too

The New Zealand seafood industry is committed to sustainable seafood and to conserving the marine environment that supports these fisheries. Fishing activities are restricted in areas where Maui are known to live and there have been no captures since.

The very small Maui population remains at risk. Disease should now be the main focus of research to establish what can be done to reduce this major threat.



Figure 1: Known distribution of Maui (left) and Hector's (centre) dolphins and the areas where fishing is restricted to protect these dolphins (right).

Toxoplasmosis

The parasitic disease, toxoplasmosis, is widespread and is killing dolphins.

As illustrated in these maps, toxoplasmosis is having a far more widespread and significant effect on Maui and Hector's dolphins (Fig. 2), compared to the seven set-net captures of Hector's that have occurred since 2002 (Fig. 3).

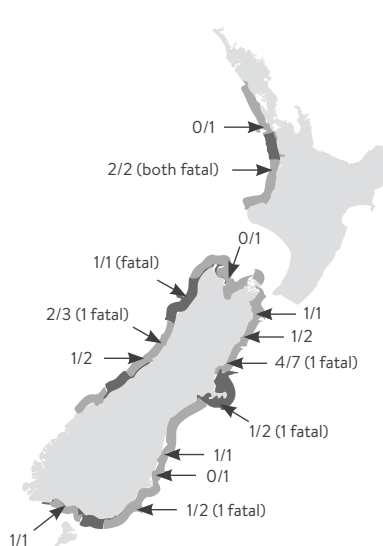


Figure 2: Geographical distribution of toxoplasmosis for North Island (Maui) and South Island Hector's dolphins from necropsies used to identify cause of death. For Maui 2 of 3 deaths were caused by toxoplasmosis (Roe et al., 2013).

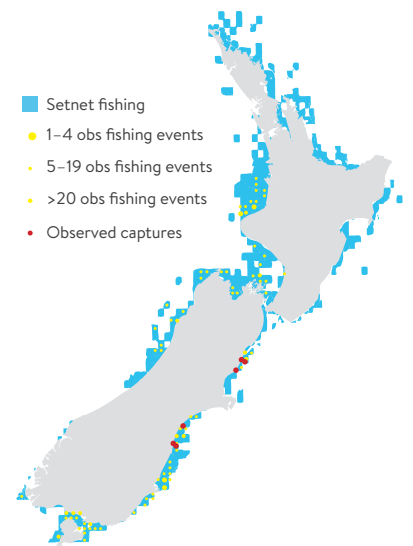


Figure 3: Map of setnet fishing (blue shading), observed fishing events (yellow dots) and observed captures (red dots) between 2002-03 to 2012-13.