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**ABUNDANCE AND BEHAVIOURAL ECOLOGY OF
BOTTLENOSE DOLPHINS (*Tursiops truncatus*) IN THE
MARLBOROUGH SOUNDS, NEW ZEALAND.**

A thesis presented in partial fulfilment of the requirements for the degree of

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ABSTRACT

In order to survive, animals require both food and protection from predators. These ecological factors are major determinants in habitat selection and social interactions. Determining the causes of habitat selection and examining the behavioural ecology of marine mammals is often a difficult task. In the ever-changing marine environment, factors such as shifts in prey availability, turbidity, sea surface temperature, and salinity result in a highly dynamic ecosystem that influences distribution. This research's primary focus was to establish baseline information on the behavioural ecology of bottlenose dolphins, *Tursiops truncatus* in and around the Marlborough Sounds, New Zealand. Boat based surveys, photo-identification, and group focal follows were used to assess spatial distribution, abundance, home range, and social interactions. Boat based surveys were conducted from 2003 to 2005. Photo-identification data collected from 1997 to 2005 were used in analysis. Uniquely marked individuals ($n = 335$) were sighted throughout the Marlborough Sounds and long-term site fidelity was observed among members in this large open population. Aggregations of between 3 to 172 individuals were observed with a median group size of 12. Group size was influenced by the presence of calves, with groups tending to be larger when calves were present. Larger groups were found to rest more than smaller groups and resting occurred less in the spring months. Association patterns revealed long- and short-term preferred associations between individuals throughout the Sounds. Distribution and movement patterns of dolphins showed they used all areas within the Marlborough Sounds. The population of bottlenose dolphins observed in the Marlborough Sounds were found to be semi-resident with 211.5 (C.I. =

195 – 232) individuals utilising the Sounds year round while other individuals were found to migrate in and out of the area on an annual basis. The Marlborough Sounds appear to be only a portion of a much larger home range for this population.

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