



# Potential effects of mussel farming on New Zealand's marine mammals and seabirds

A DISCUSSION PAPER



Department of Conservation  
*Te Papa Atawhai*

Potential effects of mussel farming on New Zealand's marine mammals and seabirds: a discussion paper



Bryde's whale (*Balaenoptera edeni*) found dead after entanglement in a mussel spat catching farm, Great Barrier Island, August 1996. A spat catching line is caught around the whale's jaw and body. (Photo: Dan Woodcock)

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Cover: Underwater view of mussel growing lines. (Photo: Roger Grace)

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## ABSTRACT

Mussel farming is an important and expanding industry in New Zealand. In the year 2000, there were nearly 3000 ha of mussel farms, with proposals for a further 39 000 ha including offshore farms of up to 4000 ha each. There have been no concerted attempts to investigate the effects of mussel farms on marine mammals and seabirds. However, there is growing evidence of adverse effects as these animals are in direct competition for space in the most productive coastal waters. Mussel farms deplete phytoplankton and zooplankton; modify the benthic environment, species assemblages, and local hydrodynamics; increase marine litter; and facilitate the spread of unwanted organisms. Thus, the establishment of mussel farms may lead to loss and degradation of wildlife habitat, either by exclusion or as a consequence of changes to the ecosystem. Thus far, the only adverse effects reported within New Zealand are the exclusion of dusky dolphins from mussel farms areas, and the entanglement and deaths of two Bryde's whales in mussel spat-catching lines. Because of the limited extent of mussel farms to date, effects on wildlife were dismissed as inconsequential. However, the proposed increase in the area used for mussel farming changes the scale of effects and prompts concern. The construction of large offshore farms across the seasonal migration routes of large whales is particularly worrying. An ecologically sustainable mussel farming industry requires a programme to monitor the industry's effects on wildlife and other forms of marine biodiversity. This report provides a resource to assist the mussel farming industry, coastal planners and researchers in the development of an ecologically sustainable industry.

Keywords: Environmental effects, green-lipped mussel, *Perna canaliculus*, sustainable aquaculture, threatened species.